



National Irish Safety Organisation (NISO) –

**Book of
Questions and Answers (1,478)
Safety, Health & Welfare**

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INTRODUCTION

The National Irish Safety Organisation (NISO) has produced this book of over 1,400 questions and answers to help persons and organisations develop their acumen in health and safety.

NISO recognised that no amount of legislation or penalties will be effective unless people can be convinced of the need to change their behaviour to become safety conscious in order to avoid hazards and risks in the workplace. This can only be done through information and training.

NISO has always been convinced that safety and health quizzes have an important role to play along with other forms of training. It is with this in mind that this book was produced to give persons a better understanding of safety and health issues.

To aid the reader, the questions and answers have been divided into 31 sections.

This book will prove useful to persons and organisations who may wish to have in-house safety and health quizzes or for those preparing for the NISO Safety and Health Quiz. (Details available from NISO). The book can also be used for reference purposes.

NISO wishes to acknowledge Kevin Harty and J. P. Goulding. This book would not have been possible without the major voluntary effort given by the above.

ACCIDENTS

1. **Q. *What is an Accident?***
A. It is an unplanned happening.
2. **Q. *What is an 'incident'?***
A. An incident is an unplanned event with the potential to lead to an accident.
3. **Q. *What is a 'hazard'?***
A. A hazard is anything with the potential to cause harm.
4. **Q. *Why remove your gloves before you remove your goggles?***
A. To prevent contamination of the face or eyes by a substance or substances that are on your gloves.
5. **Q. *Is running a suitable pace for a factory or workshop?***
A. No. - You should always walk.
6. **Q. *Give two reasons for not piling a trolley high with goods?***
A.
 1. Obscures Vision
 2. Unstable.
 3. May cause back strain.
7. **Q. *Should accident prevention be left to the Safety Manager as the representative of management, and the supervisory staff in a place of work?***
A. No - It is the responsibility of all concerned in the workplace.
8. **Q. *Has a Safety Officer or Safety Manager a responsibility to see that Safety measures are complied with?***
A. Yes - As an agent of management with delegated responsibility.
9. **Q. *Give two reasons why all accidents should be reported immediately?***
A.
 1. So that an investigation to determine the cause may be instituted.
 2. So that injuries may be attended to.
10. **Q. *What two main precautions must be taken when using a safety belt?***
A.
 1. It should be fastened to a secure point.
 2. The free fall should be kept to a minimum.

ACCIDENTS

11. Q. *Why should all minor injuries be reported. Give two reasons?*
- A. 1. To prevent Reoccurrence.
2. In case of litigation.
3. To prevent sepsis.
12. Q. *What should you do if you receive any injury?*
- A. Report to the First Aid Department.
13. Q. *What should a new employee be told regarding all minor injuries?*
- A. They must be reported at once, to whom and where.
14. Q. *Give two reasons for the investigation of an accident?*
- A. 1. Find the cause,
2. Prevent reoccurrence.
15. Q. *Give two reasons why you should not wear a ring while working on a machine?*
- A. 1. It may increase the risk of an accident.
2. It may make a minor accident worse.
16. Q. *Why investigate an incident even if no accident occurred?*
- A. To prevent the recurrence of a situation where somebody may be injured.
17. Q. *Why keep a record of all accidents, however small?*
- A. 1. Accident Prevention.
2. In case of litigation.
18. Q. *Why wear safety Boots or Shoes?*
- A. To prevent injury to toes and insteps.
19. Q. *If an employee is always having minor accidents and incidents. What action should you take?*
- A. Move him to a less hazardous job.
20. Q. *What responsibility has an employee to avoid accidents?*
- A. He must work safely and use all the protective equipment provided for him.

ACCIDENTS

21. Q. *What are the two principal responsibilities of an employer in relation to accident prevention?*
- A. 1. To provide a safe place of work.
2. To provide safe conditions of work.
22. Q. *If a member of the public is injured in a supermarket as a result of the work activity there and has to receive medical treatment, is the accident reportable to the Health and Safety Authority?*
- A. Yes.
23. Q. *In the safety context, how is "rough boisterous behaviour" referred to?*
- A. Horseplay.
24. Q. *"The application of engineering techniques to reduce accidents and hazards", what is the normal term used for this approach?*
- A. Loss Prevention.
25. Q. *In the early days of space shuttle technology, a space shuttle exploded on take off. What was the name of the space shuttle?*
- A. Challenger.
26. Q. *If a child has an accident at school and has to receive medical treatment, is the accident reportable to the Health and Safety Authority?*
- A. Yes
27. Q. *Management has been known to delegate Responsibility and Authority for Accident Prevention. Are they correct in doing this, qualify your answer?*
- A. No - They are not correct in doing this. You can only delegate Authority, you can not delegate Responsibility, the buck still stops at the Chief Executive's desk.
28. Q. *The human senses, Sight, Hearing, Smell, Feel, and Taste can all be used as a warning device. Give an example how four of them can be used?*
- A. Sight: - Notices, Signs, Signals, Labelling and Notes.
Hearing: - Alarms, Shouts, etc.
Smell: - Odour Detection, Rotten etc.
Feel: - Vibration, Temperature, Sharpness, etc.
Taste: - Foul tasting, Rotten, etc.

ACCIDENTS

29. Q. *Name four areas into which accident costs may be classified?*

- A. 1. Wage Losses.
2. Production Losses.
3. Medical Costs.
4. Property Damage.
5. Investigation Costs.
6. Insurance Costs.

30. Q. *Give four consequences of an accident?*

- A. 1. Pain and Suffering.
2. Loss of work and wages.
3. Loss of production.
4. Damage to plant.
5. Non productive losses.

31. Q. *What are the immediate and ultimate objectives of an accident investigation. Qualify your answer?*

- A. The Immediate Objective - is to get accurate information about the cause and circumstances of the accident.

The Ultimate Objective - is to prevent future reoccurrence's of similar accidents, to uncover new hazards, and to devise methods to control these hazards.

32. Q. *State four methods that can be utilised to prevent new workers to an area suffering accidents?*

- A. 1. Train them in the new work location process
2. Put them in the charge of an experienced worker.
3. Instruct them in the dangers and the precautions to take.
4. Ensure that they have adequate supervision.

33. Q. *Give four safety points about clothing when working near running machinery?*

- A. 1. Single piece.
2. Short sleeves.
3. Close fit.
4. Hip or inside pocket.
5. No loose ties.

ACCIDENTS

34. Q. *Name four ways whereby one could prevent accidents?*
- A. 1. Good Housekeeping.
2. Good Maintenance.
3. Secure Guarding.
4. Cleanliness.
5. Controlling environmental conditions.
35. Q. *Is it necessary to report the collapse of a building even if nobody is injured?*
- A. Yes. A report must be made to The Health and Safety Authority.
36. Q. *In 1984, 34 people died in an gas explosion in a water pumping station in Abbeystead in the U.K. What gas was responsible for causing the explosion?*
- A. Methane.
37. Q. *The Directorate General of the European Commission dealing with Employment, Industrial relations and Social Affairs in 1993 published guidance for small and medium sized enterprises in respect of health and safety protection at work. The guidance outlines the main accident risks mentioned in small and medium sized enterprises in terms percentage occurrence. Name the top four risks identified?*
- A. 1. Cuts.
2. Handling Operations.
3. Falls.
4. Crushing.
38. Q. *The Directorate General of the European Commission dealing with Employment, Industrial relations and Social Affairs in 1993 published guidance for small and medium sized enterprises in respect of health and safety protection at work. The guidance lists four categories of workers being more at risk of accident than others. Name the four?*
- A. 1. Foreign Employees.
2. Young persons and new recruits.
3. Workers aged over 45 years.
4. Temporary workers.
39. Q. *The Directorate General of the European Commission dealing with Employment, Industrial relations and Social Affairs in 1993 published guidance for small and medium sized enterprises in respect of health and safety protection at work. The guidance refers to the hidden costs of occupational accidents and specifically names four. Can you name the four?*

ACCIDENTS

- A. 1. Wage costs.
- 2. Extra personnel administration costs.
- 3. Material costs.
- 4. Other costs (loss adjusters, lawyers, fines etc.).

40. Q. *What is (a) A hazard and (b) A risk?*

- A. (a) Anything which might cause harm.
- (b) Likelihood that harm could occur from a particular hazard.

41. Q. *What are six of the most important duties of a safety officer?*

- A. 1. To ensure that statutory safety requirements are recognised and dealt with by line management.
- 2. The improvement of safety related working conditions.
- 3. Monitoring the appropriateness and wearing of safety clothing and equipment.
- 4. Training in accident prevention.
- 5. Keeping management advised on safety issues.
- 6. Investigation and recording of accidents.
- 7. To contribute to the effectiveness of the consultation Mechanism.
- 8. To provide support to management on Health and Safety issues

42. Q. *When a fatal accident has occurred in a factory, what are the three conditions necessary for allowing the place of fatality to be disturbed?*

- A. 1. The expiration of three clear days after notification to the authority.
- 2. The place has been visited and inspected by an inspector or with the consent of an inspector
- 3. The disturbance was necessary for securing the safety of persons.

43. Q. *Power tools feature in more accidents than any other factor, in particular grinders and grinderettes. Name the three most important measures to be taken for your personal safety when using grinders?*

- A. 1. Wear goggles.
- 2. Check guard is appropriate.
- 3. Use ear protection.

44. Q. *Give three reasons for a supervisor to be concerned with the safety of his workforce?*

- A. 1. He is responsible for the Health and Safety of his work force.
- 2. To increase the moral well being of his/her work force.
- 3. To minimise accidents, pain and suffering, wage loss etc.

ACCIDENTS

45. Q. *Who should have the prime responsibility of investigating an accident, and who should not investigate an accident?*
- A. 1. The Safety Officer, who is trained and equipped for accident investigation. If possible he/she should be accompanied by a member of the safety consultation mechanism, or Safety Representative.
2. The manager/supervisor/foreperson of the area where the accident happened. They may be involved emotionally or by sense of guilt.
46. Q. *The Directorate General of the European Commission dealing with Employment, Industrial Relations and Social Affairs in 1996 published guidance on risk assessment at work. This guidance indicates that a risks assessment involves five discreet steps. Can you name three of them?*
- A. 1. Hazard identification.
2. Identification of workers at risk.
3. Estimation of risk.
4. Consider risk elimination.
5. Introduction of further prevention or reduction measures.
47. Q. *The Directorate General of the European Commission dealing with Employment, Industrial Relations and Social Affairs in 1996 published guidance on risk assessment at work. The guidance indicates that work places can be broadly categorised into three groups. Can you name them?*
- A. 1. Fixed establishments, e.g. offices, schools, factories.
2. Workplaces subject to change, e.g. building sites, docks, shipbuilding..
3. Mobile workplaces e.g. transport facilities, etc.
48. Q. *The Directorate General of the European Commission dealing with Employment, Industrial Relations and Social Affairs in 1996 published guidance on risk assessment at work. The guidance establishes six principles of the hierarchy of prevention of risks. Can you name three of them?*
- A. 1. Avoiding risks.
2. Substituting the dangerous by the non-or less dangerous.
3. Combating risks at source.
4. Applying collective rather than individual protective measures.
5. Adapting to technical progress.
6. Seeking to ensure improvement in protection levels.

AGRICULTURE

1. **Q. *Badly stored and damp straw can expose farmers and stockmen to what disease?***
 - A. Farmers Lung. (pulmonary hypersensitivity).

2. **Q. *Is the mercury used in thermometers often found in the home and on the farm toxic?***
 - A. Yes - mercury vapour is quite toxic and care should be taken if breakage occurs to ensure a full and effective clean up.

3. **Q. *What are Aldrin, Dieldrin, and Endrin?***
 - A. They are Pesticides, which are Highly Toxic.

4. **Q. *At what age can a person on a farm be instructed on the safe operation of a tractor?***
 - A. 14 years (Childsafe Farm Safety Leaflet).

5. **Q. *End stacking of covered round bales in agriculture should not exceed a height of how many times the bales diameter?***
 - A. Three times the bales diameter.

6. **Q. *In pyramid stacking of big round bales in agriculture more than how many layers high is not recommended to stack?***
 - A. Four Layers.

7. **Q. *In end stacking of bales the stacks will be more stable if the height does not exceed how many times the shortest base dimension?***
 - A. 1.5 or 1+1/2 times the shortest base dimension.

8. **Q. *In what two situations is it recommended to stack below the recommended height of agricultural bales?***
 - A. 1. Where there is regular access by people near stacks.
2. Where excessive wind loading is likely.

9. **Q. *What does the acronym PTO stand for?***
 - A. Power take off.

AGRICULTURE

10. Q. *In relation to guarding of PTO shafts, the guard tube should be slightly shorter than the appropriate drive shaft telescopic halves by not more than:*
1. 15mm, 2. 25mm, 3. 35mm. Choose one?
- A. 25mm.
11. Q. *Both the tractor PTO shield and the power input connection guard must overlap the PTO shaft guard by how much 1. 10mm, 2. 30mm, 3. 50mm. Choose one?*
- A. 50mm.
12. Q. *Pesticide storage should be located what distance away from straw, hay, diesel, paints, fertilizers etc?*
- A. At least four metres.
13. Q. *What is the quantity of liquid that bunds for containment of any leakage or spillage of chemicals on the farm should be able to hold?*
- A. 110% of the largest tank or 25% of the total storage capacity, whichever is the greater.
14. Q. *Give the name for the range of diseases carried naturally by animals which can affect humans?*
- A. Zoonosis.
15. Q. *Name two ways in which hazardous substances, sheep dip for example, can enter the body.*
- A. 1. Through the skin (absorption)
2. By swallowing (ingestion)
3. By breathing in vapour or aerosol (inhalation).
16. Q. *List four articles of personal protective equipment that should be worn by workers involved in dipping sheep?*
- A. 1. Non-lined synthetic rubber gloves
2. Wellington boots
3. Waterproof leggings or trousers made of nitrile or PVC
4. Waterproof coat or a bib apron made of nitrile or PVC over a boiler suit or similar
5. A face shield.

AGRICULTURE

17. Q. *In what circumstances should respiratory protective equipment be used when dipping sheep. Give two?*
- A. 1. When cleaning up spillage, in a confined space;
2. When dipping inside a building or other enclosed area;
3. When working with freshly dipped sheep in still air conditions.
18. Q. *Give four general requirements for grain stores?*
- A. They should be:
1. Dry
2. Well ventilated
3. Vermin proof
4. Constructed with reinforced concrete walls.
19. Q. *What IP (Index of Protection) electrical rating is recommended for outdoor floodlights on farms?*
- A. IP55.
20. Q. *Bovine spongiform encephalopathy is more commonly known as what?*
- A. BSE.
21. Q. *Name two ways in which a shotgun can be carried safely when not in use?*
- A. 1. Shotgun unloaded and 'broken' over the arm.
2. Shotgun unloaded and carried on the shoulder, trigger guard uppermost and muzzles sloping upwards and in a safe direction.
22. Q. *Give the name of the poisonous gas that is emitted when slurry is agitated?*
- A. Hydrogen Sulphide.
23. Q. *In relation to cattle crushes, outline four safety considerations that should be taken into account?*
- A. 1. Locking front gate and yoke to hold animal's head firmly.
2. Rump rail, chain or bar to minimise forward and backward movement of the animal.
3. The crush should be secured to the ground or if mobile, to a vehicle.
4. Be positioned to allow adequate space to work safely with good lighting.
5. Gates should be well maintained to reduce risk of strain or back injury.
6. Slip resistant flooring.

CHEMICALS

1. Q. *If you were told a solution was pH 4. Would it be acid or alkaline?*
A. Acid.
2. Q. *If you were told a solution was pH 11. Would it be acid or alkaline?*
A. Alkaline.
3. Q. *If you were told a solution was pH 7. Would it be acid or alkaline?*
A. Neither, it would be Neutral.
4. Q. *What is Paraquat?*
A. It is one of the most lethal poisons known and is commonly used as a weed killer. There is no known antidote and most cases are fatal.
5. Q. *Is Caustic Soda an acid or alkali?*
A. Alkali.
6. Q. *Is Caustic Potash an acid or alkali?*
A. Alkali.
7. Q. *Is Aqua Regia an acid or alkali?*
A. Acid.
8. Q. *Give two reasons why chemical containers should be clearly marked with an approved code?*
A.
 1. To identify the contents.
 2. To indicate which are hazardous.
 3. To signal necessary precautions.
 4. To comply with regulations.
9. Q. *Is the sniffing of chemicals a safe means of identification of them?*
A. Chemicals should never be sniffed as a means of identification, as some chemicals can be harmful even below the threshold of smell.
10. Q. *Give two possible hazards that may be encountered by people using Epoxy Resins?*
A.
 1. Hazardous Fumes.
 2. Flammable Vapors.
 3. Dermatitis.

CHEMICALS

11. Q. *Name two essential things you should do before working on a pipeline?*
- A. 1. Isolate it.
2. Drain it.
3. Clean it.
4. Determine Content.
12. Q. *How would you neutralise spilt acid?*
- A. Use an alkali or plenty of water.
13. Q. *Is Carbon tetrachloride a safe cleaning fluid, qualify your answer?*
- A. No, it is toxic.
14. Q. *To what height should a fixed vessel containing a dangerous material be fenced?*
- A. 3 feet or 0.92 m.
15. Q. *Name two measures that should be provided to immediately limit the effect of an exposure to corrosive liquids?*
- A. 1. Means of drenching persons with cold water.
2. Eye wash bottles.
16. Q. *In a mixture of Petrol and water, which liquid will be on top?*
- A. Petrol.
17. Q. *In a mixture of Alcohol and water, which liquid will be on top?*
- A. Neither, they Mix.
18. Q. *In a mixture of Mercury and water, which liquid will be on top?*
- A. Water.
19. Q. *In safety circles what does P.P.E. mean?*
- A. Personal Protective Equipment.
20. Q. *What does the risk phrase R45 mean?*
- A. May cause cancer.

CHEMICALS

21. Q. *What does the risk phrase R40 mean?*
A. Possible risk of irreversible effects.
22. Q. *What does the risk phrase R61 mean?*
A. May cause harm to the unborn child.
23. Q. *What is the meaning of the term T.W.A. explain your answer?*
A. Time Weighted Average. - It is a measure of the average exposure to a chemical agent for a conventional 8 hour day/ 40 hour week.
24. Q. *What is the term used to express the airborne concentration of substances and conditions under which it is believed that most workers may be repeatedly exposed day after day without adverse effect?*
A. Threshold Limit Value.
25. Q. *Where clothes contaminated with a toxic substance have to be laundered, what should be done before they are sent to the laundry?*
A. They should be detoxified before being set to the laundry.
26. Q. *How would you describe a substance which may on contact with living tissue destroy it, and what sign is used to indicate this substance?*
A. Corrosive - This is depicted by a test tube pouring drops of liquid onto a material with fumes rising from the material.
27. Q. *How would you describe a substance which if ingested or inhaled may be deemed more than harmful and an irritant in terms of harming you, and what sign is used to indicate this substance?*
A. Toxic or Poisonous - This is depicted by Skull and Crossbones.
28. Q. *How would you describe a substance which may on contact with flame, heat, or spark, burst into flame and what sign is used to indicate this substance?*
A. Flammable - This is depicted by tongues of flame.
29. Q. *What four precautions must be taken before allowing repairs to proceed on an unidentified pipeline in a chemical plant?*
A. 1. Identify the line and its contents.
2. Isolate and depressurise the line.
3. Drain and flush the line.

CHEMICALS

4. Gas free the line if necessary.
5. Issue a permit to work to cover the specific repair.

30. Q. Give the meaning of the four following chemical industry terms, Aqueous, Immiscible, Inert, and Emulsion?

- A. Aqueous:- Contains Water.
Immiscible:- Does not mix.
Inert:- Non Reactive.
Emulsion:- Suspension in liquid.

31. Q. Give four possible hazards associated with the use of gas cylinders?

- A. 1. Some gases are stored at high pressure.
2. Leaks of flammable or toxic gases.
3. Gas cylinders exposed to high temperature.
4. Liquid flow from acetylene cylinders.
5. Lack of Cylinder Identification.
6. Handling and transporting heavy cylinders.

32. Q. Give four ways by which poisons may enter the body?

- A. 1. Ingestion.
2. Inhalation.
3. Absorption.
4. Injection.

33. Q. Give four ways by which you may express the concentration of air contaminants?

- A. 1. Parts per Million.
2. Milligrams per Litre.
3. Percentage by Volume.
4. Milligrams per Cubic Mtr.

34. Q. What is the % oxygen in the air?

- A. 21%.

35. Q. What are the safe oxygen limits for entry to a confined space without an air supply?

- A. Not less than 19% but it is important to know what has reduced the oxygen level.

CHEMICALS

36. Q. *Name a common solvent which reacts violently with Bromine?*
A. Acetone.
37. Q. *What would you use to treat a bromine spillage?*
A. 10% Sodium Thiosulphate.
38. Q. *What gas can be formed if acid comes in contact with Sodium Cyanide?*
A. Hydrogen Cyanide.
39. Q. *What is the term used to describe substances which pose a hazard to the environment?*
A. Ecotoxic
40. Q. *Acute toxicity tests give data on the effects of a short-term exposure to a substance. What is the most commonly quoted test of acute toxicity?*
A. LD 50 (Lethal Dose 50) in mg/kg.
41. Q. *What is the word used to describe a chemical reaction which absorbs heat?*
A. Endothermic Reaction.
42. Q. *What is the word used to describe a chemical reaction which gives out heat?*
A. Exothermic Reaction.
43. Q. *The OEL (8Hr) for Phenol is 2 ppm and is followed by a "skin" designation. What does this mean?*
A. A potential exposure route is via skin absorption including mucous membranes and eyes.
44. Q. *There has been much media attention focused on the risks associated with Organophosphorous compounds used in connection with a particular work activity. Can you name the activity?*
A. Sheep Dips used to control parasitic problems in sheep.
45. Q. *Benzene, which is a known human carcinogen, is found in concentrations up to 1% in a material in wide scale daily use. Can you name the material?*
A. Petrol.

CHEMICALS

46. Q. *Many dangerous materials are required by European Community Directives to have a Tactile Warning of Danger on their packaging. What is meant by this and whom does it aid?*
- A. A roughened or embossed area which when touched by a blind or partially sighted person alerts them to the dangerous nature of the material.
47. Q. *What is the difference between hazard and hazardous?*
- A. a) Hazard is the potential to cause harmful effects,
b) Hazardous means potentially harmful.
48. Q. *What is the difference between toxic and toxicity?*
- A. a) Toxic means the ability to cause harmful health effects,
b) Toxicity is a measure of the degree to which something is toxic.
49. Q. *Three of the following gases are flammable, name them?*
1. Acetylene.
 2. Carbon Dioxide.
 3. Carbon Monoxide.
 4. Chlorine.
 5. Chloroethane.
 6. Chlorotetrafluoromethane.
- A. 1, 3 & 5.
50. Q. *Three of the following gases are flammable, name them?*
1. Ethylene.
 2. Phosgene.
 3. Hydrogen Chloride.
 4. Hydrogen Cyanide.
 5. Hydrogen Oxide.
 6. Propylene.
- A. 1, 4 & 6.
51. Q. *Three of the following gases are flammable, name them?*
1. Ammonia.
 2. Butane.
 3. Chlorodifluoromethane.
 4. Cyclopropane.
 5. Dichlorodifluoromethane.
 6. Helium.
- A. 1, 2 & 4.

52. Q. *Name three of the factors on which the severity of a chemical burn depends?*
- A. 1. Corrosiveness of the chemical.
2. Concentration of the chemical.
3. Temperature of the chemical.
4. Duration of contact.
5. Area or extent of the burn.
53. Q. *The term LD 50 is often recorded in data dealing with toxic chemicals. What does it signify?*
- A. Lethal Dose - 50% Kill. i.e. the dose that killed 50% of the test animals.
54. Q. *The term S.T.E.L. is used in relation to the amount of Chemical Exposure of Persons. What does it mean and what periods are involved?*
- A. 1. Short Term Exposure Limit.
2. 15 Minute Periods.
55. Q. *Occupational Exposure Limits (OEL's) are normally expressed in terms of applying to either short or longer times of exposure. What are the two time periods that may be involved?*
- A. 15 Minutes or 8 Hours.
56. Q. *Industrial solvents have many uses. Give the 2 most common hazards to a person you might expect, giving a reason in each case associated with these solvents?*
- A. 1. Fire Risk Solvents can be very volatile and vapours easily attain their flammable range.
2. Damage to Health. They may be Toxic, Narcotic, Irritant, or have other systemic effects.
57. Q. *What is a fume cupboard?*
- A. A special ventilated and enclosed area in which laboratory work with harmful gases and vapours can be carried out safely.
58. Q. *State the correct procedure for diluting concentrated sulphuric acid with water, and explain the hazards should this procedure be reversed?*
- A. 1. Add the acid slowly to the water while stirring continuously.
2. If water is added to the acid an Exothermic (Heat Releasing) Reaction occurs. This can be violent if the water is added rapidly.

CHEMICALS

59. Q. *A cryogenic fluid is one whose vapour must be cooled below room temperature before it can be liquefied by an increase in pressure. Which if any of the following substances are cryogenic fluids?*
1. Hydrogen.
 2. Oxygen.
 3. Nitrogen.
- A. All.
60. Q. *A cryogenic fluid is one whose vapour must be cooled below room temperature before it can be liquefied by an increase in pressure. How many if any, of the following are cryogenic fluids?*
1. Carbon Monoxide.
 2. Carbon Dioxide.
 3. Ozone.
- A. All.
61. Q. *Both Sodium and Phosphorus ignite spontaneously in air. How should they be stored, and can they be stored together?*
- A. Sodium must be stored under paraffin, Phosphorus under water. They should not be stored near each other as confusion would be dangerous - Sodium reacts violently with water.
62. Q. *What do you understand by the following terms (a) Acute Toxicity (b) Chronic Toxicity?*
- A. (a) Acute Toxicity refers to the situation where a substance produces harmful effects quickly i.e. Seconds, Minutes, Hours.
(b) Chronic Toxicity refers to the situation where a substance produces harmful effects in a long period of time i.e. Months or years.
63. Q. *Bromine is regarded as a particularly dangerous chemical in the laboratory. Give three reasons for this assumption?*
- A. 1. High Density.
2. Highly Corrosive.
3. Reacts Violently with many materials.
4. Can be absorbed through the skin.
64. Q. *Name six hazards that could be associated with a leak of liquid from an unidentified overhead pipe line?*
- A. 1. It could be corrosive.

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2. It could give off toxic fumes.
3. It could be flammable.
4. It could scald.
5. It could create a slipping hazard.
6. It may cause an electrical short circuit.
7. It may react chemically with material on the floor.

65. Q. *Name three conditions in which a chemical agent may exist in industry, from which toxic or corrosive or flammable risks may ensue?*

- A. 1. Gases - Gas Cylinders, Compressors etc.
2. Vapours - Solvents, Paint, Dry Cleaning etc.
3. Aerosols - Spraying Liquids etc.
4. Liquids - Spills, or Splashes etc.
5. Dusts - Weighing Powders, Sampling etc.

66. Q. *When Threshold Limit Values are given on a data sheet for a substance, give two important facts that must not be assumed?*

- A. 1. The T.L.V. is not an index of relative Toxicity.
2. The T.L.V. does not indicate the relative hazardous nature of a substance.

67. Q. *What hazards result from a mercury spill, and how should these hazards be dealt with?*

- A. 1. Mercury vapour, which is highly toxic, exists in the air above the spill, hence it is a significant respiratory hazard.
2. The mercury should be collected with appropriate equipment or chemically neutralised.

68. Q. *What is the maximum level of combustible gas permitted in the area where a hot work permit is in operation?*

- A. 1. Not more than 20% of lower flammable limit.
2. Not exceeding relevant Occupational Exposure Limit.

69. Q. *Which if any, of the following six materials can ignite when in contact with water?*

1. Potassium Metal.
2. Sodium Chloride.
3. Sodium Metal.
4. Mercury.
5. Silicon Carbide.
6. Sodium Cyanide.

- A. 1 & 3.

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70. Q. *The Saint Andrew's Cross (X) symbol with a dotted i associated is an indicator of a substance being explicitly less hazardous than a?*
(1) Toxic Substance.
(2) Flammable Substance.
(3) Corrosive Substance.
- A. (3) Corrosive Substance.
71. Q. *What is the full name of the regulations relating to chemicals?*
- A. The "Safety, Health and Welfare at Work (Chemical Agents) Regulations, 2001" (S.I. 619 of 2001).
72. Q. *What does OELV stand for and how is it defined within the 2001 regulations?*
- A. (a) "occupational exposure limit value"
(b) means, unless otherwise specified, the limit of the time-weighted average of the concentration of a chemical agent in the air within the breathing zone of a worker in relation to a specified reference period, as approved by the Authority.
73. Q. *What is the difference between (a) carcinogen, (b) carcinogenic and (c) carcinogenicity?*
- A. (a) A Carcinogen is a substance that can cause cancer.
(b) Carcinogenic means able to cause cancer.
(c) Carcinogenicity is the ability of a substance to cause cancer.
74. Q. *The Chemical Agents Regulations 2001 oblige the employer to determine which hazardous substances are present in the workplace and assess the risk to employees and others, resulting from the presence of these chemical agents. What specific actions must the employer take. Name three?*
- A. 1. Prevent and control exposure to hazardous chemical agents
2. Implement specific protection and prevention measures
3. Make arrangements to deal with accidents, incidents and emergencies
4. Ensure that employees are properly informed, trained and supervised.
75. Q. *List six possible health effects of hazardous substances?*
- A. 1. Sensitisation
2. Asthma
3. Skin irritation or dermatitis
4. Cancer

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5. Poisoning
6. Burns
7. Heritable genetic damage
8. Fertility impairment
9. Harm to the unborn child
10. Loss of consciousness
11. Eye irritation.

76. Q. *There are two different types of occupational sensitisation: skin and respiratory. List three typical symptoms of each?*

- A. Typical symptoms of skin sensitivity are:-
1. swelling,
 2. redness,
 3. itching,
 4. pain,
 5. blistering.

Sensitisation of the respiratory system may result in symptoms similar to a severe asthmatic attack. These symptoms include:-

1. wheezing,
2. difficulty in breathing,
3. chest tightness,
4. coughing,
5. shortness of breath.

77. Q. *What is meant by Health Surveillance as defined in the 2001 Chemical Agents Regulations?*

- A. The assessment of an individual employee to determine the state of health of that individual, as related to exposure to specific chemical agents at work and includes biological monitoring.

78. Q. *What must a user of lead paint in Ireland do?*

- A. The user of the lead paint in Ireland needs to justify that they are using the paint to restore or maintain a work of art or historic building.

79. Q. *The Safety Data Sheet (SDS) is the EC term for the document giving detailed health and safety information about a chemical. Current legislation requires a defined format containing 16 obligatory headings. List eight of the headings?*

- A. 1. Identification of the substance/preparation and of the company/undertaking;
2. Hazards identification;

3. Composition/information on ingredients;
4. First-aid measures;
5. Fire-fighting measures;
6. Accidental release measures;
7. Handling and storage;
8. Exposure controls/personal protection;
9. Physical and chemical properties;
10. Stability and reactivity;
11. Toxicological information;
12. Ecological information;
13. Disposal considerations;
14. Transport information
15. Regulatory information
16. Other information

80. Q. ***In current CPL legislation there are 15 categories of classification of a dangerous preparation. List eight of these categories?***

- A. In accordance with the classification requirements of these Regulations, a dangerous substance or preparation must be classified as one or more of the following:

Physiochemical Effects: -

1. Explosive,
2. Oxidising,
3. Extremely flammable,
4. Highly flammable,
5. Flammable

Toxicological Effects: -

1. Very toxic,
2. Toxic,
3. Harmful,
4. Corrosive,
5. Irritant
6. Sensitising

Specific Effects on Human Health: -

1. Carcinogenic,
2. Mutagenic,
3. Toxic for reproduction

Environmental Effects: -

1. Dangerous for the environment.

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81. Q. List five product categories that have full exemption from the REACH legislation.

- A. 1. Radioactive Substances
- 2. Substances transported or under customs supervision
- 3. Waste as defined in Directive 2006/12/EC
- 4. Substance used exclusively as a non-isolated intermediate
- 5. The carriage of dangerous substances and dangerous substances in dangerous preparations by rail, road, inland waterway, sea or air

82. Q. A cryogenic fluid is one whose vapour must be cooled below room temperature before it can be liquefied by an increase in pressure. Give 4 Hazards which face cryogenic fluid users?

- A. 1. Frost Bite.
- 2. Respiratory Ailments.
- 3. Chemical Burns.
- 4. Low temperature embrittlement of some metals.
- 5. Some react violently when combined with other cf's
- 6. Some react violently when combined with their surroundings.

83. Q. Give eight safety recommendations which should be applied to a chemical store?

- A. 1. The chemicals should be stored by categories ie Corrosive, Toxic, Reactive, Flammable etc.
- 2. Do not have shelves above shoulder height.
- 3. Separate all reactives and non-compatibles.
- 4. Provide an adequate ventilation system.
- 5. Fire fighting equipment should be designed specifically for the store and it's contents
- 6. The store structure should be fire resistant.
- 7. The contents should be identified and listed externally.
- 8. Safety showers and eye wash facilities must be provided.
- 9. Electric services to flame proof standard

1. **Q. *Will any type of barrier cream do?***
A. No - It must be the correct one for the job.
2. **Q. *Why use a barrier cream?***
A. It protects the hands, and helps to prevent dermatitis.
3. **Q. *What are the best colours for walls and ceilings?***
A. Light colours; they raise the spirits and improve the lighting.
4. **Q. *Does the colour of the floor matter, qualify your answer?***
A. Yes, light floors improve the brightness.
5. **Q. *What is a barrier cream?***
A. It is a cream, which is spread upon the hands and forearms to protect the skin from the effects of the work, and to enable the hands to be easily cleaned.
6. **Q. *Name two generic types of barrier cream?***
A.
 1. Water resistant.
 2. Oil resistant.
 3. Film forming.
7. **Q. *Give 4 essential attributes of an industrial skin cleaner?***
A.
 1. Easy to use and dispense.
 2. Easy to remove.
 3. Medically safe.
 4. Uses no abrasives or solvents.
 5. Cleans thoroughly
 6. Works quickly.
8. **Q. *Can you name the two terms used to define whether occupational exposure to chemicals is either short and severe or the effects accumulating over a period of time?***
A.
 1. Acute.
 2. Chronic.

9. Q. *In terms of the effects of chemicals in the workplace what do the letters O.E.L. and M.E.L. stand for?*
- A. 1. Occupational Exposure Limit.
2. Maximum Exposure Limit.
10. Q. *The hazard symbol shaped like an X and assigned by virtue of the current Regulations, is indicative of what two distinct chemical hazard types?*
- A. 1. Harmful.
2. Irritant.
11. Q. *In the context of injury arising from certain workplace activities the acronyms W.R.U.L.D. (Pronounced world) and R.S.I. are often used, what do they stand for?*
- A. 1. Work Related Upper Limb Disorders.
2. Repetitive Strain Injury.
12. Q. *Under section 31 of the Factories Act 1955, what must a woman or young person not clean. Give two points?*
- A. 1. A prime mover or transmission machine while it is in motion.
2. Any part of any machine if there is a risk of injury from any moving part of that machine or any adjacent machine.
13. Q. *What are the hazards associated with the use of methanol as an Industrial Solvent?*
- A. 1. It is Highly Flammable.
2. It is Toxic.
3. It is absorbed through the skin.
14. Q. *Occupational Hygiene is recognised as the discipline of involving five key elements to be applied in the working environment with the objective of protecting worker health and well-being and safeguarding the community at large. Can you name three of the elements?*
- A. 1. Anticipating health hazards
2. Recognising health hazards
3. Evaluating health hazards
4. Preventing health hazards
5. Controlling health hazards

15. Q. *Current legislation and guidance lays down under the provisions dealing with sanitary facilities the number of water closets and urinals required for existing workplaces depending on numbers employed. Can you indicate (a) The number of water closets for a female workforce between 31 to 45 and (b) Water closets and Urinals for a male workforce of 31 to 45?*
- A. (a) 4.
(b) 2 of each.
16. Q. *Current legislation and guidance lays down under the provisions dealing with sanitary facilities the number of water closets and urinals required for existing workplaces depending on numbers employed. Can you indicate the number of (a) water closets and (b) urinals required for a male workforce of 16 to 30?*
- A. (a) 2.
(b) 1.
17. Q. *Current legislation and guidance lays down under the provisions dealing with sanitary facilities the number of of wash basins required for existing workplaces depending on numbers employed. Can you indicate the number of wash basins required for a female workforce (a) of between 46 to 60 persons and (b) 50 persons If the work leads to heavy contamination of hands or forearms?*
- A. (a) 3.
(b) 5.
18. Q. *Current legislation and guidance lays down under the provisions dealing with sanitary facilities the number of of wash basins required for existing workplaces depending on numbers employed. Can you indicate the number of wash basins required for a male workforce with no urinals provided (a) of between 61 to 75 persons and (b) 90 persons If the work leads to heavy contamination of hands or forearms ?*
- A. (a) 6.
(b) 7.
19. Q. *Current legislation and guidance lays down under the provisions dealing with sanitary facilities that, in general, the washing facilities environment should meet five criteria. Can you name three of the criteria?*
- A. 1. adequate lighting
2. sufficiently ventilated
3. adequately protected from the weather
4. appropriately maintained
5. kept clean.

20. Q. *Current legislation and guidance lays down under the provisions dealing with sanitary facilities that adequate and suitable showers for employees if required by the nature of the work or for health reasons related thereto should meet four criteria. Can you name three of them ?*
- A. 1. separate shower rooms or separate use of shower rooms for men and women,
 2. shower rooms which are sufficiently large to permit each employee to wash without hindrance in satisfactory conditions of hygiene, and
 3. showers which are equipped with hot and cold running water,
 4. easy access between the rooms housing showers or washbasins where they are separate from the changing rooms.
21. Q. *Current legislation and guidance lays down under the provisions dealing with sanitary facilities that WC compartments should meet five criteria. Can you name three of them ?*
- A. 1. WC compartment doors should be equipped with locks that can be easily operated by the user and readily released from outside in case of an emergency.
 2. WC compartments and urinals should not be visible from outside the toilets.
 3. WC compartments should be supplied with toilet paper and hooks so that clothing does not have to be placed on the floor.
 4. Female toilet compartments should be supplied with a suitable sanitary disposal unit.
 5. If WC bowl fittings become loose they need to be secured to prevent them falling over.
22. Q. *Current legislation and guidance lays down, under the provisions dealing with sanitary facilities, that changing rooms should, when provided, meet five particular criteria. Can you name three of these?*
- A. 1. Be readily accessible from workrooms.
 2. Be provided in conjunction with any shower or bathing accommodation, and have easy communication with it.
 3. Have easy communication with the clothing accommodation.
 4. Contain adequate seating.
 5. Be conveniently situated for the use of employees using facilities for taking meals.
23. Q. *Current legislation and guidance under the provisions dealing with sanitary facilities gives two examples of the type of work exposures where showers should be provided for the use of employees. Can you outline the 2 examples?*
- A. 1. exposure to heavy physical work.
 2. exposure to offensive or harmful substances where ongoing skin and hair contamination must be prevented.

COMPRESSED AIR & GASES

1. Q. *When working with pressurised cylinders, what conditions of associated storage have to be met?*
A. The cylinders must be upright and secured to prevent a fall.
2. Q. *The two hoses on an oxygen-acetylene welding/cutting set are coloured differently. Give the two colours and which is which?*
A. Blue: - Oxygen.
Red: - Acetylene.
3. Q. *Is oxygen detectable by smell?*
A. No - It is an odourless gas.
4. Q. *Is oxygen lighter or heavier than air?*
A. Slightly Heavier.
5. Q. *Is nitrogen lighter or heavier than air?*
A. Slightly Lighter.
6. Q. *Is oxygen an inflammable gas?*
A. No - But it vigorously supports combustion.
7. Q. *What is the main constituent of Natural Gas?*
A. Methane.
8. Q. *What do the letters L.P.G. marked on a cylinder stand for?*
A. Liquefied Petroleum Gas.
9. Q. *What are the two main constituents of L.P.G. e.g. Calor Gas, Flogas, Bluegas etc.?*
A. Propane and Butane.
10. Q. *Is L.P.G. heavier or lighter than air?*
A. Heavier than air.
11. Q. *Is petrol vapour heavier or lighter than air?*
A. Heavier than air.

12. Q. *Is chlorine gas heavier or lighter than air?*
A. Heavier than air.
13. Q. *Is acetylene gas heavier or lighter than air?*
A. Lighter than air.
14. Q. *Exposure to what toxic gas is the principal hazard in the motor repair industry?*
A. Exposure to carbon monoxide from exhaust gases.
15. Q. *Name one correct way to test for a gas leak?*
A. 1. By brushing with soapy water over suspected point of leak.
2. Use an appropriate sensitive gas detector.
16. Q. *Is it acceptable to store all gas cylinders in the one store?*
A. No - Cylinders containing flammable or explosive gases should never be stored in the same store as oxygen.
17. Q. *The normal pressure for compressed air lines in factories is in the region of 80/100 psi. Give two dangers of using a line of this pressure for cleaning clothing and machinery?*
A. 1. The air at this pressure may be forced through the skin, and if it enters the blood stream the result could be fatal.
2. The air at this pressure will blow around small objects that can cause accidents.
18. Q. *What is important about the pressure of compressed air supplied to a pressure vessel?*
A. It should not exceed the S.W.P. of the vessel.
19. Q. *What two things compressed air should not be used for?*
A. 1. Cleaning clothes.
2. Horse play.
20. Q. *Is it a good idea to use compressed air for the removal of swarf or dust from a machine, qualify your answer?*
A. No, particles are blown about to the danger of others.

21. Q. *How is the air pressure of a system reduced?*
- A. By a reducing valve.
22. Q. *Name 4 essential safety requirements which should be associated with an air receiver?*
- A. 1. The Safe Working Pressure must be clearly marked on it.
2. A suitable safety valve must be fitted.
3. An accurate pressure gauge must be fitted.
4. There should be an inspection manhole.
5. There should be an identification mark or number on it.
6. There should be a drain appliance fitted.
23. Q. *What is the correct procedure for joining a gas hose to a cylinder regulator?*
- A. The hose should be connected to an approved hose connector, and all hose/connector joints should be completed by the fitting of hose clips of the jubilee or other approved type to ensure a gas tight joint.
24. Q. *What four essential precautions are necessary when handling or storing oxygen cylinders?*
- A. 1. Store upright.
2. Keep oil away from valve.
3. Do not expose to heat.
4. Do not drop.
25. Q. *Which of the following three gases is lighter than air?*
1. *Ethane?*
2. *Acetylene?*
3. *Propane?*
- A. (2) Acetylene.
26. Q. *Which of the following flammable gases is lighter than air?*
1. *Methane?*
2. *Butane?*
- A. (1) Methane.
27. Q. *Name four common non-flammable gases?*
- A. Nitrogen, Oxygen, Argon, Nitrous Oxide, Carbon Dioxide, B.C.F., Helium.

28. Q. *How is (a) Carbon Monoxide formed and (b) what is it?*
- A. (a) Carbon monoxide is created by the incomplete combustion of any carbon-based fuel,
 (b) It is a toxic, colorless, odorless, tasteless and nonirritant gas that is slightly less dense than air and is very soluble in water.
29. Q. *What four safety precautions should be taken to control carbon monoxide exposure in a workplace?*
- A. 1. Keep rooms properly ventilated when gas appliances are operating.
 2. Keep gas appliances properly maintained and serviced at regular intervals.
 3. Portable petrol/diesel engines should never be run indoors in a confined space.
 4. Where forklift trucks or similar are used indoors in warehouses, etc. advice should be sought from the regulatory authorities or suppliers.
30. Q. *What two sectors or occupations are most likely to be affected by fatal carbon monoxide poisoning?*
- A. The occupations most affected in terms of fatal accidents are:-
- Security workers and night watchmen.
 - Those working in poorly ventilated atmospheres where gas is used for heating.
31. Q. *What are the similar and dissimilar distinguishing features between threads of combustible and non-combustible gas cylinders?*
- A. 1. The cylinders have the same screwed thread size.
 2. Right-hand threads are on oxygen and noncombustible gas cylinders.
 3. Left-hand threads are on acetylene and other combustible gas cylinders.
32. Q. *What gas would you expect to find in each of the three cylinders colour coded by BOC as follows:-*
(a) Black,
(b) Maroon/Chocolate,
(c) Red with white dot?
- A. (a) Oxygen.
 (b) Acetylene.
 (c) Hydrogen.

33. Q. *What gas would you expect to find in each of the three cylinders colour coded by BOC as follows:-*
(a) Blue,
(b) Grey with Black Neck,
(c) Grey?
- A. (a) Argon.
(b) Nitrogen.
(c) Air.
34. Q. *Which if any of the following substances are normally refrigerated to store as Liquefied Gases?*
1. Ethylene Oxide.
2. Isobutane.
3. Ethane.
4. Oxygen.
- A. 3 & 4 - Ethane & Oxygen.
35. Q. *Which if any of the following substances are normally refrigerated to store as Liquefied Gases?*
1. Ammonia.
2. Propylene.
3. Nitrogen.
4. Methane.
- A. 3 & 4 - Nitrogen & Methane.
36. Q. *What emergency steps should you take if an acetylene cylinder becomes hot due to a flashback or accidental heating. Give three?*
- A. 1. Shut the valve if possible.
2. Detach the regulator or other fittings.
3. Take cylinder out of doors and immerse in water or drench with water until cylinder is cool.
4. Contact the supplier for further advice.
37. Q. *How can you tell the difference between an Argon+CO₂ (argoshield gas) cylinder and an Argon cylinder?*
- A. There is a green band on an argoshield cylinder.

CONSTRUCTION

1. **Q. *How would you remove material and waste from a height?***
 - A. Lower properly using a hand line, or empty down a chute.

2. **Q. *What 2 precautions are necessary in an area where work may take place on a fragile roof?***
 - A. 1. Warning notices must be displayed warning personnel of the fragile roof condition.
 2. Crawling boards or ladders must be used when working on fragile roofs.

3. **Q. *What precautions are necessary in an area where work may take place on a sloping roof?***
 - A. Crawling boards or ladders must be used when working on a sloping roof.

4. **Q. *If people are working in deep trenches, what precautions are necessary?***
 - A. Adequate shoring is necessary or the sides should be sloped to prevent a collapse of the soil.

5. **Q. *What must be done before you commence digging any excavation on a work site?***
 - A. Ensure the excavation work will not break or damage any underground services such as Drains, Mains, Power Lines, etc.

6. **Q. *How often should an excavation where shoring is necessary be inspected by a competent person?***
 - A. At least once on every day during which persons are employed therein.

7. **Q. *Can trestles be used for scaffolds?***
 - A. Yes - Provided they are in good condition and suitable for the job.

8. **Q. *What is the greatest menace on a building site?***
 - A. Poor Housekeeping.

9. **Q. *In relation to scaffolding what are toe-boards for?***
 - A. To prevent articles falling off the scaffold platform, or persons slipping or rolling out under the guard rail.

CONSTRUCTION

10. Q. *Who should handle explosives?*
A. A competent suitably trained person.
11. Q. *What type of protection is a must for everyone on a construction site?*
A. A Safety Helmet
12. Q. *Why wear hard hats (Safety Helmets) on building sites?*
A. As a protection against falling objects, and striking the head on structures.
13. Q. *Name two precautions which must be taken to safe guard workers when working on heights if scaffolding is impossible to use?*
A. 1. Use of Safety Nets.
2. Use of Safety Belts.
14. Q. *What is the minimum age at which a person can obtain a CSCS Card so that he may drive a dumper on a building site?*
A. 18 years.
15. Q. *Must sanitary accommodation be provided by Civil Engineering Contractors for persons employed?*
A. Yes.
16. Q. *Give two actions that must be taken in relation to an excavation or opening in a floor?*
A. 1. Fenced off.
2. Warning notice.
3. Lit after dark.
17. Q. *Give two instances when should scaffold be inspected?*
A. 1. Before use.
2. After exposure to weather conditions which may affect it.
18. Q. *Under the construction regulations, what height should guard rails be on scaffolds?*
A. Not greater than 1.2m and not less than 0.95m.

CONSTRUCTION

19. Q. *When a vehicle is tipping material over a bank what precautions are necessary?*
- A. Scotchies or barriers should be provided behind the back wheels.
20. Q. *What is necessary when there is a risk of falling material?*
- A. Adequate preventative measures to protect persons.
21. Q. *Name the two most obvious safeguards for persons when working over water?*
- A. 1. They should wear life jackets.
2. A boat should be kept near by.
22. Q. *What precautions must be taken with the generation of steam into a workplace?*
- A. Vision must not be obscured.
Prevent burns from hot steam.
23. Q. *What precautions should be taken to safeguard workers at a height where scaffolding is not practicable?*
- A. Use safety sheets or nets, and safety belts.
24. Q. *A chain saw should not be carried while it is running, unless what device is fitted and applied?*
- A. A chain brake.
25. Q. *When is it permitted to use a basket attachment on a forklift?*
- A. It can only be used for non-routine, exceptional work.
26. Q. *What is defined as a sloping roof?*
- A. One where the pitch is more than 10 degrees.
27. Q. *How often must shoring be inspected?*
- A. At least once per day, preferably every shift.
28. Q. *When should excavations be checked?*
- A. Periodically, especially after rainfalls, periods of dryness, frost and inrushes of water and every shift.

CONSTRUCTION

29. Q. *When deep trenches are dug, what must be done to prevent collapse?*
- A. The sides must either be sloped at least 45 degrees or be sturdily timbered or shored or use a trench box.
30. Q. *What is the correct way to enter a trench if there is a trench box in use?*
- A. There should be a fixed vertical ladder fitted within the trench box and when coming back to ground level the ladder should extend one metre above the stepping off point.
31. Q. *What qualifications are needed to be qualified to inspect scaffolding?*
- A. The CSCS card in Basic Scaffolding.
32. Q. *When should a scaffold be inspected by a qualified person, Give four occasions?*
- A. 1. On each occasion before being taken into use.
2. After being substantially added to.
3. After exposure to severe weather conditions.
4. After being struck by any equipment.
33. Q. *Can a construction worker remove a section of scaffold if it is in the way of the job?*
- A. No - removal of any section of the scaffold may the strength and stability of the entire scaffold. Removal of any section can only be carried out by a competent scaffolder and only under a Permit to work system. To do it under any other circumstances is a criminal offence.
34. Q. *What key ground characteristics should scaffold erectors look for before erecting the scaffold?*
- A. They should look out for: basements, drains or patches of soft ground which could give way when loads are placed upon them.
35. Q. *When hiring a Mobile Scaffold from a hire company what four key features should be checked?*
- A. It should have:
- wheels which can be locked
 - brakes that work
 - outriggers for stability
 - an internal fixed ladder for safe access.

CONSTRUCTION

36. Q. *What is the minimum acceptable height of a toe board?*
A. 6" or 150 mm.
37. Q. *If you are stacking materials on a scaffold, what must you first of all establish?*
A. The Safe Working Load of the scaffold.
38. Q. *A second, lower, guard-rail is required if the gap between the guard-rail and the top of the toe-board on a scaffold exceeds what distance?*
A. 800 mm (32").
39. Q. *What is the maximum depth of a trench that may be dug in loose ground or sand before timbering or shuttering is required?*
A. 1.25 metres (4' 2").
40. Q. *What is the maximum operating voltage for temporary lighting in buildings under construction?*
A. 110 Volts.
41. Q. *What two general First Aid arrangements should be made on a construction site?*
A. 1. A well maintained First Aid Box.
2. Have somebody trained in First Aid.
42. Q. *On construction sites the location of underground cables must be marked at frequent intervals. What two pieces of information should be shown on these markers?*
A. 1. The depth.
2. The voltage.
43. Q. *Apart from a toe-board and a hand rail what other part of a scaffold will prevent serious accidents from falls?*
A. The use of a mid rail.
44. Q. *If drinking water is not available from the mains what kind of water may be used?*
A. Certified drinking water.

CONSTRUCTION

45. Q. *What fire precaution should be taken around petrol powered machines?*
- A. The avoidance of smoking or naked flames.
46. Q. *Personnel must not normally enter the working radius of an excavating machine. What two precautions should be taken before entering the area when essential?*
- A. 1. The driver must be made aware of your entry.
2. The machine must come to rest.
47. Q. *On backhoe loaders (JCB's) what position should the front loader be in when using the backhoe and why should it be in this position?*
- A. 1. It should be lowered.
2. It gives greater stability.
48. Q. *What safety control device should be attached to a pedestrian vibrating roller, and why should it be attached?*
- A. 1. A dead mans handle.
2. In case the operator trips or falls.
49. Q. *Why should a noise assessment be carried out on a construction site. Give two reasons?*
- A. 1. To identify all workers at possible risk.
2. So that appropriate corrective action can be taken.
50. Q. *What is Safe Pass?*
- A. Safe Pass is a one-day safety awareness programme aimed at all who work on Construction sites. It is a legal requirement under Regulation 25 of Construction Regulations 2006.
51. Q. *Who needs to do Safe Pass awareness training?*
- A. The Safe Pass Programme is aimed at all construction site personnel, including new entrants, to ensure that they have a basic awareness of health and safety.
52. Q. *List two groups who are exempt from Safe Pass on a construction site?*
- A. • site office staff,
• visiting architects, engineers & inspectors
• those installing, commissioning equipment, who normally live and work outside the state and who have not spent more than 20 days working on the project within the last year.

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53. Q. *Who needs Construction Skills Certification Scheme CSCS?*
- A. All construction workers undertaking the tasks listed in the Schedule 4 of Construction Regulations, 2006 must have received training approved by FAS under the Construction Skills Certification Scheme (CSCS) and be in possession of CSCS registration cards.
54. Q. *Is there a need for a Safety Representative on a construction site?*
- A. A Safety Representative is required where more than 20 persons are employed on a site at any one time.
55. Q. *A client is required to appoint a Project Supervisor to oversee and co-ordinate safety and health matters during two distinct stages of a project: What are they?*
- A. 1. the design process and
2. the construction stage.
56. Q. *When should the Safety & Health Plan be reviewed?*
- A. The plan should be reviewed as work progresses and updated as necessary.
57. Q. *What are the three essential considerations in relation to the height of a mobile scaffold?*
- A. 1. It should not exceed three times the smaller width at the base.
2. It should not exceed 12 metres.
3. If over 9.5 metres it should be tied to the structure.
58. Q. *What is the name given to the type of dam used while building a foundation under water?*
- A. A Cofferdam.
59. Q. *Give another name for a cofferdam, and how does it keep the water out?*
- A. 1. Caisson Dam.
2. By air pressure.
60. Q. *Name three types of asbestos often mentioned in legislation, and state in increasing order of risk the names of these materials?*
- A. 1. Crocidolite (Blue). Amosite (Brown). Chrysotile (White)
2. White - Brown - Blue.

CONSTRUCTION

61. Q. Give three of the four aims of the FAS Safe Pass Programme?

- A. 1. Raise the standard of safety awareness in the construction industry
2. Ensure that all site personnel undergo basic health and safety awareness training
3. Maintain a register of personnel who have received health and safety training.
4. To provide all participants with a FAS Safe Pass registration card, indicating that the holder has attended a formal course in health and safety awareness.

62. Q. What are four of the benefits to employers of the FAS Safe Pass Programme?

- A.
 - Improved Safety Culture.
 - Reduction in accidents on site.
 - Reduction in lost time due to accidents.
 - Improve employee morale.
 - Identification of personnel with recognised training.

63. Q. What are four of the benefits to employees of the FAS Safe Pass Programme?

- A.
 - Improved Safety and Health Awareness.
 - Recognition of Safety Training.
 - Personal Development.
 - Provision of a Safe Pass Registration card.
 - Improved employment prospects.

64. Q. List three of the duties of a Safety Officer on a construction site?

- A. 1. Advise the contractor on how to comply with relevant statutory provisions
2. Exercise general supervision of the compliance with relevant statutory provisions
3. Promote safe conduct at work generally
4. Co-operate with any Safety Advisor appointed under statutory provisions in relation to safety, health and welfare at work on the project.

65. Q. List six of the duties, required by current Regulation, of employees and other persons at work on a construction site?

- A. 1. To comply with these Regulations
2. To co-operate in carrying out the requirements of these Regulations

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3. To report any defect in the plant and equipment to which these Regulations apply.
4. Comply with all rules applicable to the person in the safety and health plan
5. Make proper use of any safety helmet, harness or other personal protective equipment provided for the person's safety and health
6. Make proper use of any work equipment supplied
7. Show relevant Safe Pass and relevant CSCS cards when requested to do so.

66. Q. *What is*

(a) a Safety File?

(b) Who prepares it?

(c) What is its purpose? Give at least one.

- A. (a) The Safety File is a record of information,
(b) Prepared by the project supervisor design process and construction stage.
(c) (i) To focus on safety and health issues.
(ii) To alert those who are responsible of the significant safety and health risks that will need to be addressed during subsequent maintenance, repair or other construction work.

67. Q. *List three items of information which should be included in the Safety File?*

- A. 1. Construction drawings, specifications and bills of quantities, used and produced throughout the construction process
2. The general design criteria
3. Details of the equipment and maintenance facilities within the structure
4. Maintenance procedures and requirements for the structure
5. Manuals, certificates, produced by specialist contractors and suppliers typically in respect of lifts, electrical and mechanical installations and window cleaning
6. Details of the location and nature of utilities and services, including emergency and firefighting systems.

68. Q. *When and why is a Safety and Health Plan required? Give three reasons.*

- A. A safety and health plan is required for any site where:-
- the work concerned involves a Particular Risk; or
 - the work is planned to last longer than 30 working days or
 - the volume of work is scheduled to exceed 500 person days.

CONSTRUCTION

69. Q. *The Safe System of Work Plan covers House Building and Ground Works. What is the a Safe System of Work Plan and give two items that it achieves ?*
- A. 1. The SSWP identifies the major hazards associated with construction work activities.
2. It helps to ensure that appropriate controls are in place before work commences.
3. It communicates through the use of pictograms so that everyone on site, can understand what they need to do.
70. Q. *What are the three parts of the Safe System of Work Plan?*
- A. 1. Planning the activity
2. Identifying the hazards and controls
3. Sign Off.
71. Q. *Should a new Safety System of Work Plan form be filled in for each new activity?*
- A. A new SSWP must be completed when
- a new hazard is identified
 - the task changes
 - the environment changes.
72. Q. *Do I still need to prepare a Safety Statement if I have a Safe System of Work Plan, elaborate with four points?*
- A. Yes.
1. The Safe System of Work Plan complements the Safety Statement
 2. It does not replace the requirements for a Safety Statement.
 3. The SSWP can ensure that the safety statement applies to the individual site or job.
 4. The SSWP can be used as a final check to ensure that the identified controls for a specific construction work activity are in place.
73. Q. *There are 6 precautions that can be taken to prevent falls from Mobile Elevated Work Platforms. List all 6 of them?*
- A. 1. A guard rail and mid rail round the edge of the basket to stop the user falling
2. a slip-resistant floor
3. toe-boards round the edge of the platform
4. deadman controls clearly marked to show their method of operation
5. use of stability devices, e.g. outriggers, provided to make the machine stable, which are interlocked such that the MEWP will not operate unless they are fully extended and
6. locking-out controls (other than those in the basket) to prevent inadvertent operation.

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74. Q. Give eight items to check on when carrying out a scaffold inspection?

- A. 1. The alignment and support of the standards.
2. The straightness of the ledgers.
3. The adequacy of the bracing.
4. Security of any ties to a building.
5. The tightness of lashings or couplers.
6. The platforms for support, security, and soundness.
7. The guard rails and the boards.
8. The security of ladders.

75. Q. Give the eight principal causes of accidents with cartridge operated tools?

- A. 1. Careless handling of the tool
2. Firing projectiles into unsuitable materials.
3. Ricochets of the projectiles from the surface of the material.
4. Use of gun with unauthorised people in the area.
5. Being used adjacent to gas pipes or electrical wiring.
6. Firing projectiles into brittle or weak materials.
7. Firing projectiles into hardened steel or stone.
8. Using the incorrect strength of cartridge for the job.

76. Q. There are thirteen training modules incorporated within the Safe Pass Programme. List eight of them?

- A.
 - The Reasons for Promoting Safety
 - Health and Safety At Work Legislation
 - Accident Reporting & Emergency Procedure
 - Accident Prevention
 - Health and Hygiene
 - Manual Handling
 - Working at Heights
 - Working with Electricity, Underground and Overhead Services.
 - Use of Hand Held Equipment and Tools
 - Personal Protective Equipment
 - Safe Use of Vehicles
 - Noise and Vibrations
 - Excavations and Confined Spaces

77. Q. List 8 of 20 specific tasks listed in Schedule 4 of Construction Regulations, 2006 which need CSCS Registration Cards?

- A.
 - Scaffolding – basic
 - Scaffolding – advanced
 - Mobile tower scaffold
 - Tower crane operation

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- Self-erecting tower crane operation
- Slings/Signaling
- Telescopic Handler operation
- Tractor/Dozer operations
- Mobile Crane operation
- Crawler Crane operation
- Articulated Dumper operation
- Site Dumper operation
- 180° Excavator operation
- Mini Digger operation
- 360° Excavator operation
- Roof and Wall Cladding/Sheeting
- Built up roof felting
- Signing, lighting and guarding on roads
- Locating underground services
- Shotfiring

78. Q. *Overhead power lines pose a significant risk for any machinery operating below them. What precautions, insofar as reasonably practicable, need to be taken when vehicles are operating or passing under Overhead Power Lines?*

- A. (a) the supply to the overhead line is isolated,
(b) if such isolation is not practicable, the overhead line is diverted,
(c) if such isolation or diversion is not practicable, provide adequate
(i) barriers,
(ii) protective measures,
(iii) warnings, or
(iv) other suitable means,

79. Q. *What are the General Principles of Prevention as listed in Schedule 3 of the 2005 Act. List eight?*

- A. • the avoidance of risks,
• the evaluation of unavoidable risks
• the combating of risks at source
• the adaptation of work to the individual
• the adaptation to the place of work to technical progress. ;
• the replacement of dangerous articles, substances or systems of work by non-dangerous or less dangerous articles, substances or systems of work
• the giving of priority to collective protective measures over individual protective measures.
• the development of an adequate prevention policy in relation to safety, health and welfare at work;
• the giving of appropriate training and instruction to employees.

80. Q. *What are the particular risks, which should be included in the Safety & Health Plan. Give eight?*

- A. Particular risks include work which puts workers at risk of:
- falling from a height
 - burial under earth falls or
 - engulfment in swampland
 - where work puts persons at work at risk from:
 - chemical or biological substances constituting a particular danger or involving a statutory requirement for health monitoring
 - work with ionising radiation
 - work near high voltage power lines
 - work exposing persons to the risk of drowning
 - work on wells, underground earthworks and tunnels
 - work carried out by divers using a system of air supply
 - work carried out in a cession with a compressed air atmosphere
 - work involving the use of explosives
 - work involving assembly or dismantling of heavy prefabricated components

ELECTRICAL

1. Q. *Why use fuses in an electrical circuit?*

A. To protect circuits from overloads.

2. Q. *Give two ways of identifying fuses in relation to electrical load - (Capacity)?*

- A. 1. By Colour.
2. By Size.
3. Capacity on Fuse.

3. Q. *What is a circuit breaker?*

A. A device used as a means of starting or stopping an electrical current flow.

4. Q. *Name two safety protection requirements that should be provided for mains voltage soldering irons?*

- A. 1. They should be earthed or double insulated.
2. They should be protected by a RCD (residual current device)/E.L.C.B.

5. Q. *When should screens be arranged around a welding job?*

A. When there is a danger to others working nearby.

6. Q. *Give two ways to make an electrically driven machine safe to do maintenance work on?*

- A. 1. Lock out the switch with own lock.
2. Remove the fuses.

7. Q. *Why is earthing of equipment necessary?*

A. To ensure protective action results if the metal work becomes live due to a fault.

8. Q. *Why not use water on an electrical fire?*

A. Water is an electrical conductor and could cause a short circuit.

9. Q. *Give two reasons for keeping power cables off the floor?*

- A. 1. Damage to Cables.
2. A Tripping Hazard.

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10. Q. *Give two methods of protecting yourself from risk of shock to earth which do not involve electrical trip devices?*
- A. 1. Use rubber mats.
2. Wear rubber boots.
11. Q. *Give two hazards other than personal shock and equipment failure, which may result from faulty electrical equipment?*
- A. 1. Fires.
2. Explosion.
12. Q. *What precautions must you take when testing live equipment?*
- A. Use only a proper insulated test set.
13. Q. *How is a double insulated appliance identified?*
- A. A double insulated appliance is marked with two squares one inside the other.
14. Q. *Name two prime areas in an electrically powered tool, which should be examined for possible damage before the tool is used?*
- A. 1. The Plug.
2. The Power Cable.
3. Entry point of cable to appliance.
15. Q. *Must all portable electric power tools be earthed?*
- A. Yes, unless they are of the approved double insulated type.
16. Q. *Give two reasons why a portable electric power tool should not be connected to a light socket?*
- A. 1. It will not be earthed.
2. It may cause an overload.
17. Q. *What causes Static Electricity?*
- A. Movement and friction of materials which may be solids, liquids or gases.
18. Q. *Static Electricity is produced when electrons are displaced in the surface of a material. Give two common causes of a build up of a static electricity charge?*
- A. 1. The flow of solids.
2. The flow of liquids.

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3. The flow of gas through an orifice.
4. The wearing of synthetic fibre clothing.

19. Q. *What is the basic thing that should be done if there is a risk of Static Electricity builds up?*

A. Earth the relevant equipment.

20. Q. *What is essential to ensure low voltage electrical appliances are properly used?*

A. They must be fitted with discriminating plugs to prevent them being plugged in to mains.

21. Q. *What is the recommended maximum voltage for portable hand-lamps, used in damp or confined spaces?*

A. They must not be more than 25 Volts AC or 50 Volts DC.

22. Q. *If a fault develops in a portable electric tool, what action should you take?*

A. Cease to use it, and report it to your superior.

23. Q. *What is the danger of metal lamp holders?*

A. They may become live with the risk of electrocution.

24. Q. *When taking an electrical cable across a gang-way, what precautions would you take?*

A. Carry it safely overhead, or if on the floor, protect it with a suitable cover.

25. Q. *A person has received an electric shock and is still in contact with the live circuit. What should you do?*

A. Switch off the current if possible, remove from contact using a nonconductor, and apply artificial respiration.

26. Q. *What type of electrical equipment is necessary where there is a risk of fire or explosion from fumes?*

A. Equipment suitably classified for the exposure.

27. Q. *Can one get burns from electricity?*

A. Yes.

28. Q. *What are the special requirements about hand tools used on electrical repairs?*
- A. They should be insulated.
29. Q. *The process of interconnecting all exposed metalwork to eliminate voltage differences (potential) between parts of the metalwork is called what?*
- A. Bonding
30. Q. *Name four factors that increase the seriousness of electric shock?*
- A. 1. Voltage.
2. Moisture on the skin.
3. Damp surroundings.
4. A.C or D.C. Current.
5. Health of individual.
6. Magnitude of current.
31. Q. *Name four hazards of working with electric power?*
- A. 1. Electric Shock.
2. Fire.
3. Explosion.
4. Arc Eye.
32. Q. *In Health and Safety Legislation, how is high voltage defined?*
- A. Voltage exceeding:-
1. 1,000 volts A. C.
2. 1,500 volts D. C.
33. Q. *Give four safety checks recommended before connecting an appliance to a mains supply?*
- A. 1. Check appliance name plate voltage and frequency is matched to supply potential.
2. Ensure socket and tool are switched off before plugging in.
3. Check cable and plug are in good condition.
4. Ensure that the cable is clear of the work.
34. Q. *What are the four main factors which govern the seriousness of an electric shock?*
- A. 1. The amount of current flow.
2. The length of time of the current flow.
3. The personal sensitivity to shock current, due to dampness, or earth contact.
4. The general health of the person.

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35. Q. *Name four requirements of a battery charging room?*
- A. 1. It must be free of smoking or naked flames.
2. It must have adequate ventilation.
3. It must have adequate suitable fire extinguishers.
4. It must have suitably classified electrical fittings.
36. Q. *Give four design requirements of a portable lead lamp?*
- A. 1. Use a proper insulated holder.
2. Use a reliable switch.
3. Have a substantial enclosure around the bulb.
4. Ensure that the voltage meets regulation requirements.
37. Q. *Name four main requirements of an Electric Isolation Request Permit?*
- A. 1. To nominate the precise plant to be isolated.
2. To nominate a date and time for the isolation.
3. To nominate the type of isolation required i.e. Fuses or Cables etc.
4. To get an acknowledgement when the isolation is complete.
5. To De-isolate and restore power to the equipment when safe to do so.
38. Q. *Where a high voltage transformer or switchgear outside a building is to be protected by fencing what minimum height of fence is required?*
- A. 2.4 metres (8 feet approx.)
39. Q. *Which Portable Electric Tools need not meet the requirements that the metal work be efficiently earthed?*
- A. "All Insulated" and "Double Insulated" Tools to approved standards.
40. Q. *What is the advantage of earthing the centre point of a portable 110 Volt Transformer?*
- A. It limits the voltage to earth to 55 Volts, thus decreasing the electric shock potential below the known fatal level.
41. Q. *If one buys an electric drill with a kite mark and a double square mark on it, What do these marks mean?*
- A. The Double Square means it is Double Insulated and the Kite Mark means it is to a British Standard.

42. Q. *Which of the following types of conduit are suitable for installation in extreme cold environments (a) Flexible Conduit, (b) Aluminium Conduit, (c) Plastic Conduit, (d) Steel Conduit?*
- A. a, b, and d. Plastic Conduit may become brittle and crack.
43. Q. *When an Earth Leakage Circuit Breaker is combined with an Excess Current Operated Circuit Breaker, what protection is given to the circuit?*
- A. The circuit is protected against Earth Faults and Overloads.
44. Q. *Name four significant requirements for voltage detectors used for testing whether a circuit is live?*
- A. 1. They should be properly designed.
2. They should have well shrouded probes.
3. They should have adequately insulated handles.
4. They should have current limiting resistors.
45. Q. *What is flameproof electrical equipment?*
- A. Electrical equipment which can be used with safety in a flammable atmosphere without the risk of causing a fire.
46. Q. *Name 4 steps in protecting a heavy underground electric cable?*
- A. 1. Lay the cable in plastic conduit.
2. Pack around the conduit with sand.
3. Cover the sand over the cable with flagstones.
4. Post ample warning notices along route of cable.
47. Q. *You may find two colour coding schemes in use when you go to wire a single-phase 13-amp plug. What are the colour codes for Live, Neutral, and Earth in these two schemes?*
- A. Live:- Brown (New); Red (Old)
Neutral:- Blue (New); Black. (Old)
Earth:- Green/Yellow (New); Green (Old)
48. Q. *Current electricity legislation and guidance requires that all electrical equipment and installations shall at all times meet eight requirements so as to prevent danger. Name four of the eight?*
- A. 1. Properly designed
2. Properly constructed.
3. Properly installed.

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4. Properly maintained.
5. Properly protected.
6. Properly used.
7. Protected from ingress of moisture or of particles
8. Protected from foreseeable impacts.

49. Q. *In the current electricity legislation and guidance the word danger means the risk of personal injury from five electricity related events. Name four of the five?*

- A.
 1. Electric shock.
 2. Electric burn.
 3. Electrical explosion or arcing.
 4. Fire or explosion caused by electricity use.
 5. Mechanical movement of electrical driven equipment.

50. Q. *Give four dangers associated with lead acid accumulators?*

- A.
 1. Very high currents may be produced.
 2. Hydrogen Gas is produced while being recharged.
 3. Danger of acid spills.
 4. They tend to be very heavy and awkward to handle.

51. Q. *Poor lighting results in 4 well identified undesirable consequences. Can you name them?*

- A.
 1. Fatigue.
 2. Errors.
 3. Stress.
 4. Accidents.

52. Q. *The maintenance of a well-designed lighting system at its peak efficiency can be dependent on four essential maintenance tasks. Can you name them?*

- A.
 1. Replacement of spent bulbs.
 2. Correct bulb replacement.
 3. Regular cleaning of lamps.
 4. Regular cleaning of windows.

53. Q. *The degree of illumination required to enable any specific task to be performed with relative ease and safety depends upon five factors. Name four?*

- A.
 1. Size of object.
 2. Speed of movement.
 3. Duration of task.
 4. Brightness contrasts.
 5. Colour.

ELECTRICAL

54. Q. *What is the name of the effect that makes a rotating shaft appear stationary under certain lighting conditions?*
- A. Stroboscopic Effect.
55. Q. *The electricity regulations refer to an electro-mechanical device capable of making, carrying and breaking currents under normal and abnormal circuit conditions such as those of a short circuit, what is this device called?*
- A. A circuit breaker.
56. Q. *If a piece of electrical apparatus is designed and constructed such that, even under fault conditions, the electrical energy within the circuits is less than the minimum ignition energy of the flammable atmosphere in which it is to operate. How would it be rated / classified?*
- A. Intrinsically Safe.
57. Q. *What is the purpose of Insulation Resistance Tests?*
- A. To ensure that phase and neutral conductors are not 'leaking' to earth.
58. Q. *What is the purpose of Continuity Resistance Tests?*
- A. To ensure that where fitted ring cables (such as socket circuits) are intact.
59. Q. *What is the purpose of Earth Fault Loop Impedance (EFLI) tests?*
- A. They are carried out to verify that earthing characteristics are satisfactory.
60. Q. *What is the purpose of checking Tripping times?*
- A. To see if the tripping time of residual current devices (RCD) are within acceptable time limits.
61. Q. *What is the purpose of protective devices in electrical circuits?*
- A. To protect against overload
To protect against faults.
62. Q. *Name two types of fire extinguisher that can be used on an electrical fire as described in I.S. 291: 2002?*
- A. 1. Dry Powder
2. CO2
3. FM 200.

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63. Q. *I.S. 291: 2002 list two types of extinguisher that should not be used in electrical fire! What are these?*
- A. 1. Water
2. Foam
64. Q. *Within the context of electrical safety what is the meaning of the term "isolation"?*
- A. "Isolation" means the disconnection and separation of electrical equipment from every source of electrical energy in such a way that the disconnection and separation is secure.
65. Q. *Give the three ways in which electricity may cause death?*
- A. 1. Direct action (shock) on heart and respiratory organs.
2. Burns.
3. By the involuntary action of the body as a result of shock. e.g. Fibrillation of the Heart.
66. Q. *Flameproof equipment is designed for a number of specific gas and vapour groupings namely Group 1, 2A, 2B, 2C. This is because certain gases and vapours have properties requiring design to higher standard. Which group covers natural gas being the lowest standard requirement?*
- A. Group 1.
67. Q. *Name three types of electrical equipment which may be used in a Zone 1 classification?*
- A. 1. Intrinsically Safe Equipment.
2. Flame Proof Equipment.
3. Pressurised Equipment.
4. Powder Filled Equipment.
5. Increased Safety Equipment.
6. Encapsulated Equipment.
68. Q. *What type of electrical equipment is required in Zone O classification?*
- A. Intrinsically Safe Equipment.
69. Q. *What three steps should be taken after the operation of a Residual Current Device (R.C.D.)?*
- A. 1. Check the appliance connected to the circuit breaker for fault or defect.
2. Correct the fault or defect.
3. Re-set the circuit breaker in the positive mode.

70. Q. *Current legislation and guidance dealing with electrical safety requires that every circuit in excess of 125 volts supplying or intended to supply portable or transportable apparatus must be protected by what?*
- A. A mains Residual Current Device (RCD) to cut off power if leakage current to earth should exceed 30 milli amps.
71. Q. *It is a legal requirement that a circuit supplying a socket outlet must be protected by a residual current device having a tripping current not exceeding 30 milliamperes (mA). How does a residual current device operate?*
- A. Leakage from the electrical circuit will cause an imbalance in the current flowing from the phase conductor and returning to the neutral conductor, if this exceeds a pre-determined value usually 30 mA the power will be disconnected by the device.
72. Q. *What is a multiple lock out clasp used for, and what does the multiple lockout clasp ensure?*
- A. 1. To allow each worker to fix his own lock on an isolated item of equipment
2. The isolated item of equipment can not be made live until all workers have withdrawn and removed the locks.
73. Q. *To aid the choice of electrical equipment for use in areas where flammable gas or vapours may be present such areas are classified according to the likelihood of the areas having flammable atmospheres. (a) How are such areas referred to, and (b) what is the highest risk area?*
- A. (a) Zone 0, Zone 1, Zone 2.
(b) Zone 0
74. Q. *To aid the choice of electrical equipment for use in areas where flammable dusts may be present such areas are classified according to the likelihood of the areas having flammable atmospheres. How are such areas referred to and what is the highest risk area of these?*
- A. (a) Zone 20, Zone 21, Zone 22.
(b) Zone 20.

75. Q. *Electrical equipment for use in flammable atmospheres has to reflect its suitability for use in relation to the specific gas and vapour groupings which are designated as Group 1, 2A, 2B, 2C. This is because certain gases and vapours have properties requiring different design standards. To what group does (a) Petrol Vapour and (b) Gas encountered in coal mines belong?*
- A. (a) Group 2A.
(b) Group 1.
76. Q. *How is "high voltage" defined in Current legislation and guidance dealing with electrical safety ?*
- A. "High voltage" means any voltage exceeding -
(a) 1000 volts alternating current,
(b) 1500 volts direct current.
77. Q. *The National Rules for Electrical Installations are published from time to time. Who produces these rules?*
- A. The Electro-Technical Council of Ireland (ETCI).
78. Q. *The "National Rules for Electrical Installations" frequently refer to IP Ratings for electrical equipment and fittings. What does IP stand for, and what do the two numbers that follow it refer to?*
- A. IP Stands for Index of Protection and is followed by two numerals i.e. IP44. The first numeral indicates the level of protection against physical contact with live parts of the fitting and the degree that the equipment is protected against solid foreign bodies intruding into an enclosure. The second numeral indicates the level of protection against moisture penetration.
79. Q. *(a) What is bonding? and (b) Why is it important?"*
- A. (a) Bonding is the process of interconnecting all exposed metalwork to eliminate voltage differences (potential) between parts of the metalwork.
(b) It reduces the risk of electric shock and the risk of static electricity build up and is particularly important in livestock buildings, milking parlours and in bathrooms, etc.
80. Q. *The intention of periodic testing of the fixed wiring is to ensure that the system is safe for use and has not suffered damage or severe deterioration. List three tests that should be periodically undertaken on an electrical system?*

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- A. 1. Insulation resistance tests
- 2. Continuity resistance tests
- 3. Earth fault loop impedance (EFLI) tests
- 4. Tripping times of residual current devices (RCD).

81. Q. *The risk of damage and the resultant injury from portable electrical equipment is higher than that of fixed appliances due to its portable nature. Before the first use during a working day, staff should make a quick visual check of the equipment they are to use or is sited in their area. List six types of situations that should be reported?*

- A. 1. Damage to the case of the equipment
- 2. Damage to the cabling
- 3. Damage to the plug
- 4. Evidence of wires pulling out of the case or plug
- 5. Blackening of the socket
- 6. Evidence of a smell associated with hot burning plastic, rubber etc.

82. Q. *Name six types of protective devices used in an electrical circuit?*

- A. 1. Fuse
- 2. Miniature Circuit breaker (MCB)
- 3. Residual Current Device (RCD)
- 4. Residual Current Circuit breakers (RCCB)
- 5. Residual Current Circuit breakers with Overload protection (RCBO)
- 6. Magnetic Hydraulic Circuit breakers
- 7. Thermal Circuit breakers
- 8. Thermal Magnetic Circuit breakers

83. Q. *What is the difference between an overload current and a fault current?*

- A. An overload current is the application of a current greater than the design current resulting in the disruption of the circuit protective device.
Fault current is one generated by the rapid discharge of energy to earth through a mechanical fault on a system resulting in a substantial rise and rapid disconnection by the circuit protective device.

84. Q. *What two conditions can occur to the heart with electric shock, and what action should be taken for each condition?*

- A. 1. Cardiac arrest, (the heart stops beating and blood is no longer circulated). Treatment - immediate CPR.
- 2. Ventricular fibrillation, (the heart's electrical activity becomes disordered) Treatment - use defibrillator followed by CPR.

85. Q. *Name Eight Hazards associated with Manual Metal Arc Welding - (Electrical Welding)?*

- A.
1. Electric Shock.
 2. Burns.
 3. Ultra-Violet Radiation.
 4. Fire.
 5. Fumes.
 6. Arc - Eye.
 7. Slag Chipping in Eyes.
 8. Chemical Cleaning of Weld.
 9. Trailing Cables.

EMPLOYMENT

1. **Q. *Under the Factories Act 1955 when is a person considered to be an adult?***
A. At 18 years of age.
2. **Q. *In the main can women be employed in processes connected with lead manufacture?***
A. No.
3. **Q. *What category of workers are most exposed to accidents?***
A. The young and inexperienced.
4. **Q. *What two things must you do before asking somebody under 18 years of age to work at a dangerous machine?***
A. 1. Instruct them in the dangers and precautions to be taken.
2. They must have sufficient training or be under supervision.
5. **Q. *What is the normal definition of a child in current safety and health legislation?***
A. A person resident in the State who is under 16 years of age.
6. **Q. *What is the normal definition of a young person in current safety and health legislation?***
A. A person who has reached 16 years of age but is less than 18 years of age.
7. **Q. *Can the parents be held liable for the wrongful employment of a young person?***
A. Yes, if they are aware of it.

1. Q. *Give another name for the 'zone of convenient reach'?*
A. The reach envelope
2. Q. *Tensing the muscles for extended, uninterrupted periods of time can be described as what?*
A. Static posture or effort.
3. Q. *Define humidity?*
A. It is a measurement or index of the amount of water vapour in the air.
4. Q. *In Human Resources (HR) terms - what is an "EAP"?*
A. Employee Assistance Programme.
5. Q. *What do the acronyms 'WRULD' and 'RSI' stand for?*
A. Work related upper limb disorder
Repetitive strain injury"
6. Q. *What part of the body is affected by Carpal Tunnel Syndrome?*
A. The hand.
7. Q. *What is "Anthropometrics"?*
A. It is the branch of ergonomics that deals with the physical size and shape of people.
8. Q. *There are four factors which, when combined, can give rise to RSI. Name them?*
A. Force
High repetition
Awkward posture
Insufficient rest.
9. Q. *Give four possible reactions of an individual to stress?*
A. Physical reaction
Psychological reaction
Emotional reaction
Behavioural reaction.

10. Q. *In relation to Motivational Theories, who designed the "Hierarchy of Needs"?*
- A. Abraham Maslow.
11. Q. *For standing work, what is the recommended work surface height for men involved in precision work?*
- A. 109cm - 110cm.
12. Q. *Give four environmental factors which should be considered in an ergonomic assessment?*
- A. Noise
Humidity
Vibration
Light
Temperature
Ventilation.
13. Q. *In relation to VDUs, what is the optimum lighting level that should be maintained at the workstation?*
- A. 300 to 500 lux.
14. Q. *Name six physical characteristics of the individual that should be considered in ergonomics?*
- A. Body size
Body shape
Fitness
Strength
Posture
The senses
Stresses and strains on muscles, joints nerves.
15. Q. *The word "Ergonomics" is derived from the Greek words 'ergon' and 'nomos'. What do these words mean?*
- A. Ergon = work
Nomos = law.

16. Q. *What are the main elements in the definition of bullying in the workplace according to current legislation and guidance*

- A. 1. Repeated inappropriate behaviour,
2. Direct or indirect,
3. Verbal, physical or otherwise,
4. One or more persons against another or others,
5. Occurring at the place of work and/or in the course of employment,
6. Could be reasonably regarded as undermining the individual's right to dignity at work.

17. Q. *What is the role of the HSA with regard to Bullying at work?*

- A. The role of the Authority is
(a) A policy one.
(b) Assisting in terms of policy development and preventive systems.

1. **Q. Give two sources of fire?**
 - A. 1. Sparks
 2. Flames.
 3. Hot Surfaces.
 4. Radiant Heat.

2. **Q. Name the elements that comprise the triangle of fire?**
 - A. Fuel, Heat, and Oxygen.

3. **Q. Name two means by which heat may be transmitted and result in a spread of fire?**
 - A. Radiation, Conduction, and Convection.

4. **Q. A flammable vapour or gas will only ignite or explode in air if the Air:Fuel ratio is in the correct proportions. How are these limits normally expressed?**
 - A. 1. L.E.L. - Lower Explosive Limit.
 2. U.E.L. - Upper Explosive Limit.

5. **Q. Give two requirements regarding fire exits?**
 - A. 1. Clearly Marked.
 2. Open Outwards or Slide.
 3. Be Kept Clear.
 4. Be Always Available.

6. **Q. Name two types of security fastenings acceptable on fire exit doors?**
 - A. 1. Panic Bolts.
 2. Panic Latches.
 3. Alarm Locks.
 4. Glass Bolts.
 5. Ordinary Ball Catches.

7. **Q. What type of extinguisher is best suited to free flowing liquid fires?**
 - A. Dry Powder.

8. **Q. How do dry powder extinguishers extinguish fires?**
 - A. By stopping chain flame reaction and smothering.

9. Q. *How do water type extinguishers extinguish fires?*
A. By cooling the burning material to a point where it will not burn.
10. Q. *Name two fire extinguishing agents that are recommended for use on electrical fires?*
A. 1. CO₂
2. Dry Powder.
3. Sand.
11. Q. *What should you do with overalls that have become soaked with flammable solvent, what two actions do you take?*
A. 1. Remove at once.
2. Place in metal bin.
12. Q. *Why are oily or paint covered rags dangerous?*
A. They may be liable to spontaneous combustion.
13. Q. *What action do you take if a persons clothes catch fire?*
A. Roll them in a blanket or use a non-asphyxiant extinguisher.
14. Q. *How would you dispose of flammable waste in a workroom?*
A. Put it in a closed metal bin and empty regularly.
15. Q. *How is an automatic sprinkler system triggered, qualify your answer?*
A. By the heat from a fire bursting a quartzoid glass bulb thus releasing the contained water pressure towards the fire area.
16. Q. *Name the two types of smoke detectors?*
A. 1. Ionisation Detectors
2. Optical Detectors.
17. Q. *Should lifts be used as a means of escape in case of fire if they are working?*
A. No - Lifts should never be used as a means of escape in case of fire as they could fail at any time due to fire causing power failure.
18. Q. *Why do air convector heaters become a fire hazard if obstructed?*
A. If the airflow is obstructed the heater is liable to over heat.

19. Q. *When gas cylinders are involved in a fire, what can be done to prevent an explosion?*
- A. Remove them, or cool them down with water.
20. Q. *Name four types of fire extinguishing agent?*
- A. Water, Foam, CO₂, Dry Powder.
21. Q. *If you discover a fire what action should you take?*
- A. Raise the alarm,
Get everyone out,
Attack the fire.
22. Q. *What type of extinguisher would you use on a petrol fire?*
- A. Dry Powder or Foam.
23. Q. *What colour should a fire exit sign be?*
- A. White symbols on a green background.
24. Q. *What two colours are generally accepted for danger and non-danger?*
- A. Red for danger and Green for non-danger.
25. Q. *What two essential pieces of knowledge are necessary as regards escape in case of fire?*
- A. 1. The sound of the alarm.
2. The means of escape and route to follow.
26. Q. *Why do (a) water and (b) CO₂ put out fires?*
- A. (a) By cooling down.
(b) By excluding oxygen.
27. Q. *How does foam extinguish a liquid fire?*
- A. It floats on the surface and excludes oxygen.
28. Q. *How does a simple self-closing fire door operate?*
- A. It is held open by a fusible link, when this fuses due to heat, a weight or spring closes the door.

29. Q. *If you smell burning and cannot trace the source of the smell, what do you do?*
- A. Sound the alarm.
30. Q. *Name two types of fire alarm systems?*
- A. 1. Manual.
2. Automatic.
31. Q. *If you use a battery operated fire alarm in your home, what checks should you carry out periodically?*
- A. Press the test button weekly to check that the alarm is operational.
32. Q. *Why are chimney fires dangerous?*
- A. They can structurally weaken the flue liner and chimney block causing cracks to form which may allow sparks enter the house causing a fire elsewhere. Soot may also fall down causing carpet fires.
33. Q. *Why should mirrors not be placed over fireplaces?*
- A. People especially children may be attracted to come too close to the fire where clothing may catch fire.
34. Q. *What is the advantage of light water over an ordinary water extinguisher?*
- A. It allows greater penetration or wetting of the fire area.
35. Q. *Beside the generation of smoke and heat give two other products of combustion?*
- A. 1. Carbon Dioxide.
2. Water.
3. Carbon Monoxide.
36. Q. *Which one of the following is not a compatible fire extinguishing agent with dry powder?*
1. *Water Spray.*
2. *Inert Gas.*
3. *Foam.*
- A. (3) Foam.

37. Q. *A high expansion foam has which one of the following expansion ratios, 1. 10, 2. 50, 3. 100-150, 4. 500*
- A. (3) 100-150.
38. Q. *Fire blankets may be used to extinguish clothes on fire. Give two other applications in which fire blankets are effective?*
- A. 1. As shields when approaching or passing a fire.
2. For smothering small fires.
39. Q. *How can burning liquid be prevented from accumulating under a pressurised storage vessel such as a large LPG tank?*
- A. The ground should be sloped away from the tank to a suitable containment area.
40. Q. *Why is it necessary to use a special foam if fighting an alcohol fire?*
- A. Alcohol is miscible with water, so a special Alcohol Resistant Foam has to be used.
41. Q. *What may happen and why if large quantities of powdered coal are stored in high stacks under dry conditions?*
- A. Spontaneous combustion may occur due to the self-heating of the large surface area exposed to the oxygen in the air.
42. Q. *Why are fire alarm push buttons normally housed behind glass in push button units?*
- A. To protect against unintentional operation.
43. Q. *What do dry sprinkler systems contain?*
- A. Compressed Air or Nitrogen.
44. Q. *What is the key purpose of automatic roof ventilators?*
- A. To disperse heat and smoke in a fire situation.
45. Q. *What does the following describe. It is a self-supporting wall that prevents fire spreading from one building to another or from one section of a building to another?*
- A. A Fire Wall.

46. Q. *To what does The Irish Standard I.S. 291: 2002 relate?*
- A. The Use, Siting, Inspection and Maintenance of Portable Fire Extinguishers.
47. Q. *What is The Irish Standard. I.S. 3218: 1989 relate?*
- A. Code of Practice for Fire Detection and Alarms Systems for Buildings – System design, Installation & servicing.
48. Q. *What is The Irish Standard. I.S. 3217: 1989?*
- A. Code of Practice for Emergency Lighting.
49. Q. *What are employers required to do by Section 8 of the 2005 Act for accidents and emergencies?*
- A. Prepare and revise, as appropriate, adequate plans and procedures to be followed and measures to be taken in the case of an emergency or serious and imminent danger.
50. Q. *Name four types of fire extinguisher?*
- A. Water
Foam
Dry powder
Sand
Carbon Dioxide.
51. Q. *Name four risks that the hazard of fire presents to those involved either during or subsequent to the event?*
- A. Burns
Smoke inhalation
Evacuation injuries
Stress
Death.
52. Q. *In addition to a fire alarm system name four other items that might be provided to improve safety during emergencies?*
- A. Emergency lighting
Fire extinguishers
Hose reels
Fixed extinguishers
Sprinklers
Fire blankets.

53. Q. *What four actions should you take if you discover a fire ?*
- A. 1. Raise the alarm.
2. Get every one out.
3. Call fire brigade.
4. Fight fire if safe to do so.
54. Q. *Name the four important conditions for the maintenance of fire exits?*
- A. 1. They should always be available when people are on the premises.
2. They should always be kept clear.
3. They should open outwards or slide.
4. They should be clearly marked.
55. Q. *In what four ways can spontaneous combustion occur?*
- A. 1. Oxidation.
2. Chemical interaction.
3. Bacterial activity.
4. Friction.
56. Q. *You have called out the civil fire brigade to a fire at your plant. Name four vital pieces of information you should give to the officer in-charge on his arrival?*
- A. 1. Detail of the fire location.
2. Details of the fire mains on site.
3. Detail of the material involved in the fire.
4. Details of persons trapped or missing.
5. Details of any special hazards involved.
57. Q. *You are about to use the phone to call out the emergency services. Name four vital pieces of information you should give them?*
- A. 1. Who you are.
2. Where you are
3. What your problem is.
4. What assistance you require.
5. Details of any special hazards involved.
58. Q. *Name two hazards which result from fires involving polyurethane foam, as used in many furnishings?*
- A. 1. Very rapid propagation of flame.
2. Dense, very toxic fumes and gases.

59. Q. *How would you treat a person whose clothing was on fire?*
- A. 1. Lay the casualty down to prevent spread of flames.
2. Put out flames with water, sand or by wrapping in coat, blanket or rug.
Do not roll the casualty along the ground as this can cause burning of unharmed areas.
60. Q. *What precautions should be taken when electrical apparatus has to be used in a hazardous area?*
- A. It should meet the classification required according to the hazard involved.
61. Q. *Is there a hazard in allowing oil to gather in a compressed air receiver and why?*
- A. Yes, an explosion is a very real possibility.
62. Q. *Name four ways that fire may start in a material?*
- A. 1. By the addition of a flame or spark.
2. By the addition of heat.
3. By chemical action.
4. By spontaneous combustion.
63. Q. *What is ignition temperature?*
- A. When the temperature is raised sufficiently to support combustion.
64. Q. *Why is it not safe to allow oxygen from a cylinder to flow into a workroom in which the air has become stale in order to freshen it?*
- A. It is dangerous to ventilate a room with pure oxygen, because it significantly increases the flammability of most materials.
65. Q. *What is the dry powder material usually used in dry powder fire extinguishers?*
- A. Sodium Bi-Carbonate.
66. Q. *With a dry powder fire extinguisher labelled A.B.C. What does A.B.C. mean?*
- A. That this extinguisher is recommended for Class A., Class B., and Class C. fires.

67. Q. *What type of extinguisher is suitable for Class A fires. Give four?*
- A. 1. Water.
2. Sand in bucket.
3. Dry Powder.
4. CO₂.
5. Foam.
68. Q. *What type of extinguisher is suitable for Class B fires. Give four?*
- A. 1. Foam.
2. Dry Powder.
3. Vaporising Liquids
4. CO₂.
69. Q. *What type of extinguisher is suitable for Class C fires. Give two?*
- A. 1. Dry Powder.
2. CO₂.
3. Vaporising Liquids.
70. Q. *What is the difference between "stored pressure" and "gas cartridge" type extinguishers, and what pressure is in either?*
- A. 1. The body of the extinguisher contains stored pressure charged to approximately 150 p.s.i.g. when ready for service.
2. In the gas cartridge type extinguisher the propellant is stored in a separate cartridge at approximately 600 p.s.i.g. which pressurises the extinguisher.
71. Q. *Give two advantages of CO₂ extinguishers?*
- A. 1. Non - Conductors.
2. Non Damaging.
72. Q. *What are the three ingredients for an explosion?*
- A. 1. Ignition source.
2. Explosive substance.
3. Oxygen.
73. Q. *What type of fire extinguisher would you use on a Sodium fire?*
- A. Class D extinguisher for burning metals.

74. Q. *If cut off from means of escape from a fire in a building, what three things should you do and what should you not do?*
- A. 1. Return to the safest point, location, or room.
2. Close all doors behind you.
3. Go to an external opening and raise the alarm.
4. Do not attempt to jump except under instructions from the fire brigade.
75. Q. *Why can CO₂ be dangerous to the operator of a CO₂ fire extinguisher?*
- A. It is an Asphyxiant.
76. Q. *What are the four main products of the combustion of a building?*
- A. 1. Heat.
2. Light.
3. Smoke.
4. Vapours and gases.
77. Q. *What gas does the plastic PVC produce when burning?*
- A. Hydrogen Chloride (HCL, Hydrochloric Acid Gas).
78. Q. *Wet and Dry Automatic Sprinkler Systems are examples of Fixed Fire Fighting Installations. Name two other Fixed Fire Fighting Installations?*
- A. 1. Carbon Dioxide System, especially for electrical risks.
2. Inert Gas Systems, especially for computer installations.
79. Q. *Name four flammable metals?*
- A. 1. Lithium.
2. Magnesium.
3. Sodium.
4. Potassium.
80. Q. *What material is a Fire Wall normally constructed of and what would be its normal fire resistance?*
- A. Bricks or Concrete, with a fire resistance of from three to six hours.
81. Q. *If a Flash Point of a liquid is reported as 10 degrees Centigrade followed by the designation C.C. What does C.C. indicate in this instance?*
- A. That the test has been carried out using a Closed Cup Flash Point test apparatus.

82. Q. *Where should information on the inspection and maintenance of fire safety equipment, as required by many Local Authorities, be recorded?*
- A. Fire safety register.
83. Q. *When planning fire evacuation procedures consideration need be given under two distinct headings, what are they?*
- A. Action to be taken on discovering a fire
Action to be taken on hearing the alarm.
84. Q. *To be effective, a route provided for escape must commence at the point of exit from a room or area and continue to the point of discharge into the open air. What else should they be?*
- A. a) Clearly defined
b) Adequately lit
c) Clearly identifiable along its total length
d) Free from any obstructions that may impede free movement.
85. Q. *What is meant by upper and lower limits of flammability?*
- A. The highest and lowest percentage concentration of flammable vapour with air which will ignite.
86. Q. *What is meant by Class A, Class B and Class C fires, and name an extinguishing agent for each class of fire?*
- A. Class A Fires involving solid materials, extinguishing agent Water.
Class B Fires involving flammable or combustible liquids, extinguishing agent dry powder or foam.
Class C Fires involving energized electrical equipment, extinguishing agent dry powder or carbon dioxide.
87. Q. *What two essential fire precautions apply to hoist and lift shafts inside a building?*
- A. 1. They must be completely enclosed except at the top with fire resistant materials.
2. The shaft must be easily vented at the top.
88. Q. *Name six types of flame arresters?*
- A. 1. Wire Gauze.
2. Perforated Sheet.
3. Perforated Block.

4. Crimped Ribbon.
5. Perforated Plate
6. Packed Bed.
7. Parallel Plate.
8. Sintered.
9. Hydraulic.
10. Ceramic Pebbles or Rings.

89. Q. *Name six aspects of training which should be stressed to personnel expected to use fire extinguishers in the event of a fire?*

- A.
 1. The method of sounding the fire alarm.
 2. Recognition of extinguisher contents.
 3. The types of fires and the extinguisher best suited.
 4. The hazard of using an inappropriate extinguisher.
 5. The importance of self preservation.
 6. Practical use of each type of extinguisher.

90. Q. *Describe the six steps in the use of a fire blanket on a flammable liquid fire?*

- A.
 1. Open the blanket fully.
 2. Drape it in front of you to protect you from radiant heat.
 3. Protect the hands by turning the top edge over them
 4. Hold the blanket so as to protect your face.
 5. Advance on the fire and drape the blanket over it in one quick motion.
 6. Leave the blanket in position until the fire and its container have cooled.

91. Q. *Name three of the relevant characteristics of flammable substances that are considered in designating an explosive atmosphere?*

- A.
 1. The density relevant to air.
 2. The flash point.
 3. The ignition temperature.
 4. The boiling point.
 5. The upper and lower explosive limits.

92. Q. *B.L.E.V.E. is short for Boiling Liquid Expanding Vapour Explosion. Where may this condition occur, and what is the chief danger resulting from this occurrence?*

- A.
 1. Whenever a cylinder containing flammable gas/vapour under pressure is exposed to great heat.
 2. If the cylinder bursts a fire ball explosion is created.

93. Q. *Name five areas of consideration in designing explosion control into plant systems?*
- A. 1. Segregation of plant.
2. Explosion relief by means of vents.
3. Flame arresters.
4. High speed isolation valves.
5. Explosion suppression.
94. Q. *Name three steps that may be taken to restrict the spread and effects of an explosion where such a liability to explosion exists?*
- A. 1. The plant must be so constructed so as to withstand the pressure produced.
2. Provision of chokes, baffles, vents.
3. Explosion suppression.
4. Flame arresters.
5. Provision of other equally effective means to restrict the spread and effects of the explosion.
95. Q. *In a fire situation, what precautions should you take if you are opening the door? Give one.*
- A. (i) Guard against pressure in the closed room due to expansion of hot gases,
(ii) Use the door or associated wall as a shield against the emerging flames and smoke.
96. Q. *Describe the breathing apparatus conditions known as "Demand" and "Positive pressure"?*
- A. Demand Condition: In this condition the demand valve meters air into the face piece when the wearer breathes in.
Positive Pressure: In this condition the face piece is under slight positive pressure at all times. Hence fume and smoke is prevented from entering the face piece, unlike demand which could allow fume and smoke into the face piece.
97. Q. *What is the average consumption of air in a compressed air breathing apparatus?*
- A. 40 Litres per minute.
98. Q. *As distinct from a fire what are the three ingredients for an explosion?*
- A. 1. Ignition source.
2. Explosive substance.
3. Oxygen.

99. Q. *What substances should the valves of gas cylinders be kept free of and why?*
- A. Oil and Grease, as they can react chemically causing an explosion.
100. Q. *Name three of the principal functions of a automatic sprinkler system with regard to fire fighting?*
- A. 1. To detect the fire.
2. To sound the alarm.
3. To attack the fire.
4. To prevent the spread.
101. Q. *What is important when selecting the fan motors for a fume or gas extraction unit and why?*
- A. To determine if the gas or fumes are flammable, and that the fan motor is properly electrically classified for use with same.
102. Q. *When fire fighting by use of an extinguisher, give three important considerations for the extinguisher operator?*
- A. 1. Fire extinguisher contents are very limited, they empty in less than a minute.
2. Have a second and third extinguisher provided while the first is being discharged.
3. Avoid getting trapped by the fire.
103. Q. *In a fire situation, if you are approaching a closed door, how do you determine if there is a fire beyond the door? Give three.*
- A. (i) Look for smoke percolating between the door and the frame,
(ii) Look for signs of blistering paint work,
(iii) Feel the door and door handle to see if they are hot.
104. Q. *Name 6 precautions necessary in a plant where explosive or flammable dust may accumulate?*
- A. 1. Enclose Plant.
2. Remove Dust.
3. Exclude sources of ignition/static.
4. Provision of chokes and/or baffles.
5. Provision of explosion vents.
6. Provision of explosion suppression.
7. Provision of an inert gas blanket.
8. Wet down the dust.

105. Q. What constitutes an explosive atmosphere?

- A. A mixture of a flammable gas, vapour, dust or mist with air that can be exploded by arcs, sparks, or materials at high temperature.

106. Q. What is meant by the term Ignition Temperature of a gas or vapour?

- A. It is the minimum temperature under specified conditions at which a substance will ignite in the presence of air without an external spark or flame.

107. Q. What is meant by the term Flash Point of a liquid?

- A. It is the minimum temperature at which the liquid will give off a vapour which forms an explosive mixture with air near its surface.

108. Q. What standard of fire prevention are needed for chemical plants and highly flammable areas? Name three.

- A. 1. The buildings should be of high fire resisting materials.
2. There should be double doors and sprinklers in appropriate areas.
3. There should be frequent removal of floor sweepings and dust.
4. There should be adequate fire fighting equipment.
5. The workers should be trained in fire procedures and fire fighting.

109. Q. Give three disadvantages of dry powder extinguishers?

- A. 1. The powder tends to pack over a period.
2. They may absorb moisture from the atmosphere.
3. They have limited cooling properties.

110. Q. Give six causes of overheating generated by mechanical friction?

- A. 1. Insufficient lubrication.
2. Insufficient cooling.
3. Worn bearings.
4. Malalignment of shafts.
5. Slipping belts or pulleys.
6. Overloading of machines.
7. Insufficient clearance between moving parts.
8. Vibration, build up of material around moving parts.

111. Q. Industrial dusts have two hazards, health and explosion risk. Name six techniques used to avoid or control dust hazards?

- A. 1. Eliminate: Stop the dust at source.
2. Substitute: Use alternative material.

3. Segregate or enclose: Keep separate.
4. Wet Methods: Keep dust down with water.
5. Ventilation: Exhaust or negative pressure.
6. Filtration & Disposal: Capture and remove.

112. Q. Name six common causes for the ignition of dust as a result of factory processes?

- A.
1. Welding or Burning.
 2. Sparks from Electrical Equipment.
 3. Hot Surfaces of Machinery.
 4. Static Electricity.
 5. Spontaneous Combustion.
 6. Naked Flames.
 7. Non Enforcement of No Smoking Rules.

113. Q. What three essential precautions are necessary with elevators and screw conveyors, where there is danger of explosive dust concentrations?

- A.
1. All inspection doors should be kept shut.
 2. Correctly sized explosion reliefs should be fitted where necessary.
 3. Chokes or baffles should be installed in screw conveyors.

114. Q. What two types of lighting can be used in Silos or Bins, where there is danger of explosive dust concentrations?

- A.
1. A permanent lighting system with dust proof fittings.
 2. Approved flame-proof flash lamps Certified for Dusty Environments.

115. Q. Name three of the four main requirements that will ensure a fire extinguisher will meet its requirements?

- A.
1. Suitable for task.
 2. Adequate capacity.
 3. Readily available.
 4. Properly maintained.

116. Q. What information and training should be provided to new employees when discussing fire safety? Name six.

- A.
1. Policy on smoking, electrical equipment (switching off at night), etc.
 2. How to raise the alarm
 3. Actions to be taken on discovering a fire
 4. How to call the fire brigade (which staff members to contact to do this)
 5. Location and use of escape routes

6. Assisting disabled persons, visitors and others during evacuation
7. Location and use of fire extinguishers

117. Q. *Fire extinguishing equipment refers to any appliance, either fixed or portable that is provided for automatic or manual use in fire situations. List six pieces of fire extinguishing equipment?*

- A.
1. Fire extinguisher
 2. Hose reels
 3. Fire blankets
 4. Fire hydrants
 5. Dry risers
 6. Gaseous systems
 7. Sprinkler systems.

118. Q. *Many Local Authorities require all buildings to keep a Fire Safety Register which should be kept up to date. List eight items of information that should be recorded in the Fire Safety Register?*

- A.
1. Name and Address
 2. Telephone No.
 3. Owner / Hirer / lessee
 4. The names of responsible managers and staff.
 5. The names of persons allotted specific responsibilities
 6. Staff instruction and training
 7. Details of fire evacuation drills
 8. The type location and number of fire protection appliances
 9. Details of inspection and maintenance of fire protection equipment.
 10. Details of person responsible for maintenance of fire protection equipment.
 11. Details of all fire incidents, false alarms, spillages of flammable liquids or other dangerous occurrences.

119. Q. *Name 8 items to be inspected on a fire audit in an industrial premises?*

- A.
1. Check escape routes available and unobstructed.
 2. Check fire exit doors are clear and easily opened.
 3. Check fire alarm points clearly marked and unobstructed.
 4. Check fire appliances are in working order & unobstructed.
 5. No accumulations of flammable waste.
 6. Flammable liquids are in approved storage,
 7. Gas cylinders not in use are in a safe area.
 8. Check no unauthorised hot work in progress.
 9. Check fire doors are closed.
 10. Check the sprinkler system is operative.

120. Q. Name 8 precautions necessary in a plant where explosive or flammable dust may accumulate?

- A. Enclose Plant.
- Remove Dust.
- Exclude sources of ignition/static.
- Provision of chokes and/or baffles.
- Provision of explosion vents.
- Provision of explosion suppression.
- Provision of an inert gas blanket.
- Wet down the dust.

FIRST AID

1. **Q. *What is the initial first aid treatment for acid burns?***
 - A. Flood the area with slowly running water for 20 minutes.
Gently remove contaminated clothing while flooding the area.

2. **Q. *What are the two primary objectives of First Aid treatment?***
 - A. Sustain life
Prevent a situation from becoming worse
Promote recovery.

3. **Q. *Who must be in charge of a First Aid box?***
 - A. A responsible or trained person.

4. **Q. *What special warning would you give to a casualty with suspected spinal injuries?***
 - A. Not to attempt to get up or move.

5. **Q. *What must a first aider always treat for and why?***
 - A. Shock - Shock can prove fatal unless measures are taken to counteract it.

6. **Q. *Under what circumstances is it permissible to move a seriously injured person?***
 - A. If there is further danger by leaving them where they are.

7. **Q. *Where is the Humerus?***
 - A. In the upper arm.

8. **Q. *Where is the Radius?***
 - A. In the forearm.

9. **Q. *Where is the Ulna?***
 - A. In the forearm.

10. **Q. *Where is the Femur?***
 - A. In the Thigh.

11. Q. *Where are the tarsals and metatarsals?*
A. In the ankles and feet
12. Q. *Where are the carpals and metacarpals?*
A. In the wrists and hands
13. Q. *In what area of the body is one likely to sustain a Depressed Fracture?*
A. The Skull.
14. Q. *Give two of the principal types of open wound?*
A. 1. Incised.
2. Lacerated.
3. Punctured.
15. Q. *Name two conditions associated with electric shock that may be fatal?*
A. 1. Asphyxia.
2. Serious Burns.
3. Fibrillation of the heart.
16. Q. *Other than Electric Shock, what causes asphyxia?*
A. Anything that prevents a supply of fresh air from reaching the lungs.
17. Q. *What is the aim of Resuscitation?*
A. To prevent damage to the brain and other vital organs, which would occur through lack of oxygen.
18. Q. *Give two signs that would lead you to suspect a fracture in arm or leg injuries?*
A. 1. Pain.
2. Swelling.
3. Shortening of limb.
4. Abnormal positioning of hand or foot.
19. Q. *Give two uses for a collar and cuff sling?*
A. 1. To support the wrist and raise the forearm in injuries to wrist and forearm.
2. To support the weight of a plaster cast when applied to wrist or forearm.

20. Q. *In the case of eye injuries, what should always be done?*
- A. They should always be seen by a qualified First Aider or Nurse, and referred to a doctor if necessary.
21. Q. *If somebody is heavily splashed with a corrosive liquid, name two necessary first aid actions?*
- A. 1. Get the person quickly under running water.
2. Remove the affected clothing.
3. Get professional help if required.
22. Q. *Describe two forms of eyewash bottle?*
- A. 1. Glass bottle with gravity feed.
2. Squeezable plastic bottle.
23. Q. *What does an eyewash bottle essentially contain?*
- A. Water.
24. Q. *If you have used an eyewash bottle on a job, what should you do next?*
- A. Refill the eyewash bottle.
25. Q. *If a person falls and breaks a leg, outline two actions you would take?*
- A. Keep them still and warm, make comfortable without moving, and call for medical assistance.
26. Q. *How many times a minute should you carry out the sequence of artificial respiration on an adult?*
- A. 10 - 12 times a minute until breathing starts, then work to their rhythm.
27. Q. *A person says they feel faint, what two actions must you take?*
- A. 1. Support them until they can sit or lie down.
2. Send for a First Aider.
28. Q. *What is an Antidote?*
- A. A substance given to a person who has swallowed a poison to counteract the effects of the poison.

29. Q. *What is an emetic?*
A. A substance given to a person to induce vomiting.
30. Q. *What is meant by First Aid?*
A. Immediate treatment only.
31. Q. *What do the letters C.P.R. stand for?*
A. Cardio Pulmonary Resuscitation.
32. Q. *Why is a reef knot used in a triangular bandage?*
A. It is non-slip and lies flat.
33. Q. *If there is bleeding from the ear, what does this indicate?*
A. Brain damage.
34. Q. *Abnormally low body temperature is called what?*
A. Hypothermia
35. Q. *A displacement of one or more bones at a joint is called what?*
A. A dislocation
36. Q. *In relation to a choking casualty, when should abdominal thrusts NOT be used?*
A. For pregnant women
For overweight casualties
For infants.
37. Q. *A condition of temporary disturbance to the brain after a head injury is called what?*
A. Concussion.
38. Q. *On arriving at an accident scene, what four steps should you take to control the situation?*
A. 1. Minimise the danger to yourself and others.
2. Get others to assist you.
3. Determine the priorities of the situation.
4. Call for specialised assistance.

39. Q. Give four symptoms of Carbon Monoxide Poisoning?

- A. 1. Giddiness.
- 2. Headaches.
- 3. Oppression in the chest - difficulty in breathing.
- 4. Weakness of Limbs.
- 5. Unconsciousness may occur.
- 6. Colour will deepen to cherry pink as level of CO₂ rises in the blood.

40. Q. Name four uses for bandages?

- A. 1. To fix dressings.
- 2. To secure splints.
- 3. To keep pressure on an injured limb.
- 4. To keep pressure on a wound.
- 5. To provide support for an injured limb.

41. Q. Give four basic pieces of equipment needed for emergency treatment and transport of injured persons?

- A. 1. First Aid Box.
- 2. Stretcher.
- 3. Blankets.
- 4. Splints of various sizes.
- 5. Water container.

42. Q. What is important when sending a casualty to a doctor or hospital after a works accident. Give four points?

- A. 1. The casualty should be accompanied by a note which should refer to the undermentioned.
- 2. The circumstances of the accident.
- 3. Detail of materials involved in the accident, e.g. Concentration, temperature, time of exposure etc.
- 4. Details of First Aid administered.

43. Q. Name the four prime responsibilities of a First Aider?

- A. 1. Assess the situation.
- 2. Identify the injury or condition from which the casualty is suffering.
- 3. Give immediate, appropriate, and adequate First Aid.
- 4. If necessary get the casualty to a doctor or hospital.

44. Q. *When attending an injured person after an accident, special attention should be paid to four conditions. What are these four conditions?*

- A. 1. Failure of breathing.
- 2. Severe bleeding.
- 3. Shock.
- 4. Precautions in case of back or internal injuries.

45. Q. *Explain what is meant by the term - Complicated Fracture?*

- A. It is where the fractured end of bones do not break cleanly and splinters of bone become detached.

46. Q. *Give an example of a comminuted fracture?*

- A. Collar Bone or Clavicle Fracture sustained when a person stretches out an arm to break a fall.

47. Q. *What are the medical terms for the Collar-Bone and Shoulder-Blade?*

- A. Collar-Bone:- Clavicle.
- Shoulder-Blade:- Scapula.

48. Q. *What are the medical terms for the Breast-Bone and Funny-Bone?*

- A. Breast-Bone:- Sternum.
- Funny-Bone:- Humerus.

49. Q. *What are the medical terms for the Knee-Cap and Upper-Leg?*

- A. Knee-Cap:- Patella.
- Upper-Leg:- Femur.

50. Q. *Name the two bones of the lower leg?*

- A. The Fibula and the Tibia.

51. Q. *Name the two bones of the lower arm?*

- A. The Radius and the Ulna.

52. Q. *What are the four normal symptoms of inflammation?*

- A. 1. Redness.
- 2. Tenderness.
- 3. Pain.
- 4. Swelling.

53. Q. List four symptoms of a fractured bone?

- A. Difficulty in moving
- Tenderness
- Swelling
- Bruising
- Deformity
- Symptoms of shock.

54. Q. Give four causes of shock?

- A. Loss of body fluids
- Allergies
- Heart attack
- Severe infections
- Spinal injuries
- Fear
- Pain.

55. Q. Give two reasons why slings are used in an injury?

- A. 1. To afford support and rest to an upper limb.
- 2. To prevent the weight of an upper limb pulling on or moving the chest, shoulders, or neck.

56. Q. What may result if the blood vessels are constricted and the flow of blood is stopped in the limbs?

- A. Gangrene in the affected limbs.

57. Q. Give two methods of treating a person who has fainted?

- A. 1. Get the person into fresh air, lay the person flat on their back, raise feet and legs, loosen tight clothing at neck, waist, and chest.
- 2. Get the person into fresh air, sit the person down, loosen tight clothing at neck, waist, and chest, place persons head between their knees.

58. Q. Name four methods of artificial respiration?

- A. 1. Mouth to mouth.
- 2. Schaeffer.
- 3. Holgar Nielson.
- 4. Silvesters.

59. Q. *What is the treatment for a nose bleed. Give four points?*
- A. 1. Sit the patient up with their head slightly forward.
2. Instruct them to breathe through their mouth.
3. Pinch the soft part of the nose firmly for 10 minutes.
4. Prevent them from swallowing blood.
60. Q. *Name four types of wounds?*
- A. 1. Incised.
2. Graze.
3. Lacerated.
4. Puncture.
5. Gun Shot.
6. Contused.
61. Q. *If a person's heart is beating faintly should you assist it with heart compression?*
- A. No.
62. Q. *What are the two purposes of blood circulation?*
- A. 1. To carry oxygen to the tissues.
2. To extract carbon dioxide from the tissues.
63. Q. *At what stage can you leave a patient to summon help?*
- A. When the patient is breathing normally.
64. Q. *Give two reasons why people who are unconscious are placed in the recovery position?*
- A. 1. To prevent the tongue falling back and blocking the airways.
2. To prevent vomit lodging at the back of the throat and blocking the airways.
65. Q. *List two items that should NOT be applied to serious or severe burns?*
- A. Adhesive plaster or tape
Lotions, ointments or fats
Fluffy materials e.g. lint.
66. Q. *Give four causes of unconsciousness?*
- A. Stroke
Epilepsy

Drug overdose
Head injury
Cardiac arrest
Poisoning
Lack of oxygen
Diabetes
Alcohol.

67. Q. *What should be the aim of First Aid in the treatment of Burns or Scalds. Give 3?*

- A. 1. Reduce the effect of heat - use cold water.
2. Prevent infection - cover with a clean non fluffy cloth.
3. Minimise shock - reassure, rest, keep warm, quiet etc.
4. Remove to hospital if burns are severe.

68. Q. *In First Aid what is meant by the terms "Signs" and "Symptoms"?*

- A. Signs - Are the abnormal things such as bleeding, swelling, deformity, raised or irregular pulse - i. e. you see them.
Symptoms - Are sensations that the casualty describes to you such as pain, loss of movement, giddiness, feeling of heat or cold, - i. e. things you do not see.

69. Q. *What is the medical term given to a severe allergic reaction within the body from a poison?*

- A. Anaphylactic Shock.

70. Q. *What instrument is used to measure blood pressure?*

- A. A Sphygomanometer.

71. Q. *Give six signs or symptoms of shock?*

- A. 1. Giddiness or Faintness.
2. Coldness.
3. Nausea.
4. Pallor.
5. Cold Clammy Skin.
6. Slow Pulse, becoming feeble and rapid.
7. Vomiting.
8. Unconsciousness.

72. Q. *Many substances found in or about the home can be poisonous. What is the recommended First Aid in the case of a child who has drunk some poisonous liquid. Give 6 actions?*
- A. 1. Quickly determine what has been drunk
 2. Keep the child warm and comfortable.
 3. Do not induce vomiting.
 4. If unconscious put in recovery position.
 5. Remove to hospital.
 6. Bring a sample of the substance with you to hospital.
73. Q. *Give six signs or symptoms that may be apparent if a casualty was suffering from asphyxia due to fumes or smoke?*
- A. 1. Difficulty in Breathing - shallow or fast.
 2. Breathing Noisily - Gurgling or snoring.
 3. Possible Frothing at the Mouth.
 4. Blueness of Lips.
 5. Confusion.
 6. Unconsciousness.
 7. Breathing Stopped.
74. Q. *If a person becomes unconscious in an enclosed space*
 (a) *What action would you take and*
 (b) *What equipment would you need? Name five items*
- A. (a) Get assistance and effect a rescue
 (b) Breathing Apparatus,
 Resuscitators,
 Life Lines,
 Wrist Straps, or
 Harness.
75. Q. *What are the six main signs of carbon monoxide poisoning?*
- A. 1. Dizziness,
 2. Headache.
 3. Nausea.
 4. Redness of skin.
 5. Difficult breathing.
 6. Coma.

FIRST AID

76. Q. *What do you call the condition resulting from poisons being released into the blood stream from crushed muscles and bones, and what may it cause?*
- A. Crush Syndrome - It may cause damage to or even destroy the kidneys.
77. Q. *In (1) which Swiss city and in (2) what year was the International Red Cross Society established?*
- A. 1. Geneva.
2. 1864.
78. Q. *Name eight Steps in the First Aid Treatment of Shock?*
- A. 1. Comfort and reassure the casualty.
2. Lay the casualty on a blanket, and keep warm.
3. Keep the head low and turned to one side.
4. Loosen tight clothing to assist circulation.
5. If thirsty, moisten lips with water.
6. Check the pulse, 72 beats per minute.
7. Check breathing rate, 16/18 times per minute.
8. Apply resuscitation, if breathing stops.
9. Get casualty to Doctors care quickly.

FLAMMABLE LIQUIDS

1. Q. *Does a higher flash point mean that a liquid is more flammable?*
A. No - Less flammable.
2. Q. *What particular danger exists when flammable liquids or gases which are heavier than air are spilled?*
A. The vapours may travel along the ground until they reach a source of ignition, or may collect in cellars etc. and accumulate to cause an explosion at a later stage.
3. Q. *Why earth metal equipment when dealing with flammable liquids?*
A. To reduce the risk of a build up of static electricity which may cause a spark.
4. Q. *How would you contain leaks from large tanks containing flammable liquids?*
A. Surround them with a containment wall or bund.
5. Q. *Do some moving liquids generate static electricity?*
A. Yes - This can be a problem with flammable liquids.
6. Q. *What type of device should you use to measure flammable vapours in an area prior to allowing work to commence in it?*
A. An Explosimeter or Flammable Gas Detector.
7. Q. *How would you dispose of flammable liquid waste?*
A. Store carefully until you can either incinerate them or have them incinerated at a suitable site
8. Q. *If your overalls become soaked with flammable solvent, what action should you take?*
A. Remove them at once.
9. Q. *How should vessels, bins, tanks, and rooms used for storing flammable liquids be marked?*
A. "Highly flammable liquid".
10. Q. *What name is given to a suspension of a liquid in a gas?*
A. Aerosol.

FLAMMABLE LIQUIDS

11. Q. *Do some moving dusts generate static electricity?*
- A. Yes - This can be a problem with flammable dusts.
12. Q. *Name four essential safety precautions which should be taken when handling flammable solvents?*
- A. 1. No smoking or naked lights.
2. Wear appropriate protective clothing.
3. Avoid spillage.
4. Use proper pouring aids.
5. Earth the container and pourer to avoid static.
13. Q. *Name four precautions which should be exercised when storing flammable solvents?*
- A. 1. Fire proof building.
2. Flameproof electrical fittings.
3. Means of escape.
4. Fire appliances.
5. Warning notices.
6. Earth the container and pourer to avoid static.
14. Q. *Name two ways of overcoming the generation of static electricity in flammable liquid lines?*
- A. 1. Earth supply lines.
2. Use Anti-static hose.
3. Reduce flow rates.
15. Q. *What are the two main methods of removing flammable material residues from drums or small tanks to be repaired?*
- A. 1. Steaming out with live steam.
2. Boiling in water containing an alkali or detergent.
16. Q. *What other two things must you have when storing flammable liquids other than a fire-proof building, flameproof electrical fittings, and warning notices?*
- A. 1. Fire Appliances.
2. Means of escape.

FLAMMABLE LIQUIDS

17. Q. *Name four intrinsic factors on which the fire risk of a flammable liquid depend?*

- A. 1. Tendency to vaporise (volatility).
- 2. Flash Point.
- 3. Density (Lighter or Heavier than Air).
- 4. Ignition Temperature.

18. Q. *What is the maximum quantity of flammable liquid which may be kept in a laboratory, and under what condition may this liquid be kept in the laboratory?*

- A. 1. Minimum practicable in relation to daily needs.
- 2. It should be kept in a closed vessel or container, in a fireproof cupboard.

19. Q. *Describe what is meant by the following?*

(a) Flashpoint.

(b) Auto Ignition Temperature.

(c) Flammability Limits.

- A. (a) Temperature at which a liquid gives off sufficient flammable vapour to form an ignitable mixture near its surface.
- (b) Lowest temperature at which a substance will ignite spontaneously.
- (c) The upper and lower concentrations within which a vapour will form an ignitable mixture with air.

GENERAL

1. **Q. *What is a code of practice?***
 - A. Practical guidelines on the ways to achieve the lawful standards and objectives.

2. **Q. *What would you expect to find in a pipeline painted Light Blue?***
 - A. Air.

3. **Q. *If you go to a job in a department which is not your own, what do you do first?***
 - A. Report to the supervisor.

4. **Q. *When you have finished a job, what is the last thing you must do?***
 - A. Clean up.

5. **Q. *What gas produced in the brewing industry has been responsible for a number of fatal accidents?***
 - A. Carbon Dioxide (CO₂).

6. **Q. *How can you safely open a bung from a barrel?***
 - A. Wear protective clothing especially eye protection and remove the bung very slowly to release any pressure.

7. **Q. *When a defect is found in any appliance what should be done?***
 - A. Report it at once and get it repaired or replaced.

8. **Q. *What situations should deter the use of power tools?***
 - A. Where combustible gas or vapours exist.

9. **Q. *What is the main toxic gas that persons involved in sewer maintenance and repair should be aware of?***
 - A. Hydrogen Sulphide (H₂S).

10. **Q. *What toxic gas should be of concern where diesel power trucks operate in confined areas?***
 - A. Carbon Monoxide (CO).

GENERAL

11. Q. *What dangerous material and dust may be encountered when stripping insulation from old steam boilers?*
- A. Asbestos.
12. Q. *What hazardous liquid may be encountered in connection with car batteries?*
- A. Sulphuric Acid (H₂SO₄) - Accept acid for one mark.
13. Q. *What is the principal danger associated with diving?*
- A. Decompression sickness (Bends).
14. Q. *What is the significant hazard associated with grain handling equipment?*
- A. Dust explosions.
15. Q. *The evaluation and control of mechanical and physical hazards encompass four engineering aspects - Name them?*
- A. 1. Design.
2. Construction.
3. Operation.
4. Maintenance.
16. Q. *Abrasive wheels are coded as follows:- the abrasive, the grain, the bond, the structure, and the grade of hardness. Who should be familiar with this system, and why should a person be familiar with the coding system?*
- A. 1. The person responsible for wheel mounting.
2. So that the correct wheel is selected and fitted for the work to be done.
17. Q. *Give four conditions that should apply to abrasive wheel work rests?*
- A. 1. They should be of substantial construction.
2. They should readily adjust to follow wheel wear.
3. They should be securely clamped to the machine.
4. The workrest face should be within 3 mm of wheel face.
18. Q. *What safeguards should be taken when using fixed abrasive wheels. Give four?*
- A. 1. Fixed guard to contain wheel in the event of it shattering.
2. Eye protection.
3. Machine controls readily accessible.
4. Tool rests adjusted correctly.

19. Q. *In March 1992, eleven North Sea oil workers lost their lives as the result of a helicopter crash. The subsequent enquiry was told that the crash was inevitable for several reasons. Give four reasons?*
- A. 1. Poor flying Conditions.
2. Atrocious weather.
3. Pilot took quickest route.
4. Exceptional down draught.
5. Pressure from crew in a hurry home.
20. Q. *When a replacement wheel has been fitted to a grinding machine and the guards and rest have been fitted and adjusted. What is the next procedure and what precautions must be taken?*
- A. 1. Run the wheel for at least a minute before using.
2. Make sure everybody is standing clear during the test.
21. Q. *The EU specifies colours for safety signs for member countries, what colour does the EU specify for Caution?*
- A. Yellow.
22. Q. *The EU specifies colours for safety signs for member countries, what colour does the EU specify for Mandatory Action?*
- A. Blue.
23. Q. *Name two conditions which must be reduced or eliminated to prevent an explosion of a flammable dust?*
- A. 1. Reduce the dust concentration below the Lower Explosion Limit Level.
2. Prevent any sources of ignition where there are concentrations of flammable dust.
3. Reduce the oxygen content of the container of the dust i.e. pressure with an inert gas.
24. Q. *What common salts found in water are usually responsible for clogging the tubes of a boiler. Give two?*
- A. 1. Calcium Salts.
2. Magnesium Salts.
25. Q. *By which everyday method can one generate easily and most simply a temperature of 1,500 degrees centigrade?*
- A. By lighting a match, the temperature of a burning match head is approximately 1,500 degrees centigrade.

26. Q. *Why must a helicopter always be approached from the front quarter?*
 A. The tail rotor will be almost invisible.
27. Q. *A dust explosion requires two conditions in addition to the presence of dust?*
 A. 1. Oxygen or Air.
 2. Ignition Source.
28. Q. *Alpha, Beta, Gamma, and X-rays are all forms of ionising radiation. Which two penetrate material very easily?*
 A. Gamma and X-rays.
29. Q. *Describe the symbol for Radioactivity?*
 A. Like the blades of a three bladed fan.
30. Q. *The Seveso II Directive has been implemented in Ireland. Which of the following aspects has been incorporated that was not included in the original Seveso Directive?*
 • *Land Use Planning*
 • *Off-site emergency plans*
 • *Information to the public.*
 A. Land Use Planning
31. Q. *The Seveso II Directive has been implemented in Ireland. Which of the following aspects has been incorporated that was not included in the original Seveso Directive?*
 • *Chemicals with very toxic effect*
 • *Chemicals with explosive effect*
 • *Chemicals dangerous to the aquatic environment*
 A. Chemicals dangerous to the aquatic environment.
32. Q. *The Seveso II Directive has been implemented in Ireland. Which of the following aspects has been incorporated that was not included in the original Seveso Directive?*
 • *Domino effect of one site on another*
 • *Restriction on disclosure of information*
 • *Reporting accidents to the European Commission*
 A. Domino effect of one site on another.

GENERAL

33. Q. *Where in Europe (city and country) is the European Agency for Safety and Health at Work based?*
- A. Bilbao, Spain.
34. Q. *What is the minimum temperature requirement in a workplace for sedentary office workers?*
- A. 17.5 deg. C.
35. Q. *As a result of the report of the Task Force on the prevention of Workplace Bullying a charter was established, what was the name of this charter?*
- A. Dignity at Work – The Challenge of Workplace Bullying.
36. Q. *As a result of the report of the Task Force on the prevention of Workplace Bullying. Three codes of Practice have been made under the following pieces of Primary Legislation.*
- *Safety, Health and Welfare at Work Act 1989.*
 - *Industrial Relations Act 1990.*
 - *Employment Equality Act 1998.*
- What Code of Practice was made under Safety, Health and Welfare at Work Act 1989?*
- A. Code of Practice on the Prevention of Workplace Bullying.
37. Q. *As a result of the report of the Task Force on the prevention of Workplace Bullying. Three Codes of Practice have been made under the following pieces of Primary Legislation.*
- *Safety, Health and Welfare at Work Act 1989.*
 - *Industrial Relations Act 1990.*
 - *Employment Equality Act 1998.*
- What Code of Practice was made under Industrial Relations Act 1990?*
- A. Code of Practice detailing Procedures for Addressing Bullying in the workplace.
38. Q. *As a result of the report of the Task Force on the prevention of Workplace Bullying. Three Codes of Practice have been made under the following pieces of Primary Legislation.*
- *Safety, Health and Welfare at Work Act 1989.*
 - *Industrial Relations Act 1990.*
 - *Employment Equality Act 1998.*
- What Code of Practice was made under Employment Equality Act 1998?*
- A. Code of Practice on Guidance on Prevention and Procedures for dealing with Sexual Harassment and Harassment at Work.

39. Q. *Name 6 Safety Attachments which are normally fitted to a steam boiler?*
- A. 1. Stop Valve connecting the boiler to the steam pipe.
 2. A suitable safety valve.
 3. A correct pressure gauge with maximum working pressure distinctly marked.
 4. A means for attaching a test pressure master gauge.
 5. At least one water level gauge.
 6. An efficient low water level alarm device.
 7. An identifying plate.
40. Q. *What precautions must be taken during a steam boiler inspection, repair or maintenance, when the boiler is one of a range of boilers. Give three?*
- A. 1. All inlets through which steam or hot water might enter from the other systems are blanked off.
 2. All valves and taps controlling such entry are closed and securely locked.
 3. With common Blow-off, each Blow-off valve or tap must be key interlocked.
41. Q. *If a steam pipe is assessed as suitable for a higher pressure than originally intended, what associated checks must be made on the pipe?*
- A. 1. Flanges,
 2. Joints,
 3. Bolts,
 4. Valves,
 5. Other Attachments.
42. Q. *Before a steam boiler is taken into service for the first time a certificate from the manufacturer is required, what two essential pieces of information must this certificate contain?*
- A. 1. The Maximum Permissible Working Pressure.
 2. The nature of the tests to which the boiler and its fittings have been submitted.
43. Q. *What precautions should be taken with the discharge from Safety Valves on a steam boiler?*
- A. The discharge from safety valves must be conducted upwards to a location where they do not constitute a danger.
44. Q. *Give three normal daily checks to be carried out on a steam boiler under load?*
- A. 1. Cross blow and check water level gauges.
 2. Check operation of automatic water level controls.
 3. Check fire controls and alarm.

45. Q. *When may work be commenced in a boiler furnace or boiler flue which has just been taken out of service and isolated?*
- A. When it has been sufficiently cooled by ventilation or otherwise to make work safe for the persons employed.
46. Q. *List six Safety and Health measures to avoid accidents when working in confined spaces?*
- A. 1. Pre-Entry Precautions, remote removal of contents.
2. Isolate to ensure no accidental introductions.
3. Check and Certify the atmosphere, sufficient Oxygen.
4. Provide adequate protective clothing.
5. Ensure ventilation of space during occupancy.
6. Provide Safety Harness and Wrist Straps.
7. Provide a trained tank watcher.
8. Have means of sounding alarm and effecting rescue on hand
47. Q. *Before any tank, pit or closed space, or any place where there is not natural ventilation is entered. What tests must be carried out on the atmosphere of the space to be entered. Give three tests?*
- A. 1. That the atmosphere is free from combustible or explosive gases.
2. That the space is free from toxic gases.
3. That there is sufficient Oxygen present to avoid a health hazard.
48. Q. *Steamy environment can be hazardous, give six reasons why this is so?*
- A. 1. Clothes become damp.
2. Heat stress from high humidity.
3. Obscures vision.
4. Electrical appliances could become live.
5. Moist hands can cause handling accidents.
6. Wet floors can cause slipping hazards.
49. Q. *What size of abrasive wheels or their washers must have marked on them the maximum permissible speed (in revolutions per minute) when they are first taken into use?*
- A. Abrasive wheels with a diameter greater than 55 millimetres.
50. Q. *Name three conditions that must apply to abrasive wheel work rests on pedestal type grinders?*
- A. 1. They should be of substantial construction.

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2. They should readily adjust to follow wheel wear.
3. They must be securely clamped to the machine.
4. The edge of work rest should be within 3 mm of wheel face.

51. Q. *How frequently should abrasive wheels be dressed, and what is preferable and why?*

- A.
 1. As often as is necessary.
 2. Frequent light dressings are preferable.
 3. Frequent light dressings produce safer more efficient operating conditions.

**52. Q.

1. *What is Glazing in abrasive wheels?*
2. *What is the effect of Glazing in abrasive wheels ?*
3. *How is Glazing corrected ?***

- A.
 1. The use of too hard or too fine a wheel results in glazing. i.e. the wheel face becomes clogged with particles of the material being ground.
 2. The effects are over heating and the need for excessive pressure on the work.
 3. It can be corrected by using the correct wheel structure for the work, or by frequent dressing with a diamond tool.

53. Q. *In order to comply with current legislation and guidance, name three of the essential things a person mounting a grinding wheel must have?*

- A.
 1. Proper Training.
 2. Competency to mount a wheel.
 3. Appointment by the occupier.
 4. His or her appointment entered in the register.

54. Q. *Name three of the five pieces of information given on the label of an abrasive wheel?*

- A.
 1. Abrasive.
 2. Grain.
 3. Grade.
 4. Structure.
 5. Bond.

55. Q. *In relation to, (a) Circular saws and, (b) Grindstones what influence has speed on safety?*

- A.
 - (a) The faster the blade runs the more effective it cuts and thus the safer it is.
 - (b) The faster the stone runs the more dangerous it becomes.

56. Q. *The EC recommends certain geometric shapes for safety signs. Give how three of the following signs are represented:-*
1. *Prohibition,*
 2. *Warning,*
 3. *Emergency and Information?*
 4. *Hazard?*
- A. 1. Prohibition: Circle.
 2. Warning: Triangle (Equilateral Base Down)
 3. Emergency & Information: Rectangle or Square.
 4. Hazard: Diamond.
57. Q. *Describe the warning signs used under classification packaging and labelling regulations to signal:-*
- (a) *Toxic Materials,*
 - (b) *Corrosive Materials,*
 - (c) *Irritant Materials?*
- A. All the above signs are in black characters/symbols on a yellow background.
 (a) A skull and cross bones in a triangle.
 (b) A test tube pouring drops of liquid onto a material with fumes arising from the material.
 (c) An X shape known as a Saint Andrews Cross.
58. Q. *Name six types of radiation measuring devices?*
- A. 1. Film Badge.
 2. Ionisation Chamber.
 3. Geiger Counter.
 4. Dosimeter.
 5. Proportional Counter.
 6. Scintillation Counter.
59. Q. *What are the three principal methods of protection against ionising radiation?*
- A. By controlling the:-
1. Shielding of Source.
 2. Distance from the Source.
 3. Time of the Exposure.
60. Q. *Name three types of ionising radiation?*
- A. 1. Alpha Particles.
 2. Beta Particles.

3. Neutron Particles.
4. X - Rays.
5. Gamma - Rays.

61. Q. *What are the three main factors that increase the exposure hazard to radioactive substances?*

- A.
 1. Exposure Time.
 2. Type of Radiation
 3. Intensity of Radiation.

62. Q. *Can you name three of the broad procedure classifications for radioactive decontamination?*

- A.
 1. Mechanical.
 2. Physical.
 3. Chemical.
 4. Radiological.

63. Q. *What three tests should be carried out on a sewer atmosphere before entry?*

- A.
 1. Sufficient oxygen present.
 2. Presence of toxic gases.
 3. Presence of flammable gases.

64. Q. *What is the principal of operation of Electrostatic Dust Extractors?*

- A. The principal of these appliances is the ionisation of dust by passing the air or gas through an electric field thereby causing the particles to settle on collecting surfaces that are kept at the opposite polarity.

65. Q. *What are the three "E"s of a Safety Programme?*

- A.
 1. Education.
 2. Enforcement.
 3. Engineering Standards.

66. Q. *Which, if any of the following, are ferrous metals: Iron, Aluminium, Copper, Lead and Steel?*

- A. Iron and Steel.

67. Q. *Name six headings that a code of safe work practice may be divided into?*

- A.
 1. Organisation of work.

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2. Work on apparatus classified as dangerous.
3. Work on dangerous locations.
4. Work and working equipment.
5. Operation of certain plant.
6. Definition.
7. Confined spaces.

68. Q. *In order to comply with current legislation and guidance on Docks who is responsible for providing life saving appliances, e.g. lifebuoys etc.?*

- A. The person or body having general management and control of the dock, wharf, or quay, or any other person having exclusive right to occupation of any part of the dock, wharf, or quay and who has management and control of such part.

69. Q. *Training is all important in maintaining Health and Safety Standards in the Work place. Can you name three of the four general situations that may arise for employee's during their employment where training must be given?*

- A.
 1. On recruitment.
 2. On transfer or change of job.
 3. A change of work equipment.
 4. On introduction of new technology.

70. Q. *Outside of First Aid Box contents matching the workplace requirements. Name three of the four other essential requirements to be addressed in respect of such boxes?*

- A.
 1. A regular contents check.
 2. Location identity signs.
 3. Easily accessible.
 4. A responsible person.

71. Q. *In the design of a load handling station at a work place. Can you name three of the four essential considerations to be taken into account?*

- A.
 1. Distance to be covered.
 2. Height difference between reception and disposing of load.
 3. Frequency of handling.
 4. Weight of objects to be moved.

72. Q. *In choosing inflatable personal protective equipment to prevent persons drowning on falling into water, name three of the five essential safety and performance criteria that equipment selection should be based on?*

- A. 1. Buoyancy.
 2. Righting ability even if wearer unconscious.
 3. Inflation time.
 4. Triggering of Automatic Inflation.
 5. Ability to keep nose and mouth out of water.

73. Q. *The agitation of slurry on farms can result in the release of a number of hazardous gasses. Name the most common of these?*

- A. 1. Hydrogen sulphide.
 2. Carbon dioxide.
 3. Ammonia.
 4. Methane.

74. Q. *In carrying out a risk assessment to ensure safe work in Confined Spaces name six factors inside the space that should be considered?*

- A. 1. Contents
 2. Previous Contents
 3. Residues
 4. Contamination
 5. Oxygen Deficiency
 6. Oxygen Enrichments.
 7. Structure and Layout
 8. Temperature
 9. Humidity
 10. Visibility.

75. Q. *In carrying out a risk assessment to ensure safe work in Confined Spaces name six factors outside the space that should be considered?*

- A. 1. Ingress of sources of ignition.
 2. Ingress of substances.
 3. Inadequate Isolation.
 4. Inadvertent operation of plant.
 5. Nearby work activities.
 6. Inadvertent blocking of exit routes.

76. Q. *Name 6 key elements in developing a Safety Management System?*

- A. 1. Initial Review.

2. H & S Policy.
3. Planning.
4. Implementation and Operation.
5. Measuring Performance.
6. Reviewing Performance.
7. Auditing.

77. Q. Name six hazards involved with the use of chainsaws?

- A.
1. Vibration.
 2. Noise.
 3. Fumes.
 4. Dust.
 5. Eye Injuries.
 6. Back Strain.
 7. Kick Back Injuries.
 8. Amputation.

The Kick Back usually causes injuries to face and hands when the tip of the guide bar touches the tree.

78. Q. The Health and Safety Authority has eight offices in Ireland, where are these offices located?

- A.
1. Dublin (Head Office).
 2. Cork.
 3. Limerick.
 4. Waterford.
 5. Galway.
 6. Athlone.
 7. Sligo.
 8. Kilkenny.

79. Q. List eight of the main protective measures to be considered and incorporated into a plant when designing explosion control into plant systems?

- A.
1. Segregation.
 2. Explosion relief.
 3. Containment.
 4. Flame arresters.
 5. Flame traps.
 6. High speed isolation valves.
 7. Explosion suppression.
 8. Chokes.
 9. Baffles.

80. Q. *Current legislation and guidance lays down four considerations in respect of the arrangement of outdoor workstations that are required to provide for the safety and health of employees. Can you name these considerations?*
- A.
 1. That employees are protected against inclement weather conditions and falling objects.
 2. That employees are not exposed to harmful noise levels or to harmful influences such as gases vapours or dust.
 3. That employees can leave their workstations speedily in the event of danger or can be rapidly assisted to do so.
 4. That employees can not slip or fall.
81. Q. *A chain saw should be checked thoroughly before use. Name eight of the essential checks?*
- A.
 1. Stop switch marked and functioning.
 2. Guards in position and good repair.
 3. No damage to chain guide bar and sprockets.
 4. All external fittings secure(e.g. Nuts, screws etc.)
 5. Chain tension correct.
 6. Chain lubrication system working.
 7. Saw chain sharpened.
 8. Chain brake working properly.
82. Q. *NISO has had twelve presidents since it was founded. Name eight of them?*
- A.
 - Benedict Daly.
 - Des Gaffney.
 - Pat Storan.
 - Donal O'Sullivan.
 - Jim Fitzgerald.
 - Diarmuid Deveraux.
 - Paul Kerrigan.
 - Mary Keane Broderick.
 - Alan Thompson.
 - Bill Kelly.
 - John O'Shaughnessy.
 - George Brett.

GOOD HOUSEKEEPING

1. **Q. *Falls trips, slips, and collisions are typical accidents caused by what?***
A. Bad house-keeping.
2. **Q. *When a person finishes a job what two things must always be done?***
A. 1. Put tools away.
2. Tidy up area.
3. **Q. *Give two results of good housekeeping?***
A. 1. Accidents prevented.
2. Fires prevented.
3. General Cleanliness.
4. **Q. *Give two methods of removing oil from a workshop or factory floor?***
A. 1. Absorb in sawdust.
2. Proprietary absorbent.
5. **Q. *How often should floors be cleaned?***
A. At least once a week.
6. **Q. *Give another name for good housekeeping?***
A. Tidiness.
7. **Q. *'A place for everything, everything in it's place', Why?***
A. Tidiness, Tools etc. are easily found.
8. **Q. *What is the best way to remove dust and dirt from the workroom?***
A. By vacuum cleaning.
9. **Q. *Why not blow the dirt and dust away?***
A. It only transfers it to another place.
10. **Q. *How often should a machine be cleaned?***
A. Daily or after each shift or as often as necessary to prevent unsafe conditions.

11. Q. *Give two principles of good stacking?*

A. Good stability,
not too high for access,
well bonded and chocked,
and clear of overhead plant.

12. Q. *Should stacks of goods be vertical all round?*

A. No, they should be stepped back occasionally.

13. Q. *What connection has good housekeeping with fire?*

A. It considerably reduces the risk.

14. Q. *Give two functions of white lines in yards or factory floor areas?*

A. 1. To define passageways.
2. To define storage areas.

HEALTH

1. **Q. *If a solvent is used as a cleaner, what is necessary?***
A. That occupational exposure levels are not exceeded.
2. **Q. *Why should solvent not be used for cleaning hands?***
A. Solvent weakens skin by defeating it, and eventually breaks down protective layers.
3. **Q. *Suggest two precautions for individuals working in an oily occupation?***
A.
 1. Wash overalls regularly.
 2. Do not put oily rags in pockets.
 3. Inspect the body for symptoms regularly.
 4. Maintain a high standard of personal hygiene.
4. **Q. *Why not use abrasives to clean the skin?***
A. They irritate the skin and tend to rub in the dirt.
5. **Q. *What precautions should be taken when painting or cleaning using flammable solvents in a confined space?***
A. There must be adequate ventilation, and smoking, and the use of naked flames, or sparks must be prohibited.
6. **Q. *Why does a person using an electrical welding process wear special eye protection?***
A. To protect the eyes from Ultra-Violet Rays.
7. **Q. *How would you protect persons other than the welder from eye damage?***
A. Arrange a screen around the job or provide eye protection.
8. **Q. *When dealing with toxic substances, what do the letters T.L.V. mean?***
A. Threshold Limit Value.
9. **Q. *What is "Caisson Disease"?***
A. Decompression Sickness, or the Bends.
10. **Q. *Working with a Laser may cause injury to the eye and skin. What is a Laser?***
A. A beam of Intensified Light (Light Amplification by Stimulated Emission of Radiation).

11. Q. *What is the common name for sepsis?*
A. Infection.
12. Q. *What do the letters E.C.G. stand for?*
A. Electro - Cardio - Graph.
13. Q. *When dealing with toxic substances, what do the letters M.A.C. stand for?*
A. Maximum Allowable Concentration.
14. Q. *When dealing with toxic substances, what do the letters P.P.M. stand for?*
A. Parts per Million.
15. Q. *What is a sprain?*
A. Partial tearing of the tendons or ligaments connected with a joint.
16. Q. *What is a toxic substance?*
A. Material that poisons the body system.
17. Q. *What is a corrosive substance?*
A. A liquid or solid which attacks the skin or other material and destroys it.
18. Q. *Give another name for Vertigo?*
A. Dizziness or fear of heights.
19. Q. *If there is a confined space in which dangerous fumes may be present, what must be done before a person may enter?*
A. The atmosphere must be tested and the conditions for entry specified.
20. Q. *If a diesel driven compressor is to be used in a plant, name two necessary precautions?*
A. 1. Must be sited in a safe place.
2. Exhaust fumes must be extracted or adequate ventilation.
3. Check that noise level is not over the legal limit.
21. Q. *What two sources may you take drinking water from?*
A. 1. Mains supply.
2. Any other certified source.

22. Q. *How many bones in the human spine?*
A. 33.
23. Q. *What is the most effective protective measure against Hepatitis B?*
A. Immunity by vaccination.
24. Q. *What disease is characterised by the presence of cells which have an unlimited power of disordered reproduction, resulting in the formation of tumours?*
A. Cancer.
25. Q. *Give two examples of substances or classes of substances exposure to which may lead to chronic effects?*
A. 1. Asbestos.
2. Silica.
3. Lead.
4. Mercury.
5. Carcinogens.
6. Mutagens.
26. Q. *What is meant by working in a 'Hyperbaric Atmosphere'?*
A. 'Hyperbaric Atmosphere' is when work is carried out in a compressed air enclosure or underwater diving.
27. Q. *The physical agents directive deals with problems of HAV and WBV. What are HAV and WBV abbreviations for?*
A. HAV is Hand Arm Vibration and WBV is Whole Body Vibration.
28. Q. *What safety issues does the 'Suzy Lamplugh Trust' deal with?*
A. The Suzy Lamplugh Trust deals with issues of lone working and personal safety.
29. Q. *The concentration of Chlorine Gas in a workroom should not exceed what level?
1 ppm (part per million) (b) 300 ppm. (c) 1 per cent. ?*
A. (a) 1 ppm.

30. Q. *Immediate corrective measures should be taken when the atmospheric concentration of Carbon Dioxide (CO₂) is greater than:- (a) 3% (b) 10% (c) 21%?*
- A. (a) 3%.
31. Q. *Immediate corrective measures should be taken when the atmospheric concentration of Oxygen is less than:- (a) 18%. (b) 12% (c) 5%?*
- A. (a) 18%
32. Q. *Immediate corrective measures should be taken when the atmospheric concentration of a Toxic Gas exceeds:-*
(a) The amount of oxygen in the air.
(b) The Maximum Allowable Concentration.
(c) Occupational Exposure Limit Value ?
- A. (c) Occupational Exposure Limit Value.
33. Q. *When dealing with toxic substances what do the letters S.T.E.L. stand for?*
- A. Short Term Exposure Limit.
34. Q. *What is an accumulative poison?*
- A. A poison that is absorbed into the body and stored until it may build up to the proportion which may cause illness or death e.g. Lead and Mercury.
35. Q. *Lead is an accumulative poison which is absorbed into the body and stored until it may build up to the proportion which may cause illness or death. Where in the body is Lead stored during this time?*
- A. In the bones.
36. Q. *Mercury is an accumulative poison which is absorbed into the body and stored until it may build up to the proportion which may cause illness or death. Where in the body is Mercury stored during this time?*
- A. In the Kidneys.
37. Q. *What is the name of the medical problem associated with vibrating tools?*
- A. Raynaud's Syndrome.

38. Q. *What is the name of the medical problem associated with the inhalation of siliceous dust in the pottery industry?*
- A. Pneumoconiosis.
39. Q. *Humans can be affected by brucellosis, how do they normally contract it. Qualify your answer?*
- A. Infected animals and animal products are almost always the source of human infection as man to man transmission is exceptional.
40. Q. *When working with synthetic resins, what four factors are most important?*
- A. 1. Keep them off the skin.
2. Remove from skin immediately if contaminated.
3. Keep tools clean during and after work.
4. Report any abnormality found.
41. Q. *Give four types of safety equipment which should be worn by foundry workers?*
- A. 1. Goggles.
2. Visors.
3. Helmets.
4. Safety Shoes & Spats.
5. Aprons.
6. Masks.
42. Q. *A skin lesion may be due to dermatitis, what is a skin lesion?*
- A. Damage or injury to the skin.
43. Q. *Prolonged exposure to hardwood dust may lead to what health risk?*
- A. Cancer of the nasal cavity, and sinuses, it may take over twenty years to develop.
44. Q. *What two parts of the body are especially liable to injury from lasers?*
- A. 1. The Eyes.
2. The Skin.
45. Q. *What have the following four diseases in common, Ringworm, Orf, Leptospirosis, Brucellosis?*
- A. They are diseases caught from animals.

46. Q. *Which of the following parts of the body has the greatest surface area*
(a) *the skin,*
(b) *The digestive tract*
(c) *The respiratory tract?*
- A. The respiratory tract (having an area of 80 m²).
47. Q. *If sealed ionising radiation is used what four things must be done?*
- A. 1. Inform the Radiological Protection Institute of Ireland.
2. Appoint a competent person.
3. Erect warning notices.
4. Keep records.
48. Q. *Give four ways that poisons can enter the body?*
- A. 1. Ingestion.
2. Inhalation.
3. Absorption.
4. Injection.
49. Q. *If a person becomes unconscious in an enclosed space (a) what two actions would you take, and (b) what two actions would you not take?*
- A. (a) 1. Obtain assistance. 2. Obtain B.A.
(b) 1. Enter without B.A. 2. Enter without assistance.
50. Q. *What washing facilities must be provided, give four?*
- A. 1. Hot water.
2. Cold water.
3. Soap.
4. Means of drying.
5. Wash Basin.
51. Q. *Give four methods of drying the hands or face normally found in a work place?*
- A. 1. Hand towels.
2. Roller towels.
3. Paper towels.
4. Hot air dryers.

52. Q. *In the 2007 Safety, Health and Welfare at Work (General Application) Regulations, which Schedule deals with appropriate factors to be taken into account in RISK FACTORS FOR MANUAL HANDLING OF LOADS?*
- A. The Third Schedule.
53. Q. *Raynaud's Syndrome is associated with what type of work and what is its more common name?*
- A. 1. The use of vibrating tools.
2. Vibration white finger.
54. Q. *What occupational disease is associated with each of the following (a) Foundries, and (b) Exposure to iron or iron oxide dust?*
- A. (a) Silicosis.
(b) Siderosis.
55. Q. *What does HIV stand for?*
- A. Human Immunodeficiency Virus.
56. Q. *The biological effect of ultra violet light depends on the wavelength. On what two other additional parameters does the biological effect of ultra violet light depend?*
- A. 1. Intensity.
2. Duration.
57. Q. *Name four physical hazards which damage the eyes?*
- A. 1. Laser Light.
2. Ultraviolet Light.
3. Microwave Radiation.
4. Flying Particles.
5. Ionising Radiation.
6. Radiant Heat
58. Q. *What is meant by a prophylactic?*
- A. An agent or substance which prevents disease.
59. Q. *It is an occupational disease which affects about 5% of the population, it is caused by narrowing of the bronchial tubes. What disease is it?*
- A. Asthma.

60. Q. *What disease is associated with the slaughtering of animals in an abattoir?*
- A. Brucellosis (Pulmonary T. B. in some Countries)
61. Q. *High temperature may cause heat exhaustion in an individual. Give two other effects of high temperature?*
- A. 1. Heat Cramp.
2. Heat Stroke.
62. Q. *The European Agency for Safety and Health at Work issued the results of a pilot study on the state of Occupational Safety and Health in the European Union. Which one of the following sectors was the most identified to be at risk from vibration exposure*
- *Construction?*
 - *Forestry, logging and related services?*
 - *Manufacture of fabricated metal products?*
- A. The Construction sector
63. Q. *The European Agency for Safety and Health at Work issued the results of a pilot study on the state of Occupational Safety and Health in the European Union. Which one of the following sectors was most identified to be at risk from noise?*
- *Drivers and mobile plant operators?*
 - *Metal, machinery and related trades workers?*
 - *Machine operators and assemblers?*
- A. Machine operators and assemblers
64. Q. *The European Agency for Safety and Health at Work issued the results of a pilot study on the state of Occupational Safety and Health in the European Union. Which one of the following sectors was the most identified to be at risk from physical violence;*
- *Public administration and defence; compulsory social security?*
 - *Hotels and Restaurants?*
 - *Health and social work?*
- A. Health and social work.
65. Q. *Who made history by winning the first court case against her employers for the ill effects of Passive Smoking with an out of court settlement of £15,000?*
- A. Veronica Bland

66. Q. *What do you call the injury where you get swelling of the brain and/or haemorrhage causing pressure within the skull resulting in brain damage or death. This occurs when the soft brain tissue strikes the rigid bones of the skull cavity?*
- A. Concussion.
67. Q. *Dust Inhalation - Give three factors which are related to its effect on workers?*
- A. 1. Type.
2. Particle Size.
3. Amount Reaching Lungs
4. State of Health.
68. Q. *What injuries result from a severe chemical burn. Name six?*
- A. 1. Severe Pain.
2. Shock.
3. Loss of body fluids.
4. Absorption of the chemical in the blood stream.
5. Tissue decomposition.
6. Disfiguration.
69. Q. *Name six types of burns (not degrees)?*
- A. 1. Dry Burns.
2. Scalds.
3. Cold Burns
4. Chemical Burns.
5. Electrical Burns.
6. Radiation Burns.
7. Friction Burns.
70. Q. *Describe First Degree, Second Degree & Third Degree Burns?*
- A. 1. First degree burns involve only redness of the skin indicating only a mild inflammation.
2. Second degree burns involve the formation of blisters and possible fluid collection under the skin.
3. Third degree burns the skin sub-cutaneous tissue, red blood cells, capillaries and sometimes muscles are destroyed.

71. Q. *Name six basic requirements for a barrier cream?*

- A. 1. It should offer protection from the harmful agents.
- 2. It should be non-irritating & non-sensitising.
- 3. It should be easily applied.
- 4. It should be easily removed with soap and water.
- 5. It should not rub off under work conditions.
- 6. It should preserve the skin in a healthy condition.
- 7. It should be bacteriostatic to prevent infection through surface damage of the skin.
- 8. It should be economical in use.

72. Q. *What happens to the brain in concussion and what is the subsequent danger?*

- A. 1. Concussion occurs when the soft brain tissue strikes the rigid bones of the skull cavity.
- 2. Swelling of the brain and/or haemorrhage causing pressure within the skull resulting in brain damage or death.

73. Q. *Tetraethyl lead has toxic properties which require stringent precautions against skin and respiratory absorption. What substance that was in large scale use contained this compound?*

- A. Leaded Petrol as an "antiknock ingredient".

74. Q. *What is the name of the major health hazard that was associated with wool sorters before it was overcome by improvement in production methods and disinfection?*

- A. Anthrax.

75. Q. *When selecting respiratory protection and training personnel to use this protection in a specific area, name six items that need careful attention?*

- A. 1. Establish the level of exposure.
- 2. Ensure the protection is adequate for the prevailing conditions.
- 3. Ensure personnel are trained in the fitting, testing and use of the equipment.
- 4. Establish procedures for checking the correct operation, maintenance, and sanitization of the equipment.
- 5. Ensure that there are adequate spares.
- 6. Ensure that shelf life of the spares is valid.

76. Q. *Name three important items related to fume and dust respirators which a wearer should know and personally check?*
- A. 1. That the respirator is correctly fitted and has no leaks.
2. That the correct cartridge and filter are fitted to give adequate protection.
3. That the shelf life and service life of the cartridge fitted has not expired.
77. Q. *The smaller the dust particle, particularly less than 5 microns in diameter, the more readily it will be absorbed into the body via the lungs. Give one other reason to explain why the danger increases as the particle size decreases?*
- A. Particles will remain airborne longer as the particle size falls.
78. Q. *The degree of hazard of a laser depends on the laser power and the wave length. Name one other factor which governs the hazard of a laser?*
- A. Exposure Time.
79. Q. *How does metallic poisoning affect the body?*
- A. It destroys the viability of any form of living matter with which it comes into contact.
80. Q. *How does narcotic poisoning affect the body?*
- A. Narcotics are substances which are absorbed into the blood stream and produce an anaesthetic effect. Some may also affect other systems of the body.
81. Q. *How do Haemolytic poisons affect the body?*
- A. They are substances which destroy the red cells of the blood.
82. Q. *What is an asphyxiant?*
- A. These are substances which do not injure the respiratory tract but give rise to oxygen deficiency in the lungs.
83. Q. *The HSA booklet on workplace stress gives 10 examples of the potential effects of stress on a person. Name six of these effects?*
- A. 1. Increased heart disease.
2. Increased digestive problems.
3. Skin problems.
4. Reduced immunity infections.

5. Anxiety, depression.
6. Irritability.
7. Fatigue.
8. Loss of job satisfaction/commitment.
9. Increased accidents.
10. Substance abuse - alcohol & cigarettes.

84. Q. *The HSA booklet on workplace stress gives 6 examples of the potential effects of stress on an organisation. Name the effects?*

- A.
 1. Increased absenteeism.
 2. Low motivation.
 3. Reduced productivity.
 4. Reduced efficiency.
 5. Faulty decision making.
 6. Poor industrial relations.

85. Q. *Give three precautions that must be taken in the storage and handling of cyanides?*

- A.
 1. Keep cyanide away from acid.
 2. Keep fingernails cut short.
 3. Wash thoroughly before taking food and drink.
 4. Food, drink and utensils must not be brought into rooms where cyanide is present.

86. Q. *In terms of Chemical Exposure does a material classified as toxic to reproduction and having no other detrimental effect have the potential to:-*
(a) *Deform the child during the course of a pregnancy?*
(b) *Damage the mother?*
(c) *Have a delayed effect for several generations?*

- A. (a) Yes.
(b) Yes.
(c) No.

87. Q. *In terms of Chemical Exposure does a material classified as a Mutagen and having no other detrimental effect have the potential to:-*
(a) *Affect the genetic system?*
(b) *Cause hereditary changes?*
(c) *Have a delayed effect for several generations?"*

- A. (a) Yes.
(b) Yes.
(c) Yes.

88. Q. *In terms of Chemical Exposure does a material classified as an Inhalation Sensitizer and having no other detrimental effect have the potential to:-*
- (a) Cause problems in the respiratory tract?
 (b) Induce skin sensitisation?
 (c) Cause severe burns?
- A. (a) Yes.
 (b) No.
 (c) No.
89. Q. *A group of disorders affecting various parts of the body, including the Muscular & Skeletal System, are more commonly referred to as the following:- (a), V.W.F., (b) R.S.I., (c) W.R.U.L.D's, (d) H.A.V., (e) R.S., (f) M.S.D., name them?*
- A. (a) Vibration White Finger.
 (b) Repetitive Strain Injury.
 (c) Work Related Upper Limb Disorder.
 (d) Hand Arm Vibration.
 (e) Reynauds Syndrome.
 (f) Musculo Skeletal Disorders.
90. Q. *List six significant differences between (a) Concussion and (b) Cerebral Compression?*
- A. Concussion
1. Pulse rapid & weak
 2. Breathing rapid
 3. Skin: cold/clammy
 4. Colour: pale face
 5. Sudden onset
 6. Pupils: equal
- Cerebral Compression
1. Pulse slow and bounding/strong
 2. Breathing slow
 3. Skin: dry
 4. Colour: face red / flushed
 5. Gradual onset
 6. Pupils: unequal
91. Q. *"Pattern" bruising is a distinctive sign of what type of injury?*
- A. Internal bleeding from a violent injury.

92. Q. *Name eight areas which need frequent monitoring, to ensure a good level of health in any factory or industrial premises?*

- A. Noise.
Heat.
Ventilation.
Lighting.
Machine Safety.
Toxic or Dangerous Substances.
Dust Levels.
Hygiene and Cleanliness.

93. Q. *Give eight ways by which an employer who has employees working with carcinogens is required to control and reduce the risk to his employees if he can not eliminate their use?*

- A. 1. Identify all carcinogens.
2. Label all carcinogens with a skull and cross bones together with the words "May Cause Cancer" or "Possible Risk of Irreversible Effects".
3. Assess the risk to the workforce from exposure to these carcinogens.
4. Consult the workforce on the risks involved.
5. Put in place appropriate safeguards.
6. Provide the workforce with training ad information.
7. Ensure appropriate health surveillance.
8. Keep records.
9. Reduce exposure time.
10. Reduce the number of people exposed.

94. Q. *One of the ways by which an employer who has employees working with carcinogens may reduce the risk to his employees is by putting in place appropriate safeguards. What is a Carcinogen and give six appropriate safeguards?*

- A. A carcinogen is anything which causes cancer. It can be a specific chemical or it can be a particular job or industrial process where there has been found to be an increased risk of cancer but the exact substance is not yet identified.
1. Substitution for something safer where possible.
 2. Reducing exposure by engineering methods.
 3. Reducing exposure by process control.
 4. Information and training.
 5. Monitoring exposure levels.
 6. Providing personal protective equipment.

95. Q. *The HSA booklet on workplace stress gives 10 examples of the potential effects of stress on a person. Name eight of these effects?*
- A.
1. Increased heart disease.
 2. Increased digestive problems.
 3. Skin problems.
 4. Reduced immunity infections.
 5. Anxiety, depression.
 6. Irritability.
 7. Fatigue.
 8. Loss of job satisfaction/commitment.
 9. Increased accidents.
 10. Substance abuse - alcohol & cigarettes.

HOISTS

1. Q. *How often should all parts of cranes and lifting machines be thoroughly examined?*
A. Every 12 months.
2. Q. *What is required to be marked on every lifting machine?*
A. Safe Working Load (S.W.L.)
3. Q. *What is necessary if a jib can be raised and lowered?*
A. An automatic S.W.L. indicator or a chart indicating S.W.L.s.
4. Q. *How should a liftway be protected?*
A. By a substantial enclosure fitted with gates.
5. Q. *What is essential about the fastening of a lift gate?*
A. It must be an interlocking device.
6. Q. *What has to be marked on every hoist or lift?*
A. The maximum working load.
7. Q. *What is necessary for the protection of a hoistway or liftway in respect of limiting the escalation of accidents?*
A. It must be completely enclosed with fire resisting materials.
8. Q. *What is specially required on a hoist for carrying persons?*
A. An automatic device to prevent over-run.
9. Q. *How does a crane driver know what to do?*
A. There is a special code of signals.
10. Q. *Should a mobile crane be operated on a gradient?*
A. No, it should always be level.
11. Q. *Under what condition can a person ride on the top of a cage in a hoist well?*
A. Only if he has full control of the movement of the cage.

HOISTS

12. Q. *If a crane driver can not see the load to be lifted, who directs his actions, and by what method?*
- A. The slinger
By use of approved hand signals or appropriate radio communication.
13. Q. *Who may drive a Tower Crane?*
- A. A trained and competent person over 18 years of age in possession of a CSCS Registration Card.
14. Q. *What does the term slewing mean in relation to a crane?*
- A. The rotary motion of a crane jib or load about the centre of rotation.
15. Q. *What does the term "Luffing" or "Jibbing" mean in relation to a crane?*
- A. The angular motion of a crane jib in a vertical plane to change the hook radius.
16. Q. *What is the best method of conveying instructions to crane drivers?*
- A. By Approved Hand Signals or radio communication.
17. Q. *In normal circumstances if the load on the forks of a forklift truck obscures the drivers view, what should the driver do?*
- A. Travel in reverse and look in the direction of travel.
18. Q. *Give four main safety requirements of a hoist or a lift?*
- A. 1. Good mechanical construction.
2. Sound Material.
3. Adequate strength.
4. Properly maintained.
19. Q. *Give the two important points relating to the interlocking system on a hoist or a lift?*
- A. 1. The gates can be opened only when the cage is at the landing.
2. The cage will not move if the gates are not closed.
20. Q. *a person is on the track of an overhead travelling crane within what distance must the crane not approach him?*
- A. 20 feet.(6m)

21. Q. Give four examples of lifting machines?

- A. 1. Crane.
2. Crab.
3. Winch.
4. Teagle.
5. Gin wheel.
6. Fork lift.

22. Q. What extra hazard is there in using tower cranes, not normally met with ordinary mobile cranes, and what should be fitted in relation to same?

- A. High Winds. Wind speed alarms/indicators should be fitted.

23. Q. In relation to cranes, What is a fly-jib?

- A. A detachable auxiliary jib fitted at the end of the main jib.

24. Q. What is meant by the term Safety Ropes or Jib Arresters in relation to cranes?

- A. They are ropes, usually two, fitted between the underside of the jib and the crane to prevent whip back of the jib in the event of the sudden release of the load.

25. Q. On what type of crane would you find a "Radius-Load Indicator" and what is its purpose?

- A. On a jib crane. - To show the maximum load that can be lifted in relation to its jib angle.

26. Q. What does the term counterbalance mean when referring to the jib of a tower crane?

- A. It is the weight added to the short end of the jib to balance the longer end of the jib.

27. Q. Name four precautions to be taken when slinging a load?

- A. 1. Check the weight to be lifted.
2. Ensure the lifting machine and tackle are adequate and in good condition.
3. Position the slings to get a balanced and secure lift.
4. Watch out for trapping hazards.
5. Keep out from under the load.

HOISTS

28. Q. *Why should a forklift truck have its forks lowered, give two reasons for this (a) when loaded and (b) when unloaded?*
- A. (a) 1. To lower the centre of gravity.
2. To give the driver a clear view.
- (b) 1. To release pressure on lifting chains.
2. This is the safest position.
29. Q. *In the event of an accident causing damage to a forklift truck, what four procedures do you follow?*
- A. 1. Stop the truck.
2. Bring the load to a safe position.
3. Switch off and immobilise truck.
4. Report immediately to your superior.
30. Q. *When is it permissible to exceed the Safe Working Load of a lifting machine?*
- A. When test weights are being applied, under the supervision of a competent person, to determine the safety of the machine.
31. Q. *When lifting irregular edged equipment with a crane and wire slings, what precautions must be taken in relation to the slings?*
- A. The slings must be protected from possible cuts or nips on sharp edges of the equipment being lifted.
32. Q. *When you hire a crane and driver for work on your site, who is responsible for checking the validity of the crane test certificate and lifting tackle test certificate?*
- A. You or your agent.
33. Q. *In order to comply with Current legislation and guidance how often must a Fork lift truck, including interchangeable accessories, be thoroughly examined?*
- A. Every 12 Months

INDUSTRIAL DISEASES

1. **Q. *Name two respiratory diseases that have been associated with foundry operations?***
 - A. 1. Silicosis.
 2. Pneumoconiosis.

2. **Q. *Name two common substances used in the home that can cause dermatitis?***
 - A. 1. Detergents.
 2. Paints.
 3. Thinners or solvents.
 4. Petrol.
 5. Oils.

3. **Q. *What is the chief danger for a person who is continually handling Epoxy Resins?***
 - A. Dermatitis.

4. **Q. *What diseases may be caused by lack of care when using lubricating oils & cutting oils?***
 - A. Dermatitis; Cutting oil is a suspect Carcinogen.

5. **Q. *Why wear gloves when handling cement?***
 - A. To prevent Dermatitis.

6. **Q. *If any skin trouble is noticed, what should you do?***
 - A. Report to the First Aid Department, Doctor, or Nurse at once.

7. **Q. *Give two important precautions when using synthetic resins?***
 - A. 1. Keep them off the skin.
 2. Remove from the skin immediately if splashed.
 3. Keep tools perfectly clean to prevent skin contamination.

8. **Q. *Is dermatitis limited to work in the factory?***
 - A. No, it can be caused by the misuse of substances in the home.

9. **Q. *Give two ways to prevent dermatitis in the home?***
 - A. 1. Wear gloves.
 2. Wash and dry hands.
 3. Keep out of contact with suspect substances.

INDUSTRIAL DISEASES

10. Q. *Name two dusts that are most harmful to health and have been associated with fire protection and metal cleaning respectively?*
- A. 1. Asbestos.
2. Silica.
11. Q. *What is the critical control of harmful dusts?*
- A. Removal at source.
12. Q. *What is the best way to avoid dermatitis?*
- A. Each time you break off work, wash hands, arms, and face thoroughly with soap and water.
13. Q. *What is thought to cause the high incidence of nose cancer in wood workers?*
- A. Wood dust particles, particularly hard woods. It is uncertain whether it is the size, shape, or chemical composition.
14. Q. *What is the most common work related disease?*
- A. Occupational Dermatitis.
15. Q. *Give another name for Sensitivity Dermatitis?*
- A. Allergic Dermatitis.
16. Q. *Dermatitis is a non-infectious inflammatory skin condition, caused by contact with chemicals or physical agents. Name the two categories of occupational dermatitis?*
- A. 1. Contact Dermatitis.
2. Sensitisation Dermatitis.
17. Q. *What four actions could you take to prevent dermatitis?*
- A. 1. Avoid contact with dangerous materials.
2. Find a substitute material, non-dermatic if possible.
3. Wear protective clothing.
4. Use barrier creams.
5. Increase the degree of personal hygiene.

18. Q. *When working with possible sensitising materials, name 4 ways of preventing infection?*

- A. 1. Wear protective gloves.
2. Wash and dry the hands carefully.
3. Use an appropriate barrier cream.
4. Avoid unnecessary contact.
5. Change to a less hazardous material if possible.

19. Q. *Give four precautions to be taken if working in an oily occupation?*

- A. 1. Wash overalls regularly.
2. Do not put oily rags in pockets.
3. Inspect the body regularly.
4. Maintain a high standard of personal hygiene.

20. Q. *Name four substances in the home that may cause dermatitis?*

- A. 1. Detergents.
2. Paints.
3. Thinners.
4. Petrol and Oils.
5. Bleaches.

21. Q. *Give four methods of controlling the risk of lead poisoning?*

- A. 1. By the removal of dust and fume.
2. Control of handling.
3. Control of eating and smoking.
4. The wearing of protective clothing.
5. Good washing accommodation.

22. Q. *What is banned from blasting by abrasives?*

- A. Sand or any substance containing free silica.

23. Q. *Name the 4 stages in the practice of Occupational Hygiene?*

- A. 1. Recognition.
2. Measurement.
3. Evaluation.
4. Control.

24. Q. *What occupational disease is associated with the cotton industry?*

- A. Byssinosis.

INDUSTRIAL DISEASES

25. Q. *Give six causes of industrial diseases which are reportable to the H.S.A.?*
- A. 1. Lead.
2. Phosphorus.
3. Arsenical.
4. Mercurial.
5. Anthrax.
6. Manganese.
7. Compressed Air.
26. Q. *V.W.F. is a prescribed industrial disease. (a) what does V.W.F. stand for, (b) by what other name is it known, and (c) how does it affect the body?*
- A. (a) Vibration White Finger.
(b) Occupational Raynauds Syndrome.
(c) Damage to peripheral blood vessels and nerves.
27. Q. *Name six conditions or materials which cause occupational skin troubles?*
- A. 1. Skin damage due to friction or pressure.
2. Micro-organisms from wood or plants.
3. Heat, Cold, Excessive Sunlight.
4. Chemicals - Alkalis and Acids.
5. Oils and Petroleum Products.
6. Adhesives, Hardeners and Dyes.
7. Solvents and Cleaners.

LADDERS

1. **Q. Give two faults that can develop in a portable ladder?**
 - A. 1. Shakes in the stringers.
 2. Loose rungs.
 3. Warping.

2. **Q. What height should a ladder rise above and beyond the place of landing?**
 - A. One metre.

3. **Q. How often should a ladder be inspected?**
 - A. It should be inspected frequently.

4. **Q. When carrying a ladder approaching a corner, what two precautions should you take?**
 - A. 1. Keep front end above head height.
 2. Take a wide turn.

5. **Q. How many hands should a person use when going up or down a ladder?**
 - A. Both.

6. **Q. Name two ways of how to raise or lower materials or tools when using a ladder?**
 - A. 1. Hand line.
 2. Pockets.
 3. Belt.
 4. Shoulder sling.

7. **Q. In what atmosphere should ladders be stored?**
 - A. Cool and dry.

8. **Q. Should you ever work on the underside of a ladder?**
 - A. No.

9. **Q. What two actions are necessary if you notice a defect in a ladder?**
 - A. 1. Report it at once.
 2. Do not use it.

LADDERS

10. Q. *What precaution must be taken if a ladder has to be set up in front of a door that opens towards the ladder?*
- A. The door should be locked for the duration of the work.
11. Q. *What is the correct working angle for a ladder?*
- A. 75 degrees or one foot out for every four foot in height.
12. Q. *If the person doing a job from a ladder requires assistance, is it safe for a second person to stand on the ladder?*
- A. No - a second ladder should be used.
13. Q. *Give two safety precautions to be observed when using ladders?*
- A. 1. Ensure the ladder is free from defects.
2. Ensure it is long enough for the job.
3. Ensure it is placed at the correct angle on a firm base.
4. Ensure it is lashed at top and footed at bottom if required.
14. Q. *All ladders should be inspected on purchase, and again when issued by the controller of same. Who else should inspect them and when?*
- A. The user before use.
15. Q. *It a good idea to paint a wooden ladder in order to protect it?*
- A. No - Wooden ladders should never be painted as the paint may cover defects in the wood.
16. Q. *If ladders are stored horizontally, what is the correct way to support them?*
- A. On the lower stiles.
17. Q. *While lashing a ladder at the top what action is necessary?*
- A. The ladder should be footed by a second person.
18. Q. *Some times one has to turn around on a ladder in order to carry out work on a job. Is it safe to descend the ladder in this way?*
- A. No. - You must always face the ladder while descending.
19. Q. *What is the greatest hazard of using an aluminium ladder?*
- A. It is a conductor of electricity.

LADDERS

20. Q. *May ladders be used on scaffolding towers to gain extra height?*
- A. No.
21. Q. *Under what condition should a ladder be fitted with suction pads?*
- A. When working from smooth or highly polished or tiled floors.
22. Q. *Give four defects that you might find in a wooden ladder to stop its use?*
- A. 1. Missing Rungs
2. Defective Rungs.
3. Signs of Warping.
4. Rung supported by nails.
5. Insecure tie rod.
6. Cracked styles.
23. Q. *Give four conditions that must be observed to avoid having accidents when using ladders?*
- A. 1. The ladder must be long enough for the job.
2. The ladder should extend one metre beyond the point of landing.
3. The ladder should be pitched at an angle of 75 degrees.
4. Only one person should be on the ladder at a time.
5. The ladder should be the right way up.
6. The ladder should be secured top and bottom.
24. Q. *Some wooden ladders are wire reinforced on one side of the stiles, when positioning this type of ladder where should the wire be situated and why?*
- A. The wire should be at the back of the stile, so that it is in tension when the ladder is in use.
25. Q. *Aluminium ladders should be inspected monthly. Give four points that should be checked?*
- A. 1. Look for distortion.
2. Look for slackness of rungs in stiles.
3. Check that fitments are secure and serviceable.
4. Look for corrosion.
5. Check for sharp edges on stiles or rungs.
6. Check that anti-slip pads are in good order.

LADDERS

26. Q. *Name four hazards that can develop in a fixed iron stairs?*
- A. 1. Corrosion of threads.
2. Corrosion of handrail and fixings.
3. Slippery or worn threads.
4. Staircase can become iced up if exposed to weather.
27. Q. *What criteria enables an employer to justify the use of a ladder after a risk assessment. Give two?*
- A. A ladder may be used providing the risk assessment has determined that:
(a) more suitable work equipment is not justified
(b) the duration of the work will be short
(c) existing features on the site are such that they cannot be altered.
28. Q. *How can a portable ladder be prevented from slipping. Give two?*
- A. (a) securing the stiles at or near their upper or lower ends
(b) effective anti-slip or other effective stability devices
(c) any other arrangement of equivalent effectiveness.
29. Q. *When you are using extension ladders how many rungs should you overlap in the three following situations, (a) up to 16', (b) 17' to 20', and (c) 21' and over?*
- A. (a) up to 16'. Two Rungs.
(b) 17' to 20'. Three Rungs.
(c) 21' and over. Four Rungs.
30. Q. *Give six precautions when using a ladder?*
- A. 1. Long enough for the job.
2. Correct angle.
3. Lashed at top or bottom.
4. One man only on ladder.
5. Use the right way up.
6. Use the right way round.
7. Use ladder without defects.

LEGAL/LEGISLATION

1. Q. *Has a Safety Officer any responsibility to see that safety measures are complied with?*
A. Yes, as an agent of management with delegated authority.
2. Q. *Can management delegate Responsibility and Authority?*
A. No, only Authority.
3. Q. *Has the worker any responsibilities?*
A. Yes, and these are specified in legislation.
4. Q. *Can a worker be prosecuted under the Safety, Health and Welfare at Work 2005 Act?*
A. Yes.
5. Q. *In the SAFETY HEALTH AND WELFARE AT WORK ACT 2005, in what section is a "Prohibition Notice" cited?*
A. Section 67.
6. Q. *In the SAFETY HEALTH AND WELFARE AT WORK ACT 2005, in what section is an "Improvement Plan" cited?*
A. Section 65.
7. Q. *What notice must a Health and Safety Authority Inspector give before entering a premises for the purpose of an inspection?*
A. None.
8. Q. *In terms of persons at work, what is a reportable accident?*
A. A fatality or accident which prevents a person from performing their normal work duties of their employment for more than three consecutive days.
9. Q. *Do EU directives on major accident hazards cover work off shore?*
A. No.
10. Q. *What is the official short title of the 2005 Safety Act?*
A. SAFETY HEALTH AND WELFARE AT WORK ACT 2005

11. Q. *In the SAFETY HEALTH AND WELFARE AT WORK ACT 2005, in what section is an "Improvement Notice" cited?*
- A. Section 66.
12. Q. *In the SAFETY, HEALTH AND WELFARE AT WORK 2005 Act, what main general duty is placed on the employer under Section 8, with regard to place of work?*
- A. Ensuring, as far as is reasonably practicable, the safety, health and welfare at work of his or her employees.
13. Q. *In the SAFETY, HEALTH AND WELFARE AT WORK 2005 Act, what duty is placed on the employer under Section 8, with regard to systems of work?*
- A. The employer must provide systems of work that are:-
planned, organised, performed, maintained and revised so as to be safe and without risk to health.
14. Q. *In the SAFETY, HEALTH AND WELFARE AT WORK 2005 Act, what duty is placed on the Employer under Section 8 with regard to Instruction, Training and Supervision?*
- A. Employer must ensure that instruction training and supervision is provided in a form, manner and, as appropriate, language that is reasonably likely to be understood by the employee concerned.
15. Q. *Current legislation and guidance dealing with personnel protective equipment lays down that it must meet four particular criteria. Name the criteria?*
- A. 1. Be appropriate to the risks involved without itself causing increased risk.
2. Take account of existing conditions at the workplace.
3. Take account of ergonomic requirements and employees' state of health.
4. Fit the wearer correctly after any necessary adjustments.
16. Q. *Current legislation and guidance dealing with personnel protective equipment lays down that where its use is necessary and in particular the period for which it is worn, its use must be determined on the basis of four criteria. Name the criteria?*
- A. 1. The seriousness of the risk.
2. Frequency of exposure to the risk.
3. The characteristics of the workstation of each worker.
4. The adequacy of the equipment.

17. Q. *What type of notice may be issued by an inspector under the Safety, Health and Welfare at Work Act, 2005 where he is of the opinion that a person is contravening or has contravened any of the relevant statutory positions?*
- A. Improvement Notice.
18. Q. *What may an Inspector of the Authority request to be prepared and submitted where s/he is of the opinion that there is occurring or likely to occur any activity which involves or is likely to involve a risk to the safety, health or welfare of persons.*
- A. An Improvement Plan.
19. Q. *What type of notice may be issued by an inspector under the Safety, Health and Welfare at Work Act, 2005 where he is of the opinion that the activities involve a risk of serious personal injury to persons?*
- A. Prohibition Notice.
20. Q. *What may be demanded by written direction of an inspector under the Safety, Health and Welfare at Work Act, 2005 where he is of the opinion that the activities involve a risk to safety and health of persons?*
- A. Improvement Plan.
21. Q. *As regards what four specific areas should every electrical joint and connection be of adequate construction so as to prevent danger?*
- A. 1. Conductance.
2. Insulation.
3. Mechanical Strength.
4. Protection.
22. Q. *What are the two requirements for a transformer supplying electricity to portable equipment at a voltage not exceeding 125 volts A.C.?*
- A. 1. It must be of the double wound type.
2. The centre point of the lower voltage or secondary winding must be connected to earth.
23. Q. *What does the legal term "tort" mean?*
- A. It is a civil wrong arising from the breach of a duty imposed by law or the infringement of a right given by law redressable by an action for damages e.g., an action for negligence.

24. Q. *Current Health and Safety legislation and guidance includes what under the definition of "intoxicant"?*
- A. Alcohol and drugs and any combination of drugs or of drugs and alcohol.
25. Q. *Where in current legislation is a dangerous occurrence defined?*
- A. The Safety, Health and Welfare at Work Act 2005. (Section 2 - Interpretation).
26. Q. *What does the legal term "ubi jus ibi remedium" mean?*
- A. Where there is a right, there is a remedy.
27. Q. *What is a 'substance' as defined in the Safety Health and Welfare at Work Act 2005?*
- A. A substance is any natural or artificial substance, preparation or agent, in solid or liquid form or in the form of a gas, vapour or micro organism.
28. Q. *What mandatory forms would be used to report an accident or dangerous occurrence?*
- A. IR.1 Incident Report Form
IR.3 Form of Notice of Dangerous Occurrence.
29. Q. *When must an accident be reported, and how long do you have to report it?*
- A. Where an accident occurs at a place of work as a result of which any person carrying out work at that place of work dies or is prevented from performing his or her normal work for more than three consecutive days, excluding the day of the accident but including any days which would not have been working days,

As soon as possible
30. Q. *According to the requirements of Schedule 4 of the Safety, Health and Welfare at Work Act 2005, the quorum for a meeting of a Safety Committee shall be fixed by the committee, but must not be not less than what number?*
- A. 3.

31. Q. *Name four of the general welfare requirements under the Safety, Health and Welfare at Work (General Application) Regulations 2007?*
- A. 1. Workplace kept clean by regular cleaning (at least once per week).
2. Remove rubbish on a daily basis.
3. Provide adequate sitting facilities.
4. Provide a supply of drinking water.
5. Provide facilities for taking meals.
32. Q. *What is the principal legal difference in the area of Employers Liability insurance between Ireland and the United Kingdom?*
- A. The requirement for Employers Liability Insurance is a legal requirement in the United Kingdom and it is not a legal requirement in Ireland.
33. Q. *What does the legal term 'ex parte' mean. It is often used when the enforcing authorities seek high court orders. This is usually referred to as an Ex Parte High Court Order?*
- A. It means 'without notice'. The authorities seek the high court order without the other side been present at the time.
34. Q. *When the 1999 European Directive on Chemical Preparations was implemented. What was the major change from previous directives?*
- A. For the first time environmental effects were included in the classification and labelling of a chemical preparation.
35. Q. *A European Communities Directive which is commonly known as the 'ADR' Directive deals with safety in respect of what commercial activity?*
- A. The transport of dangerous substances by road.
36. Q. *A European Communities Directive which is commonly known as the 'Safety Adviser' Directive is concerned with what work activity?*
- A. The transport of dangerous substances.
37. Q. *A European Communities Directive which is commonly known as the 'Seveso 2' Directive deals with control of what activities?*
- A. Control of major accident hazard involving dangerous substances.
38. Q. *A European Communities Directive which is commonly known as the 'RID' Directive deals with control of what activities?*
- A. The transport of dangerous substances by rail.

39. Q. *The Second Schedule of the 2007 General Application Regulations presents a non exhaustive guide list of activities and sectors of activity which may require the provision of personal protective equipment. Name three of the six work activities listed in the Sixth Schedule in respect of requiring ear protectors under the Hearing Protection Section?*
- A. 1. Work with metal presses.
 2. Work with pneumatic drills.
 3. Work with turbines.
 4. The work of ground staff at airports.
 5. Pile-driving work.
 6. Wood and textile working.
40. Q. *The Second Schedule of the 2007 General Application Regulations presents a non exhaustive guide list of activities and sectors of activity which may require the provision of personal protective equipment. Name the three activities listed in the Sixth Schedule in respect of the provision of leather aprons?*
- A. 1. Welding.
 2. Forging.
 3. Casting.
41. Q. *The Second Schedule of the 2007 General Application Regulations presents a non exhaustive guide list of activities and sectors of activity which may require the provision of personal protective equipment. Name the three activities listed in the Sixth Schedule in respect of the provision of safety harness?*
- A. 1. Work on scaffolding.
 2. Assembly of prefabricated parts.
 3. Work on masts.
42. Q. *The Second Schedule of the 2007 General Application Regulations presents a non exhaustive guide list of activities and sectors of activity which may require the provision of personal protective equipment. Name three of the four work activities listed in the Sixth Schedule in respect of the provision of safety ropes?*
- A. 1. Work in high crane cabs.
 2. Work in high cabs of warehouse stacking and retrieval equipment
 3. Work in high sections of drilling towers.
 4. Work in shafts and sewers.

43. Q. *Under Current Health and Safety legislation and guidance, what two things may the Health and Safety Authority do if it is not satisfied with the adequacy of a report that it has requested in respect of an examination and test of an article associated with an accident or dangerous occurrence?*
- A. 1. Require the relevant person to have the article re-examined at his expense.
2. It may nominate the examiner.
44. Q. *Current Health and Safety legislation and guidance defines Personal Protective Equipment but exclude five particular categories. Name three of these categories?*
- A. 1. Ordinary working clothes and uniforms not specifically designed to protect the safety and health of an employee.
2. Personal protective equipment for the purpose of road transport.
3. Sports equipment.
4. Self-defence equipment or deterrent equipment.
5. Portable devices for detecting and signalling risks and nuisances.
45. Q. *Current Health and Safety legislation and guidance dealing with sanitary facilities requires that if the work leads to heavy contamination of hands or forearms, the number of washbasins need to be increased to what number?*
- A. 1 per 10 persons at work up to 50 persons and 1 per 20 thereafter.
46. Q. *Within the 2005 Act what are the main requirements an employer must fulfil in relation to Section 11 (1) regarding Emergencies and Serious and Imminent Dangers?*
- A. 1. Provide the necessary measures for first aid, fire-fighting and evacuation
2. Arrange for contact with the appropriate emergency services in implementing plans, procedures and measures:
3. Designate employees to implement such plans etc.
4. Ensure adequate numbers of designated employees
5. Ensure adequate training and equipment
47. Q. *Within the 2005 Act what duty is placed on an employee under Section 13 in relation to training?*
- A. A. (a) Attend such training and undergo such assessments as may be reasonably required by the employer
(b) Having regard to the training and instruction given by the employer, an employee must make correct use of any article or substance provided, including protective clothing or equipment.

48. Q. *List the 6 items which should be specified by the employer in the Safety Statement?*
- A. 1. The hazards identified, and risks assessed.
 2. The protective and preventative measures and resources provided.
 3. Plans and procedures to be followed in the event of emergency or serious or imminent danger.
 4. Duties of employees and other person with responsibilities regarding safety, health and welfare.
 5. The names and titles of responsible persons.
 6. The arrangements regarding consultation, safety representatives and safety committee if appointed
49. Q. *Within 2005 Act under Section 27 Paragraph 2, what does 'penalisation' include? Give 3 of the 6 listed in the Act?*
- A. 1. Suspension, lay-off or dismissal.
 2. Demotion or loss of opportunity for promotion.
 3. Transfer of duties, change of location of place of work, reduction of wages or change in working hours.
 4. Imposition of any discipline, reprimand or other penalty.
 5. Coercion
 6. Intimidation.
50. Q. *Under Section 37 of the 2005 Act, the Minister can appoint 11 'ordinary members' to the Board of the health and Safety Authority. From what groups or areas are these ordinary members chosen and how many each?*
- A. Employees' organisations (3 members).
 Employers' organisations (3 members).
 Other persons (5 persons) that the Minister deems appropriate, including one from the Department within which the authority operates.
51. Q. *What is the maximum fine and imprisonment term that can be fixed in the District Court?*
- A. For breaches of Regulations under the 2005 Act, the District Court can fine the accused up to €3000 and /or sentence them up to 6 months in prison.
52. Q. *In the 2005 Act name three of the seven occurrences that are interpreted as 'dangerous occurrences' in relation to Work Equipment?*
- A. 1. Collapse
 2. Overturning
 3. Failure
 4. Explosion

5. Bursting
6. Electrical short-circuit discharge or overload
7. Any malfunction.

53. Q. *In current Health and Safety legislation and guidance what are the main requirements an employer must fulfil in relation to Emergencies and Serious and Imminent Dangers?*

- A. 1. Provide the necessary measures for first aid, fire-fighting and evacuation.
2. Arrange for contact with the appropriate emergency services in implementing plans, procedures and measures:
3. Designate employees to implement such plans etc.
4. Ensure adequate numbers of designated employees
5. Ensure adequate training and equipment.

54. Q. *What duty is placed on an employee under the 2005 Act Section 13 Paragraph 1 (g) in relation to training?*

- A. Having regard to the training and instruction given by the employer, an employee must make correct use of any article or substance provided, including protective clothing or equipment.

55. Q. *With regard to the 2005 Act Section 19 Paragraph 3, when should a risk assessment be reviewed?*

- A. When there has been a significant change in the matters to which it relates
If there is any reason to believe it is no longer valid.

56. Q. *Under current Health and Safety legislation to which of the following persons can an Inspector issue an 'on-the-spot fine'?*

Employers? Y/N

Employees? Y/N

Persons in control of workplaces? Y/N

Importers? Y/N

Suppliers? Y/N

Agents? Y/N

- A. (ANSWER IS 'YES' IN EACH CASE).

57. Q. *Under the 2005 Act Section 8 Paragraph 2 (b) an employer must make arrangements to prevent 'improper conduct'. What is meant by 'improper conduct' in this context. List three?*

- A. • Bullying
- Horseplay

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- Harassment
- Any behaviour likely to endanger the safety, health or welfare at work of employees.

58. Q. *Under the 2005 Act Section 10 Paragraph 3 it is the duty of the employer to provide training for his or her employees under what circumstances. List three?*

- A.
 - On recruitment.
 - On transfer or change of task.
 - On the introduction of new equipment or systems of work or changes to either.
 - On the introduction of new technology.

59. Q. *If an employee feels they have been penalised for acting under safety and health legislation, to whom can the employee make a complaint?*

- A. Initially to a Rights Commissioner, and upon the decision of the Rights Commissioner, the employee may appeal to the Labour Court.

60. Q. *Under current Health and Safety legislation how is First Aid defined?*

- A. First Aid means:-

(a) In a case where a person requires treatment from a registered medical practitioner or a registered general nurse, treatment for the purpose of preserving life or minimising the consequences of injury or illness until the services of such a practitioner or such a nurse are obtained.

(b) In a case of a minor injury which would otherwise receive no treatment or which does not need treatment by a registered medical practitioner or registered general nurse, treatment of such an injury;

61. Q. *The European Commission produced a Guide on Risk Assessment at Work in 1996 which in its first Annex provided illustrative examples of work situations and activities requiring risk assessment. Can you name six of the seven included under exposure to physical agents?*

- A.
 1. Exposure to electromagnetic radiation (heat, light, x-ray, ionising radiation).
 2. Exposure to lasers
 3. Exposure to noise, ultrasounds
 4. Exposure to mechanical vibrations
 5. Exposure to hot substances/media
 6. Exposure to cold substances/media
 7. Presence of fluids under pressure (compressed air, steam, liquids).

62. Q. *The European Commission produced a Guide on Risk Assessment at Work in 1996 which in its first Annex provided illustrative examples of work situations and activities requiring risk assessment. Can you name the six included under exposure to substances or preparations hazardous to health and safety?*
- A. 1. Inhalation, ingestion and skin absorption of a material hazardous to health (including aerosols and particulates).
 2. Use of flammable and explosive materials.
 3. Lack of oxygen (asphyxia).
 4. Presence of corrosive substances.
 5. Reactive/unstable substances.
 6. Presence of sensitizers.
63. Q. *The European Commission produced a Guide on Risk Assessment at Work in 1996 which in its first Annex provided illustrative examples of work situations and activities requiring risk assessment. Can you name the six included under the use of electricity?*
- A. 1. Electrical switchgear.
 2. Electrical installations, e.g. ring mains, lighting circuits
 3. Electrically-operated equipment, controls, insulation
 4. Use of portable electric tools
 5. Fire or explosion initiated by electrical energy
 6. Overhead electric lines.
64. Q. *Name three of the recent Advisory Committees or Task Forces reporting to the H.S.A. ?*
- A. • Construction Advisory Committee.
 • Dangerous Substances Advisory Committee.
 • Health Advisory Committee.
 • Agricultural Task Force.
 • Bullying Task Force.
65. Q. *Current Health and Safety legislation and guidance ensures the protection of 3 categories of employees in relation to childbirth. Name them?*
- A. 1. Those who are pregnant.
 2. Those who have recently given birth.
 3. Those who are breast feeding.

66. Q. *Unless a risk assessment indicates that there will be no injury to the employee or the developing child, a pregnant employee must not work with 5 specific hazards. What are they?*
- A. 1. Pressurisation chambers.
2. Rubella – unless adequately immunised.
3. Toxoplasma.
4. Lead and lead substances.
5. Underground mine work.
67. Q. *The Safety, Health and Welfare at Work (General Application) Regulations of 2007 are arranged in eight parts. Name the parts?*
- A. 1. Interpretation and General.
2. Workplace and Work equipment.
3. Electricity.
4. Work at Height.
5. Physical Agents
6. Sensitive Risk Groups
7. Safety Signs and First Aid.
8. Explosive Atmospheres at places of Work.
68. Q. *Schedule 3 of the Safety, Health and Welfare at Work Act 2005 outlines the nine general principles of prevention necessary for the safety and health protection of employees. List eight of these general principles?*
- A. 1. Avoidance of risk.
2. Evaluation of unavoidable risks.
3. Combating of risks at source.
4. Adoption of work to individual.
5. Adapting of workplace to technical progress.
6. Replacement of dangerous by non-dangerous or less dangerous.
7. Develop an adequate prevention policy.
8. Priority of collective protective measures over individual protective measure.
9. Give appropriate training and instruction.
69. Q. *Current Health and Safety legislation and guidance highlights seven aims of the safety statement. Name four of these aims?*
- A. 1. To involve management up to the highest level in a clear programme of action.
2. To stimulate action to ensure compliance with the statutory safety and health provisions.
3. To identify hazards and to practise remedial action which is based on the risk of injury to exposed persons.

4. To identify and assign clear responsibilities in relation to safety and health matters.
5. To ensure systematic follow-up of problems once identified.
6. To ensure that resources are assigned to safety and health.
7. To gain the commitment of all persons in the workplace.

70. Q. *Current Health and Safety legislation and guidance lists the Health and Safety Authority's functions to be twelve fold. Name eight of these indicated?*

- A.
1. To promote, encourage and foster the prevention of accidents, dangerous occurrences and personal injury at work in accordance with the relevant statutory provisions,
 2. To promote, encourage, foster and provide education and training in the safety, health and welfare of persons at work,
 3. To encourage and foster measures promoting the safety, health and welfare of persons at work,
 4. To make adequate arrangements for the enforcement of the relevant statutory provisions,
 5. To monitor, evaluate and make recommendations to the Minister regarding implementation and compliance
 6. To promote, encourage and foster co-operation with and between persons or bodies of persons
 7. To make any arrangements that it considers appropriate for providing information and advice on matters relating to safety, health and welfare at work,
 8. To make any arrangements that it considers appropriate in relation to research, surveys and studies
 9. To prepare and adopt a strategy statement and to monitor its implementation,
 10. To prepare and adopt a work programme,
 11. To comply with any directions in writing given by the Minister
 12. To give the Minister any information relating to the performance of its functions.

71. Q. *The guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 1 of Part 2: Workplace signals that for the purpose of these Parts "place of work" does not include five particular areas. Name four of these?*

- A.
1. Means of transport used outside the undertaking or a place of work inside a means of transport,
 2. Temporary or mobile work sites, including construction sites,
 3. Extractive industries,

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4. Fishing boats,
5. Fields, woods and land forming part of an agricultural or forestry undertaking but situated away from the undertaking's buildings.

LIFTS & LIFTING TACKLE

1. **Q. *What is meant by the letters S. W. L.?***
A. Safe Working Load.

2. **Q. *Name two items that can be defined as lifting accessories?***
A.
 1. clamps and similar attachments,
 2. chain slings,
 3. rope slings,
 4. rings,
 5. hooks,
 6. shackles,
 7. swivels,
 8. spreader beams,
 9. spreader frames
 10. any other item placed between lifting equipment and the load or on the load in order to attach it.

3. **Q. *What is necessary before any Lifting accessories can be taken into use for the first time?***
A. A valid certificate of test, issued by the supplier.

4. **Q. *How often must Lifting accessories be thoroughly examined?***
A. Every six months.

5. **Q. *Where is it necessary to keep particulars of Lifting accessory examinations?***
A. In a register of lifting equipment and lifting accessories .

6. **Q. *Would you anneal chains of malleable cast iron?***
A. No.

7. **Q. *Would you give heat treatment to hooks and swivels having ball bearings?***
A. No.

8. **Q. *What is meant by "patent defect"?***
A. A defect that can be seen.

9. **Q. *What is the best form of defence against accidents involving lifting accessories?***
A. Constant inspection.

LIFTS & LIFTING TACKLE

10. Q. *How should lifting accessories be stored when not in use?*
- A. On proper hooks or shelves in a dry place.
11. Q. *Do slingers require special instruction?*
- A. They should be fully instructed by a competent person before being allowed to sling a load.
12. Q. *Give two examples of where you would see the letters S.W.L. displayed?*
- A. 1. Lifting accessories.
2. Hoists.
3. Cranes.
4. Lifts.
13. Q. *In relation to lifting accessories what does the term "Safety Hook" mean?*
- A. A hook provided with a safety latch across the throat opening of the hook to prevent a sling being accidentally dislodged.
14. Q. *If a hook is not provided with a safety latch across the throat opening to prevent a sling being accidentally dislodged, what precautions can be taken?*
- A. The hook should be "Moused" i.e. lashed across the mouth.
15. Q. *Is it necessary for eyebolts to have the safe working load marked on them?*
- A. Yes - All lifting accessories must be so marked.
16. Q. *When using bulldog clips to secure a wire rope, how should the clips be fitted?*
- A. The "U" bolt should be on the dead line, the saddle on the load line.
17. Q. *When using bulldog clips to secure a wire rope, how many clips should be used?*
- A. Three bulldog clips should be fitted.
18. Q. *When using bull dog clips to secure a wire rope, by how much do bull dog clips reduce the S.W.L. of the wire rope?*
- A. By approximately one third of the S.W.L. rating.

LIFTS & LIFTING TACKLE

19. Q. *When using a shackle with a "Nut and Bolt" pin what is an important check when the nut is tight?*
- A. The pin should be free to rotate when the nut is tight.
20. Q. *Is a table showing the Safe Working Load of all lifting accessories required?*
- A. Yes, unless lifting accessories is so marked.
21. Q. *When checking the diameter of the bow or pin of a shackle for excessive wear, at what diameter should it be taken out of service?*
- A. In excess of 10% wear.
22. Q. *When using bull dog clips to secure a wire rope, how should the clips be fitted, how many clips should be used, by how much do bull dog clips reduce the S.W.L. of the wire rope?*
- A. 1. The "U" bolt should be on the dead line, the saddle on the load line.
2. Three bull dog clips should be fitted.
3. By approximately one third of the S.W.L. rating.
23. Q. *What might cause an item of lifting accessory to break even though the lifting accessory is in good condition and the load being lifted is within the Safe Working Load of the tackle?*
- A. The sudden application of a shock load.

MANUAL HANDLING

1. **Q. *What is the correct way to grip with the hands?***
 - A. Use the palms and roots of the fingers.

2. **Q. *If you were carrying a long pipe or ladder, what two things would you do at a corner?***
 - A. 1. Take it as wide as possible.
2. Keep the front end above head height.

3. **Q. *If a load has jagged edges what should you do?***
 - A. Remove the edges or wear gloves.

4. **Q. *Give two types of injuries that can be caused by Incorrect Methods of Manual Lifting?***
 - A. 1. Hernia.
2. Back-strain.
3. Sprained Ligaments.
4. Strained Muscles.

5. **Q. *Why practice correct handling. Give two reasons?***
 - A. 1. Because the muscles best suited for the job are used.
2. Because it reduces the strain.
3. It protects against sudden injury.

6. **Q. *What is the correct way to lift?***
 - A. Bend the knees, keep back straight, chin in, use strong thigh muscles.

7. **Q. *When handling a load name four points to observe before lifting?***
 - A. 1. Good grip available.
2. Check weight.
3. Look for sharp edges.
4. Watch for traps.

8. **Q. *What is most important with a large load even if light?***
 - A. It should not obscure the vision.

9. **Q. *Before moving a load what two general things should you do?***
 - A. 1. Size up the load.
2. Remove possible hazards.

MANUAL HANDLING

10. Q. *When handling heavy drums, cylinders etc. How do you use the body?*
- A. Use it as a counter balance to reduce muscular effort.
11. Q. *Give two reasons why you should bend your knees to lift?*
- A. So that leg muscles do the lifting
A good lifting posture can be adopted
The load can be reached without arching the spine.
12. Q. *List four points in the Kinetic Method for Manual Lifting Procedure?*
- A. 1. Ensure the object to be lifted is within your capability.
2. Take a balanced stance, close to the object.
3. Bend your knees.
4. Get a good grip.
5. Keep your back straight, tuck your chin in.
6. Lift gradually, using the leg muscles.
13. Q. *List four conditions or injuries that could be the result of using the incorrect Method for Manual Lifting?*
- A. 1. Early fatigue.
2. Trapped fingers or toes.
3. Strained muscles.
4. Sprained ligaments.
5. Hernias or ruptures.
6. Back injuries.
7. Fractures.
14. Q. *What is the recommended height to which one person should manually lift an object, and what should they do if they need to put it higher?*
- A. Chest Height - If the object needs to be placed higher, then unless the object is very light two people should do the task.
15. Q. *What does the acronym T.I.L.E. stand for?*
- A. Task, Individual, Load, Environment
16. Q. *Name the part of the spine that is most involved in manual handling?*
- A. Lumbar spine.

17. Q. *What specific legislation currently covers manual handling?*
- A. Safety Health and Welfare at Work (General Application) Regulations 2007 Part 2 Chapter 4 Manual Handling of Loads.
18. Q. *In relation to manual handling Schedule 3 of the Safety, Health and Welfare at Work (General Application) Regulations 2007 gives four examples where the physical effort may present a risk particularly of back injury. Can you name them?*
- A. 1. too strenuous,
2. only achieved by a twisting movement of the trunk,
3. likely to result in a sudden movement of the load, or
4. made with the body in an unstable posture.
19. Q. *List four body positions that should be avoided when lifting?*
- A. Bending
Twisting
Over-reaching
Being unsteady on your feet.
20. Q. *Name four muscle groups that are important for manual handling?*
- A. Hamstrings
Calves
Quadriceps
Abdominals
Lumbar spine.
21. Q. *List four risks from manual handling?*
- A. Risk of accidental injury
Risk of overexertion
Risk of cumulative damage.
22. Q. *Name four elements of fitness?*
- A. Strength
Aerobic
Flexibility
Endurance

23. Q. *Name two categories of controls that should be considered when manual handling tasks cannot be eliminated or avoided?*

- A. Engineering controls
Administrative controls
Work practice controls.

24. Q. *If four persons are required to lift an item of equipment. What is the recommended procedure. Give three essential requirements?*

- A. 1. All four should have a firm hold.
2. All four should have a firm stance.
3. One person should co-ordinate the lifting effort so that all four persons lift together with the weight evenly distributed.
4. Work with people of similar height if possible

25. Q. *List six of the eight safer handling principles?*

- A. Assess the area and the load
Adopt a broad stable base
Keep the back straight
Bend the knees
Get a firm grip
Keep the load close to the body
Keep arms in line with the trunk
Turn the feet in the direction of movement.

26. Q. *List three functions of the spinal discs?*

- A. Absorb shock
Connect the vertebrae
Permit movement
Allow space for nerves to emerge.

27. Q. *Other than the weight of the load, give six other factors that should be considered when handling a load?*

- A. Size or shape of the load
Carrying distance
Lift level
Environment factors
Degree of twisting involved
Work rate.

28. Q. *Current Health and Safety legislation and guidance highlights that in respect of manual handling and assessing the needs of sensitive risk groups that special attention needs to be given to vulnerable groups of which six examples are given. Name four of these groups?*
- A. 1. Young workers, who through lack of experience may be at higher risk.
2. Pregnant women, who are covered also by separate regulations.
3. People with disabilities, who may be particularly vulnerable in the early days at a new task.
4. New or inexperienced workers.
5. Older workers who may be less agile or alert.
29. Q. *In relation to the manual handling of a load there are nine essential points in respect of the characterising of the load that may present a risk particularly of back injury. Can you name eight?*
- A. 1. Load too heavy.
2. Load too large.
3. Unwieldy Load.
4. Load difficult to grasp.
5. Unstable Load.
6. Load contents likely to shift.
7. Load has to be held at distance from trunk of body.
8. Load requires bending or twisting of trunk.
9. Contours of load creating further hazard in event of collision.

MECHANICAL HAZARDS

1. **Q. *In the context of work equipment what is a trap?***
 - A. A trap is where a part of the body can get caught in part of the mechanism and cannot be removed without injury.

2. **Q. *With plant that has restricted visibility, particularly while carrying out reversing operations, suitable warning devices, or sight seeing devices must be fitted, list four such devices?***
 - A.
 - CCTV
 - flashing beacons
 - convex mirrors
 - audible alarm.

3. **Q. *List four means of power transmission?***
 - A.
 - A simple shaft or direct drive
 - Power Take Off (PTO)
 - Speed changing mechanism
 - Gears
 - Belts and pulleys
 - Chains and sprockets.

4. **Q. *Other than Fixed guards, Distance guards, Adjustable guards and Interlocked guards, name four types of guards?***
 - A. Automatic guards
Self-adjusting guards
Trip guards
Two-hand control devices.

5. **Q. *When may it be required to remove or override a guard. Give four instances?***
 - A. May be required during:
 - Maintenance operations
 - Lubrication
 - Tool setting
 - Gauging
 - Removing jams.

6. **Q. *What are trip mechanisms / interlocks?***
 - A. Devices that:
 - Automatically cut the power from the machine
 - Operate an emergency brake to stop the machine, if the guard is opened while the machine is operating.

MECHANICAL HAZARDS

7. Q. *Name four types of safety proximity detection devices?*
- A.
 - Photoelectrical sensors (light curtains)
 - Ultrasonic detectors
 - Infrared sensors
 - Electrical pressure mats
 - Mechanical devices such as trip wires or push bars (EN 418: 1993).
8. Q. *What is the maximum period between which every air receiver shall be thoroughly cleaned and examined by a competent person?*
- A. At least once in every period of twenty-six months.
9. Q. *Name six types of mechanical hazards associated with work equipment and give an example of each?*
- A. Traps –
Nips
Shearing
Crushing
Impact –
Ejection
Entanglement
Contact.
10. Q. *Outside of knives, list six cutting edges associated with work equipment?*
- A.
 - Circular saw blades
 - Planing machines
 - Meat slicers
 - Rough surfaces
 - Grinding wheels
 - Sanding belts
 - Guillotines
 - Shredding machines.
11. Q. *Name eight drive mechanisms which you would associate with in-running nips?*
- A.
 - Belt
 - Chains
 - Gear drives
 - Conveyor systems
 - Revolving shafts, couplings, spindles, mandrels, bars and flywheels
 - In-running nips between pairs of rotating parts

MECHANICAL HAZARDS

- In-running nips of the belt and pulley type
- Projections on revolving parts
- Discontinuous revolving parts
- Revolving beaters, spiked cylinders and revolving drums
- Revolving cutting tools
- Reciprocating needles.

12. Q. List eight areas where you might see "entanglement"?

- A.
- Drill chucks
 - Couplings
 - Screw drives
 - Smooth rotating shafts
 - Conveyor systems
 - Revolving shafts, couplings, spindles, mandrels, bars and flywheels
 - In-running nips between pairs of rotating parts
 - In-running nips of the belt and pulley type
 - Projections on revolving parts
 - Discontinuous revolving parts
 - Revolving beaters, spiked cylinders and revolving drums
 - Revolving cutting tools
 - Reciprocating needles.

13. Q. List eight hazards that can arise from the use of abrasive wheels?

- A.
- Improper selection of wheel
 - Improper mounting
 - Over speed
 - Inadequate guarding
 - Rotating parts
 - Flying particles
 - Source of ignition
 - Imbalance
 - Dust
 - Noise.

NOISE/VIBRATION

1. **Q. *Where is the best place to control noise?***
A. At source.
2. **Q. *What is a good way to reduce noise in machines ranging from power presses to typewriters etc?***
A. Mount them on shock absorbers or special pads.
3. **Q. *How would the noise from the cutting action of tools, circular saws etc. be reduced?***
A. By keeping them sharp.
4. **Q. *How could noise at one machine in a shop be reduced, without interfering with the machine itself?***
A. Enclose it with sound absorbent material.
5. **Q. *How could the noise in a boiler making shop be reduced?***
A. By hanging such noise absorbing material as woollen blankets around the shop.
6. **Q. *How can the ears be protected from noise?***
A. By ear plugs, ear defenders, or muffs.
7. **Q. *If there is a group of noisy machines, how could persons be protected from harmful effects in the short term?***
A. Provide ear protection or use sound absorbing material to enclose them.
8. **Q. *What is the name for the unit of measurement of sound pressure level?***
A. A decibel.
9. **Q. *What do you understand by the term "Intensity of a Noise"?***
A. The term intensity of a noise is a measure of the sound energy that vibrating air particles produced by the noise delivers to the ears. Sound intensity is measured in watts and converted to decibels (dB).
10. **Q. *What do you understand by the term "Frequency of Noise"?***
A. Frequency of a noise describes the rate of fluctuation of air particles produced by a noise. Frequency is measured in cycles per second (Hz).

11. Q. *Give two factors that complicate the determination of hearing loss due to industrial exposure to noise?*
- A. 1. Medical History.
2. Exposure to excessive noise for up to 48 hrs. preceding test.
12. Q. *What is an Audiogram?*
- A. It is a measure of a person's ability over a range of frequencies, in relation to the threshold of hearing at which sound can be detected.
13. Q. *What is the Science of sound called?*
- A. Acoustics.
14. Q. *What is the name given to a sound level which has a frequency above the human ability to hear?*
- A. Ultrasound or Ultrasonic - (above 20,000Hz).
15. Q. *What is the name given to a sound level which has a frequency below the human ability to hear?*
- A. Infrasound or Infrasonic - (below 30Hz).
16. Q. *Name the two aspects of noise which are important in understanding noise hazards?*
- A. 1. Frequency.
2. Intensity.
17. Q. *What is meant by the terms:- Attenuation and Audiometry?*
- A. Attenuation - is reduction of transmitted sound energy.
Audiometry - is the assessment of hearing capability.
18. Q. *What is the difference in use between a Sound Level Meter and an Audiometer?*
- A. A Sound Level Meter measures sound at the workplace.
An Audiometer measures an individuals hearing ability.
19. Q. *In relation to noise what do the terms N.I.D. and N.I.H.L. stand for?*
- A. 1. Noise Induced Deafness.
2. Noise Induced Hearing Loss.

20. Q. *What measurement on the decibel scale represents an increase or decrease of double or half the sound energy?*
- A. An increase or decrease of three decibels in sound energy.
21. Q. *How would you exclude outside noises when building a new building. Give four?*
- A. 1. Use cavity walls
2. Insulate cavities.
3. Insulate roof.
4. Line ceilings.
5. Double glaze.
6. Line walls.
22. Q. *What factors are important when choosing ear muffs for a person exposed to a noise hazard. Name four?*
- A. 1. Select the correct attenuation for the noise hazard.
2. The muffs should fit the wearer's ears properly.
3. The muffs should be comfortable to wear.
4. It must be possible to wear safety glasses or spectacles if necessary.
5. The muffs should be free of defects.
23. Q. *Name four sound-absorbent materials?*
- A. 1. Glass wool.
2. Mineral wool.
3. Fabrics.
4. Acoustic Tiles.
5. Cork.
6. Paper.
24. Q. *How is noise transmitted in a workroom?*
- A. Through the air and the floor.
25. Q. *If a diesel driven compressor had to be used in a plant, what two points would you check on before allowing it to be used?*
- A. 1. That it had not increased the noise level within the building to above the allowed level.
2. The exhaust gas was either piped outside or that the building was very well ventilated.

NOISE/VIBRATION

26. Q. *What do you call the notional steady noise level which over a given period of time, would deliver the same amount of sound energy as the fluctuating level?*
- A. LEQ or Equivalent Continuous Sound Level.
27. Q. *If you were 2 metres from somebody and found it necessary to shout to communicate. What would you expect the minimum noise level present to be?*
- A. At least 85 dBA.
28. Q. *When people talk about the Noise Regulations what legislation are they referring to?*
- A. The Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 1 of Part 5 – Control of Noise at Work.
29. Q. *According to current Health and Safety legislation and guidance how often should noise measurements be repeated and when?*
- A. At appropriate intervals, particularly when:-
- Any significant change in work patterns.
 - Any significant change in equipment.
30. Q. *What factors should be considered in the cause of noise induced hearing loss?*
- A. An employer should look at both of the following:
- The level of noise
 - The length of time of exposure.
31. Q. *What is the daily noise exposure level?*
- A. This is the time-weighted average (TWA) of the noise level which an employee is exposed to for a nominal eight hour working day, which is defined by an international standard ISO.
32. Q. *If the daily noise exposure varies from one working day to the next, what may employers use to assess the levels of noise to which an employee may be exposed to?*
- A. Employers may use a weekly noise exposure level.

33. Q. *Who should health surveillance be made available to?*
- A. Health surveillance should be made available to employees whose risk assessment revealed a risk to their health.
34. Q. *What should an employer do if an employee is found to have hearing damage as a result of exposure to noise at work?*
- A. The employer should review the risk assessment and the control measures provided to eliminate or reduce risks.
35. Q. *When would ear protectors be suitable and adequate?*
- A. Ear protectors are only suitable and adequate, if and when properly worn; they will reduce the level of noise experienced by the employee to a level below 80 dB(A).
36. Q. *What is the transitional period for the noise regulations for sea-going vessels?*
- A. Current Health and Safety legislation and guidance (conducting risk assessment and implementing controls) give an application date of 15 February 2011.
37. Q. *Where can the Vibration Regulations be found?*
- A. The Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 2 of Part 5 – Control of Vibration at Work.
38. Q. *Regulation 142 the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 2 of Part 5 – Control of Vibration at Work, permits for certain exemptions to the regulations, Who grants these exemptions and how?*
- A. Health & Safety Authority – by certificate in writing.
39. Q. *What is meant by HAV, explain?*
- A. "Hand arm Vibration" means mechanical vibration that, when transmitted to the human hand-arm system, entails risks to the safety and health of employees, in particular vascular, bone or joint, neurological or muscular disorders.
40. Q. *What is meant by WBV, explain?*
- A. "Whole body Vibration" means mechanical vibration that, when transmitted to the whole body, entails risks to the safety and health of employees, in particular lower- back morbidity and trauma of the spine.

41. Q. *Above how many dBA must an employer assess the level of noise an employee is liable to be exposed to and (2) What two conditions apply to these measurements under the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 1 of Part 5 – Control of Noise at Work*
- A. • Above 80 dBA.
• The measurements must be properly planned.
• They must be carried out by a competent person.
42. Q. *According to the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 1 of Part 5 – Control of Noise at Work an employer has a duty to reduce the level of noise exposure in the workplace to the lowest level reasonably practicable. Give three instances how this may be achieved?*
- A. 1. Ensuring new machinery has a low noise output.
2. Install machinery so as to ensure noise abatement.
3. Reducing the number of people working in a noisy area.
4. Reducing the length of exposure time.
5. Ensuring workplace structure and layout contributes to noise abatement.
43. Q. *What are exposure action values in relation to noise?*
- A. These are the daily noise exposure level or the peak sound pressure level which, if exceeded, for an employee, action will need to be taken to reduce the risk. These relate to:
- The levels of exposure to noise of your employees averaged over a working day or week.
 - The maximum noises (peak sound pressure) to which employees are exposed in a working day.
44. Q. *What are Lower exposure action values?*
- A. Lower exposure action values:
- Daily or weekly exposure of 80 dB(A)
 - Peak sound pressure of 135 dB (C).
45. Q. *What are Upper exposure action values?*
- A. Upper exposure action values:
- Daily or weekly exposure of 85 dB(A);
 - Peak sound pressure of 137 dB(C).

46. Q. *Do the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 1 of Part 5 – Control of Noise at Work? apply to all workers?*
- A. The regulations apply to all workers and workplaces except –
- Crew members at sea or in air transport until February 2011.
47. Q. *What is a competent person with regard to the noise regulations. Give three requirements?*
- A. A competent person is someone:
- With knowledge and understanding of the Noise Regulations 2006
 - Who has the ability to use the correct measurement equipment.
 - Who can record and interpret the results obtained in accordance with the regulations.
 - Who can make suitable and appropriate recommendations on how the noise levels can be reduced and so reduce the risk of hearing damage occurring.
48. Q. *How long should noise records be kept, and to whom should they be available?*
- A. These records should be kept for 10 years and be available to
- The worker concerned or his/her representative.
 - The Inspectors of the Health and Safety Authority.
49. Q. *What is the purpose of audiometric testing?*
- A. The purpose of Audiometric testing is:-
- To provide an early diagnosis of any hearing loss due to noise.
 - To assist in the preservation of hearing.
 - It can also provide a baseline of hearing at a specific time (before an employee starts work with a particular employer).
50. Q. *Is the employer responsible to supply ear protection, elaborate?*
- A. Regulation 129 of the The Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter1 of Part 5 – Control of Noise at Work states that where risks arising from noise exposure:-
- Can not be prevented by any other means.
 - The employer must supply sufficient numbers of suitable ear protectors.
 - Consulting with the workers regarding suitability and adequacy of the type chosen.

51. Q. *Should any form of music be used to block out a noisy workplace, explain your answer?*
- A. NO:-
- In order to hear music in a noisy workplace, it has to be played at a level 10-15 dBA over any background noise.
 - This means that the music itself becomes the major source of noise exposure in the workplace.
 - This also applies to personal music systems such as walkmans as well as any music being played over loudspeakers.
52. Q. *What are the Exposure Limit Values and Action Values for hand-arm vibration expressed in Regulation 135 the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 2 of Part 5 – Control of Vibration at Work?*
- A. • The daily exposure limit value standardised to an eight-hour reference period shall be 5m/s²,
- The daily exposure action value standardised to an eight-hour reference period shall be 2.5 m/s².
53. Q. *What are the Exposure Limit Values and Action Values for whole body vibration expressed in Regulation 135 of the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 2 of Part 5 – Control of Vibration at Work of the vibration regulations?*
- A. • The daily exposure limit value standardised to an eight-hour reference period shall be 1.15 m/s²,
- The daily exposure action value standardised to an eight-hour reference period shall be 0.5 m/s².

OCCUPATIONAL HEALTH

1. **Q. Name the two types of dermatitis that can be contracted in the workplace?**
 - A.
 - Irritant contact dermatitis
 - Allergic contact dermatitis

2. **Q. Any procedure that monitors changes in the health of employees is called what?**
 - A. Health surveillance

3. **Q. List both the upper and lower exposure action values for noise as contained in the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 1 of Part 5 – Control of Noise at Work?**
 - A.
 - Upper: 85 dB(A)
 - Lower: 80 dB(A)

4. **Q. What part of the body is affected by the Hepatitis B virus?**
 - A. The liver.

5. **Q. What is the so called Hospital super bug commonly called?**
 - A. MRSA – (Methicillin-resistant Staphylococcus aureus).

6. **Q. Give another name for the disease 'Leptospirosis', and what type of animal carries the disease?**
 - A.
 - Weil's disease
 - Rats
(a milder form can be transmitted by dogs and cattle).

7. **Q. Name two diseases that can be caused by exposure to asbestos?**
 - A.
 - Mesothelioma
 - Asbestosis
 - Pleural plaques
 - Lung cancers.

8. **Q. Legionnaire's disease is a type of what well-known illness?**
 - A. Pneumonia.

9. Q. *What is the aim of Biological Monitoring?*
- A. To detect the level of toxic chemical within the body before it causes adverse health effects.
10. Q. *What is the substance present in cement that can cause dermatitis in those exposed to it?*
- A. Chrome.
11. Q. *In what part of the body will you find alveoli and bronchioles?*
- A. The lungs
12. Q. *What is pneumoconiosis?*
- A. Lung or respiratory diseases caused by dust.
13. Q. *Name three forms of airborne contaminants?*
- A. • Solid particulates such as dusts and fumes
• Airborne liquid droplets, such as mists
• Toxic and flammable gases and vapours.
14. Q. *Name two types of radiological protection strategies?*
- A. • Shielding
• Distance
• Time limits.
15. Q. *What is Toxicology?*
- A. It is the study of the effect of chemicals on living systems.
16. Q. *Is there a maximum temperature for an office?*
- A. There is no maximum temperature stated under Regulation 7 of the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 1 of Part 2 – Workplace?
17. Q. *What is a minimum comfortable working temperature for indoor sedentary workers?*
- A. 17.5 degrees centigrade.

18. Q. *What is a maximum comfortable working temperature for when you are undertaking light duties?*
- A. 27 degrees centigrade.
19. Q. *What is the minimum recommended space in an office per person?*
- A. In offices, 4.65 metres squared should be the minimum amount of floor space allowed for every person employed in any room to include the area occupied by the office desk and chair but excluding filing cabinets and other office furniture.
20. Q. *What is the minimum recommended space per person in other work situations?*
- A. At least 11.3 cubic metres is provided for each person at work in a room at any one time. When calculating the volume, no space more than 4.3 metres from the floor should be taken into account.

OFFICE SAFETY

1. **Q. *Modern filing cabinets will not overturn like the older ones used to. Why?***
A. They are so constructed that only one drawer will open at a time.
2. **Q. *If an accident occurs in an office must it be reported to the HSA?***
A. An accident irrespective of where it takes place must be reported if it prevents a person from performing their normal duties of their employment for more than three days.
3. **Q. *What is normally the last task that should be undertaken prior to locking the office at termination of work?***
A. Inspect to ensure no fire hazard remains.
4. **Q. *The average office is considered to be reasonably safe compared to a construction site, but what is normally considered the greatest hazard in an office after working hours?***
A. Fire.
5. **Q. *When must seats be provided for employees?***
A. If there is an opportunity for sitting.
6. **Q. *If a job can be done either sitting or standing which is preferable?***
A. Sitting.
7. **Q. *Why should seats be provided?***
A. To reduce fatigue.
8. **Q. *What is important about the design of a seat in relation to the user?***
A. It should be comfortable and safe.
9. **Q. *A good seat should have a backrest, a footrest, be comfortable, and suitable for the job. What else should it have?***
A. It should have a means of adjusting the height.
10. **Q. *In addition to being suitable for the worker, what else is important in the design of a seat?***
A. It should be suitable for the particular job.

11. Q. *Name the two principal problems associated with V.D.U. operations?*
- A. 1. Visual fatigue.
2. Postural fatigue.
12. Q. *V.D.U. Screen Filters are often used to reduce eyestrain associated with glare and reflections from light or windows. Is the use of tinted spectacles also recommended?*
- A. No (unless prescribed by optician).
13. Q. *Name the four essential requirements in relation to the characters on the display screen of a VDU?*
- A. 1. Well Defined.
2. Clearly Formed.
3. Adequate Size.
4. Adequate Spacing.
14. Q. *Name four essential requirements from a Health and Safety viewpoint for a VDU work chair?*
- A. 1. Stability
2. Provide easy freedom of movement.
3. Provide a comfortable position..
4. Height adjustability.
5. Seat back adjustability.
15. Q. *Can you name four of the six essential principles to be taken into account when designing, selecting, commissioning and modifying VDU software?*
- A. 1. Suitability for task.
2. Ease of use.
3. Performance Feedback Provision.
4. Display format adapted to operators.
5. Display pace adapted to operators. Software Ergonomics Principles Applied.
16. Q. *What are the principle regulations relating to the use of VDU's in the workplace?*
- A. Chapter 5 of Part 2 of the Safety, Health and Welfare at Work (General Application) Regulations 2007 – Display Screen Equipment.

17. Q. *Schedule 4 of the Safety, Health and Welfare at Work (General Application) Regulations 2007 lays down five essential requirements for keyboards of display screen equipment. Name three of these requirements?*
- A. 1. Matt surface to avoid reflective glare.
2. Arrangement of keyboard and key characteristics to facilitate use
3. Key symbols adequately contrasted and legible.
4. Keyboard tiltable and separate from screen.
5. Space in front to provide support for hands and arms.
18. Q. *Schedule 4 of the Safety, Health and Welfare at Work (General Application) Regulations 2007 lays down four minimum requirements for chairs used at visual display work stations. Name three of these requirements?*
- A. 1. Stable, comfortable and allow easy movement.
2. Height adjustable.
3. Adjustable back in both height and tilt.
4. Footrest available on request.

PROTECTIVE CLOTHING

1. **Q. *Why remove gloves before goggles?***
A. To prevent contamination of the face or eyes
2. **Q. *When should eye protection be worn?***
A. At any time when there is danger to the eyes.
3. **Q. *Will a dust mask normally give protection against fumes?***
A. No.
4. **Q. *Give two reasons why ordinary glasses do not fully protect the eyes?***
A. 1. The material may not be unbreakable.
2. There are no side shields.
5. **Q. *How do you test a canister respirator for air tightness?***
A. Fit closely, squeeze the air tube and take a deep breath.
6. **Q. *Why wear hard hats on building sites?***
A. As a protection against falling objects and striking the head on structures.
7. **Q. *How do you prevent goggles from misting up?***
A. Use an anti-mist spray.
8. **Q. *Will any type of two eyepiece goggles do for welders?***
A. No, they must be the correct colour to protect against ultra violet light.
9. **Q. *What clothing is normally worn when there is intense radiant heat?***
A. Aluminised heat resistant.
10. **Q. *In what industry are gaiters or spats usually worn?***
A. In a foundry.
11. **Q. *Give two items that must be provided when corrosive liquids are being handled?***
A. 1. Suitable Gloves.
2. Goggles or Visors.
3. Suitable Overalls.
4. Suitable Footwear.

PROTECTIVE CLOTHING

12. Q. *What item of personal protection is essential when welding, riveting or chipping stone?*
- A. Eye Protection.
13. Q. *If goggles are essential what is most important about the fitting?*
- A. They should be fitted to the individual.
14. Q. *Why must chin straps be worn with headgear in the vicinity of a helicopter?*
- A. To avoid damage to rotor blades in the event of head gear being sucked into the rotors.
15. Q. *In safety circles what does R.P.E. mean?*
- A. Respiratory Protective Equipment.
16. Q. *Give four occasions when eye protection should be worn, when there is risk of injury to the eyes?*
- A. When there is risk of injury to the eyes from:-
1. Flying Particles.
 2. Splashing with chemicals.
 3. Welding or Braising.
 4. Burning.
 5. Radiation.
17. Q. *What are the principal considerations when purchasing a pair of goggles?*
- A.
 1. Suitable for the work.
 2. Good fit to face.
 3. Good vision.
 4. Ventilated if possible.
18. Q. *What are the two essential factors about a helmet to be worn while blasting materials?*
- A.
 1. It must be totally enclosed.
 2. It must be of the air-supplied type.
19. Q. *Is a canister respirator (a) safe against lack of oxygen in the atmosphere and (b) up to what concentration of fumes is it safe against?*
- A. (a) No.
(b) Normally 2% but always check this and the protection time.

PROTECTIVE CLOTHING

20. Q. *Is a canister respirator suitable protection for carrying out a rescue in a fume filled area. Qualify your answer?*
- A. No - Most canister respirators will allow fumes through if the concentration exceeds 2% or you exceed the protection time.
21. Q. *Having dressed in an acid suit, visor, gloves and boots prior to working with a corrosive liquid, what else should you do before commencing work?*
- A. 1. Stand under a safety shower to ensure the protective clothing has no leaks.
2. Check that the safety shower and eye wash unit work satisfactorily.
22. Q. *What protective clothing is necessary when working with acids and corrosive materials, and what is the correct way of wearing it?*
- A. 1. Full Face Visor Overall. PVC/Rubber Gloves. Rubber Boots. PVC Apron/Acid Suit. Glasses/Goggles.
2. Glasses under visor. Acid Suit Sleeves over gloves. Trousers over Boots.
23. Q. *Industrial eye protection is listed under the following abbreviations, GP, I1, I2, M.M, C.S, C.D, D, G. Give the meaning of these eight abbreviations?*
- A. 1. G.P. General Purpose.
2. I1. Impact 1.
3. I2. Impact 2.
4. M.M. Molten Metal.
5. C.S. Chemical Splash.
6. C.D. Chemical Droplets.
7. D. Dust.
8. G. Gas.
24. Q. *The Safety, Health and Welfare at Work (General Application) Regulations 2007 define Personal Protective Equipment but exclude five particular categories. Name four of these categories?*
- A. 1. Ordinary working clothes and uniforms not specifically designed to protect the safety and health of an employee.
2. Personal protective equipment for the purpose of road transport.
3. Sports equipment.
4. Self-defence equipment or deterrent equipment.
5. Portable devices for detecting and signalling risks and nuisances.

RULES OF THE ROAD

1. **Q. *In traffic lights what message is conveyed by the fully lit Amber light?***
 - A. STOP unless the vehicle is so close to the stop line that it can not be halted safely before crossing the stop line.

2. **Q. *From who must a driver obey a signal to stop, give two?***
 - A. 1. A member of the Garda.
2. A school warden.
3. A person in charge of animals.

3. **Q. *What should you (a) do, and (b) not do if dazzled by oncoming headlights?***
 - A. (a) Slow down or stop.
(b) Turn on yours fully.

4. **Q. *What other three categories of road signs have you other than information signs?***
 - A. Warning signs, Regulatory signs and Motorway signs.

5. **Q. *What colour/s are warning signs?***
 - A. Black symbols or letters on a yellow background.

6. **Q. *Describe a "Clearway" sign?***
 - A. It is a circular sign with red border, displaying a red cross on a white background.

7. **Q. *What must we observe about a broken white line down the centre of a road?***
 - A. It must not be crossed unless it is safe to do so.

8. **Q. *What is the speed limit for a single decked mechanically propelled vehicle intended or adopted primarily for the carriage of passengers which has passenger accommodation for more than 8 persons?***
 - A. 80 kph.

9. **Q. *What is the speed limit for a mechanically propelled vehicle neither intended nor adapted primarily for the carriage of passengers which has a design gross vehicle weight in excess of 3,500 kilograms?***
 - A. 80 kph.

RULES OF THE ROAD

10. Q. *What is the speed limit for a combination of a mechanically propelled vehicle drawing another vehicle?*
- A. 80 kph.
11. Q. *What is the speed limit for a double-deck mechanically propelled vehicle intended or adapted primarily for the carriage of passengers and having passenger accommodation for more than 8 passengers.*
- A. 65 kph.
12. Q. *What speed limit applies to a car or jeep towing a trailer, caravan, horsebox, etc.?*
- A. 80 kph.
13. Q. *To who must you give way on a Road Junction where both roads are of equal importance. Give two?*
- A. 1. To traffic coming from your right.
2. To traffic already turning.
3. To pedestrians already crossing.
14. Q. *What should you not do when being overtaken?*
- A. Accelerate.
15. Q. *Describe the signs you would expect to see when (a) approaching and (b) leaving a dual carriageway?*
- A. (a) Approaching - A tuning fork upright.
(b) Leaving - A tuning fork downwards.
16. Q. *When is it an offence to use the horn?*
- A. Except in a traffic emergency the horn must not be used between 11.30 p.m. and 7.00 a.m., in a built up area.
17. Q. *What is the most effective warning of approach at night?*
- A. Flashing the head lights.
18. Q. *When refuelling what two things must you do before removing the filler cap?*
- A. 1. Switch off the engine.
2. Stop smoking.

RULES OF THE ROAD

19. Q. *Name four requirements regarding tyres on a car?*
- A. 1. They must not be excessively worn.
2. They must have a minimum of 1.6mm of thread all round.
3. Tyre pressures should be checked regularly.
4. Radial and cross-ply tyres should not be mixed on a vehicle.
20. Q. *Give four occasions when you should use your rear view mirror?*
- A. 1. Moving off.
2. Changing lanes.
3. Overtaking.
4. Turning.
5. Slowing down/Stopping.
6. Opening a door.
21. Q. *What restrictions apply on a "Clearway"?*
- A. Parking or stopping is prohibited (except by buses or taxis), for the periods indicated on a plaque placed beneath the sign.
22. Q. *What does a broken yellow line mean?*
- A. Edge of carriageway or hard shoulder.
23. Q. *What does a continuous yellow line at the kerbside mean?*
- A. No parking during certain hours.
24. Q. *If entering a roundabout from a two lane dual carriageway using the right hand lane, which is the first exit that you can exit from?*
- A. Third or subsequent.
25. Q. *What is important to remember about signals?*
- A. They only convey indications of intent.
26. Q. *With-flow bus lanes can be used by scheduled buses and taxis. What other type of transport can use them?*
- A. Cyclists.
27. Q. *Contra-flow bus lanes can be used by scheduled buses. What other type of transport can use them?*
- A. None.

RULES OF THE ROAD

28. Q. *Name four pieces of emergency equipment that should be carried in a vehicle?*
- A. First Aid Kit.
Fire Extinguisher
A Warning Triangle.
A Light.
29. Q. *From the Rules of the Road booklet, what is the total stopping distance within 5 metres for a good car perfect in every way, travelling at 100kph on a wet road?*
- A. 122.6 metres.
30. Q. *From the Rules of the Road booklet, what is the total stopping distance within 5 metres for a good car perfect in every way, travelling at 120kph on a wet road?*
- A. 172.2 metres.
31. Q. *In a recent advertising campaign by the National Safety Council, motorists were advised to take a particular precaution at all times. What was this precaution?*
- A. Use parking lights at all times.
32. Q. *What is the minimum thread depth for most vehicles on the public road?*
- A. 1.6mm.
33. Q. *What is the minimum thread depth for motor cycles and vintage vehicles on the public road?*
- A. 1mm.
34. Q. *What six particular points must be observed while reversing a mechanically propelled vehicle?*
- A. 1. Check all around for other traffic and pedestrians.
2. Watch for small children below your sight line.
3. Never reverse from a side road onto a major road.
4. Manoeuvre slowly and don't take chances.
5. If your view is restricted get help.
6. Never rely on your mirrors alone for reversing.

RULES OF THE ROAD

35. Q. *Give three pointers as to how fast you should drive?*
- A. 1. At a speed consistent with existing road conditions.
2. At a speed that will enable you to stop within the distance you can see to be clear.
3. At a speed that will comply with any speed limit restriction in the area.
36. Q. *When parking your car at the edge of the road on a steep hill what three precautions would you take, explain fully each precaution?*
- A. 1. Apply the handbrake sufficiently.
2. Engage a low gear. (first gear if facing uphill). (reverse gear if facing downhill)
3. If there is a kerb turn the wheels in towards it if facing downhill, and outwards if facing uphill.
37. Q. *What three signs might you expect to see approaching a main road?*
- A. 1. A warning sign "Major Road Ahead".
2. A regulatory sign "Yield Right of Way".
3. A Stop Sign.
38. Q. *As well as two head lamps which can be dipped, what six other light sources must a vehicle other than a motor cycle have?*
- A. 1. Two white side lamps.
2. Two red rear lamps.
3. Two red stop lamps.
4. Two red rear reflectors.
5. Rear number plate light.
6. Direction indicators.
39. Q. *At a "Pelican Crossing", what two messages does a flashing amber light convey to drivers?*
- A. 1. They must yield to pedestrians.
2. They may proceed with caution if crossing is clear.
40. Q. *What two regulations apply to the outer lane in a three lane dual carriageway?*
- A. 1. It should only be used for overtaking.
2. It should only be used when you intend turning right a short distance ahead.

RULES OF THE ROAD

- 41. Q. *How would you signal by hand while driving a motor vehicle that you intend turning left?***
- A. Extend your right arm through the driver's window and move your arm and hand in an anti-clockwise direction.
- 42. Q. *Give three reasons for allowing adequate clearance when passing parked vehicles?***
- A. 1. The door of a parked vehicle may be opened from the inside without warning.
2. It may pull away from the kerb without a signal or without its driver checking.
3. Pedestrians, particularly small children, may emerge suddenly from between parked vehicles.
- 43. Q. *When braking what are the six main factors which affect your overall stopping distance?***
- A. 1. Concentration.
2. Condition of road surface.
3. Condition of tyres.
4. Condition of brakes.
5. Weather conditions.
6. Closeness of following traffic.
- 44. Q. *Name six qualities necessary for the making of a safe driver?***
- A. 1. Patience.
2. Carefulness.
3. Courtesy.
4. Consideration.
5. Concentration.
6. Discretion.
7. Decisiveness.
- 45. Q. *Give the three significant visual features of a stop sign?***
- A. 1. It is an eight sided figure.
2. It has the word Stop in white lettering.
3. It has a red background.
- 46. Q. *Give the three significant visual features of a Yield Right of Way sign?***
- A. 1. It is an inverted triangle.
2. It has the words Yield Right of Way in black lettering.
3. It has a white background.

RULES OF THE ROAD

47. Q. *Why are Stop Signs and Yield Right of Way Signs so shaped?*
- A. Because if they are defaced or covered in snow a driver will still know what they mean.
48. Q. *Name six occasions when it is advisable for a driver to turn his head rather than rely on mirrors to see behind him?*
- A. 1. Before and during reversing.
2. Before moving off.
3. Before opening the car door.
4. When changing lanes.
5. When parking.
6. When connecting a trailer.
49. Q. *Name six points for all drivers to observe, which would greatly contribute to road safety?*
- A. 1. Make allowances for the mistakes of others.
2. Don't accept challenges.
3. Anticipate the unexpected.
4. Keep your mind on your driving at all times.
5. Observe speed limits.
6. Don't change your mind suddenly.
7. Don't hesitate.
50. Q. *Give six situations in which you must dip your headlights?*
- A. 1. When meeting other traffic.
2. In a built up or special speed limit area.
3. On continuously lit roads outside speed limit areas.
4. When following close behind another vehicle.
5. At the beginning and end of lighting up hours.
6. Where there is dense fog or falling snow.
7. Generally to avoid inconvenience to other traffic.
51. Q. *Give a situation where it is not necessary to dip your headlights in a built up or special speed limit area?*
- A. Where the roads are unlit.
52. Q. *How can hazard flashers create a hazard if you forget to turn them off apart from being a distraction?*
- A. They camouflage direction signals.

RULES OF THE ROAD

53. Q. *How can high intensity rear fog lights create a hazard if you forget to turn them off apart from blinding the driver following behind?*
- A. They make it difficult to detect brake lights after dark.
54. Q. *On an Irish driving licence the type of vehicles which the holder is entitled to drive is shown by specific letters. What types of vehicles do the following eight letters represent A, A1, B, C, C1, D, D1, W.?*
- A. A. Motorcycles with or without a sidecar.
A1. Motorcycles not over 125 cc with or without a sidecar.
B. Vehicles with passenger accommodation for eight persons or less and with a design g.v.w. not over 3,500 Kg.
C. Vehicles with passenger accommodation for eight persons or less and with a design g.v.w. over 3,500 Kg.
C1. Vehicles with passenger accommodation for eight persons or less and with a design g.v.w. over 3,500 Kg. but not over 7,500 Kg.
D. Vehicles with passenger accommodation for more than eight persons.
D1. Vehicles with passenger accommodation for more than eight persons but not more than sixteen persons.
W Work vehicles and land tractors with or without a trailer attached.
55. Q. *When applying for an Irish driving licence for vehicle types A, A1, B, C, C1, D, D1, W. What age must you have reached for each category?*
- A. A. 18 years.
A1. 16 years.
B. 17 years.
C. 18 years.
C1. 18 years.
D. 21 years.
D1. 21 years.
W. 16 years.
56. Q. *Give four categories of people who are exempted from wearing seat belts?*
- A. You must wear a seatbelt. The only exemptions are for:
1. People who wear a disabled persons belt
 2. People whose doctor have certified that, on medical grounds, they should not wear a safety belt
 3. Driving instructors or driver testers during a lesson or a test
 4. Gardaí or members of the Defence Forces in the course of their duty.

57. Q. *When approaching a motorway you meet a large sign prohibiting certain types of traffic on the motorway. What colour is it and what types of traffic are prohibited?*
- A. 1. Blue with white lettering.
2. No L Drivers.
3. No Vehicles under 50 cc.
4. No Slow Vehicles (under 50kph)
5. No Invalid-carriages.
6. No Pedal-cycles.
7. No Pedestrians.
8. No Animals.

SAFE ACCESS

1. **Q. *Name two actions that should be taken about an opening in the floor?***
A. It should be fenced off, a warning notice placed, and lit up after dark.
2. **Q. *What precautions must be taken when using a safety belt?***
A. It should be fastened to a secure point, and free fall should be kept to a minimum.
3. **Q. *What hazards can develop in a concrete floor?***
A. It can become pitted, cracked, worn, or slippery.
4. **Q. *What would you consider secure fencing around an open vessel containing hot liquid?***
A. Rails with toe boards, Solid fence, Mesh, all 1 metre high.
5. **Q. *What fault can develop in a fixed iron staircase?***
A. Corrosion of threads, handrails, and fixings. Slippery or worn threads, or iced up threads due to weather conditions.
6. **Q. *How many handrails are necessary on a stairway?***
A. Two are best, one on either side.
7. **Q. *What two ways would you guard the open side of a staircase?***
A. 1. By a top and lower rail.
2. By strong wire mesh or solid panel.
8. **Q. *Why is mesh better than a top and lower rail on the open side of a staircase?***
A. Because it will not allow objects other than very small objects to fall through.
9. **Q. *Safe access is required for everyone in the work place. Does this include access to machinery and equipment?***
A. Yes.
10. **Q. *Can floors be polished?***
A. Yes, but only if they remain non-slip.

11. Q. *Should chairs, boxes etc. be used to gain access to shelves and high objects?*
A. No, only proper step ladders, or step-ups should be used.
12. Q. *At what pace should persons travel in a work area?*
A. At walking pace.
13. Q. *Why should there be a clear unobstructed space round a machine in a workshop or factory?*
A. To give people room to work.
14. Q. *How do you indicate to people to keep passages and gangways clear in a factory or workshop?*
A. By painting white or yellow lines on the floor.
15. Q. *Are sliding and revolving doors allowed for use specifically as emergency doors?*
A. No.
16. Q. *In what direction should emergency doors open?*
A. Outwards.
17. Q. *To what must emergency routes and exits lead as quickly as possible?*
A. To the open air or a safe place.
18. Q. *What four points would you consider when siting a new machine?*
A. 1. Safe access for operator.
2. Safe access for maintenance.
3. Suitable access for work pieces.
4. Suitable lighting.
19. Q. *Outside of height give a design parameter for a stair handrail?*
A. It should be able to withstand a lateral force equal to a man's weight.
20. Q. *Give four causes of falls at floor level?*
A. 1. Faulty floors.
2. Bad footwear.
3. Bad lighting.
4. Tripping & slipping Hazards.

21. Q. *Give four ways by which slippery floor conditions can be minimised?*
- A. 1. Keep the area clean.
2. Keep it non-slip.
3. Roughen if smooth.
4. Wear suitable footwear.
22. Q. *What does the European Community Directive dealing with Safety and Health in the Workplace require for transparent doors?*
- A. They must be appropriately marked at a conspicuous level.
23. Q. *What does the European Community Directive dealing with Safety and Health in the workplace require for swing doors and gates?*
- A. They must have transparent or see through panels.
24. Q. *What does the European Community Directive dealing with Safety and Health in the workplace require for doors and gates that open upwards?*
- A. They must be fitted with a mechanism to secure them against falling back.
25. Q. *For what two specific purposes does The European Community Directive on Workplace Safety require sliding doors to be fitted with a safety device?*
- A. 1. To prevent derailment.
2. To prevent the door falling over.
26. Q. *The HSA Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007 indicates that the surfaces of floors or traffic routes should be free of holes, slopes, or slippery surfaces which are likely to cause three types of accidents. Can you name the three?*
- A. 1. Cause a person to slip, trip, or fall.
2. Cause a person to drop or lose control of anything being lifted or carried.
3. Cause instability or loss of control of vehicles and/or their loads.
27. Q. *The HSA Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007 gives seven examples of roofs containing fragile materials in respect of which special access precautions must be taken. Name six of these listed?*
- A. 1. Profiled plastic cladding (PPC).
2. Glass reinforced plastic (GRP) daylight sheets.
3. Asbestos cement sheets.

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4. Fibre cement sheets (non asbestos).
 5. Glass - wired or plain.
 6. Light gauge steel sheets.
 7. Other fragile material used for roofing.
28. Q. *Give four examples of where arrangements must be made so that employees can evacuate a place of work during unavoidable danger without being placed at a disadvantage?*
- A.
 1. Working in an area where there has been a significant spillage or escape of a hazardous chemical.
 2. Working in a trench where shoring is suspect or inadequate.
 3. Working at or near a runaway chemical reaction, or a chemical plant which has the potential to overheat, over pressurise or explode.
 4. Working in dangerous buildings, on a fragile roof where sufficient crawling board or other equivalent protection is not provided.
 5. Working in other situations of serious and imminent danger, fire, emergency other equivalent to these examples.
 6. Danger from moving vehicles in a workplace.
29. Q. *The HSA Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007 refers to the movement of pedestrians and vehicles and danger areas and in this context indicates four particular types of passageways that must be adequately lit. Can you name them?*
- A.
 1. Near buildings.
 2. In pedestrian areas.
 3. At junctions.
 4. Where there is a regular movement of vehicles and other mobile plant.
30. Q. *The HSA Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007 gives four examples of the considerations to be taken into account in the suitable design and maintenance of pedestrian and vehicle traffic routes at a place of work. Name the four examples?*
- A.
 1. Roads or floor surfaces should be constructed and surfaced with suitable material. Surfaces should be even and properly drained.
 2. Excessive gradients should be avoided.
 3. Routes for pedestrians between floors should be by a properly constructed stairs, elevators, lifts or suitably constructed ramps.
 4. The use of fixed ladders for access should be avoided unless access is not needed very often and no other means is possible.

1. **Q. *Hazards in the workplace can be divided into six main groups. Name four groups?***
 - A.
 - Biological
 - Human behaviour
 - Physical
 - Physical agents
 - Chemical
 - Fire and explosion.

2. **Q. *List four of the five basic steps involved in Risk Assessment?***
 - A.
 - Identify the hazards
 - Decide who might be harmed and how
 - Evaluate the risks and decide on controls or precautions
 - Record your findings and implement them
 - Review your assessments and update as necessary.

3. **Q. *In relation to safety management systems what does the abbreviation 'OHSAS' mean?***
 - A. Occupational Health and Safety Assessment System.

4. **Q. *List four key elements of Safety Management Systems?***
 - A.
 - Policy
 - Planning
 - Measuring performance
 - Reviewing performance
 - Implementation and operation
 - Auditing.

5. **Q. *Name two types of monitoring methods that can be used to determine whether health and safety objectives are being achieved?***
 - A.
 - Active monitoring – checking compliance with health and safety activities.
 - Reactive monitoring – investigation and analysis of system failures.

6. **Q. *In relation to machine safety, list four types of protection devices or safety components?***
 - A.
 - Guarding which can be: Fixed, interlocked, automatic
 - Light curtain
 - Pressure sensitive pad
 - Two handed control.

7. Q. *Which EN Standard deals with machine interlocks and their related functions?*
- A. EN 1088.
8. Q. *Some groups of workers are considered more vulnerable than others. List four such vulnerable groups that should be given special consideration when assessing risks?*
- A. • Young workers
• Older workers
• New / inexperienced workers
• Non-English speaking workers
• Pregnant women
• Workers with disabilities.
9. Q. *Explain the abbreviation 'JSA'?*
- A. JSA – Job Safety Analysis
10. Q. *Explain the abbreviation 'SOP'?*
- A. SOP – Safe Operating Procedure.
11. Q. *Explain the abbreviation 'HAZOP'?*
- A. HAZOP – Hazard Operability Study.
12. Q. *Explain the abbreviation 'FMEA'?*
- A. FMEA – Failure Model and Effect Analysis.
13. Q. *According to the Health and Safety Authority, workplace accidents and injuries are costing the Irish economy how much each year?*
- A. €3 billion.
14. Q. *List four of the five generally accepted measures in the 'Hierarchy of Risk Control'?*
- A. • Elimination
• Substitution
• Engineering Controls
• Administrative Controls
• Personal Protective Equipment.

15. Q. *What two elements should be included in audits of Safety and Health Management systems?*
- A. • Formal audits
• Regular and Ad-hoc Inspections.
16. Q. *In relation to electrical safety, all socket outlets should be protected by an RCD with an operating current not exceeding?*
- A. 30mA.

1. Q. *What is the turn about system called which is used in order to get back on a reciprocal course which will take you back down the track in a man overboard situation?*
 - A. A Williamson Turn.

2. Q. *From which side of a semi-rigid boat should you attempt to recover some body from the water in a man overboard situation in heavy weather?*
 - A. The weather side of the boat from the bow.

3. Q. *In a man overboard situation, what four actions should you take?*
 - A. (a) Raise the alarm by shouting man overboard
 (b) Immediately throw the lifebouy, together with its smoke float and light.
 (c) Inform the Officer on Watch so that he can mark the position
 (d) Act as a lookout, and point to the person continually.

4. Q. *What is the principal danger if boat approaches some body in the water in a man overboard situation apart from fouling of the propeller by ropes and lines being used in the rescue?*
 - A. The boat may drift down on top of the person.

5. Q. *Apart from failure to locate the person give four reasons for life being lost in a man overboard situation?*
 - A. (a) Drowning.
 (b) Loss of consciousness due to Hypothermia.
 (c) Cold Shock.
 (d) Injury in the rescue.

6. Q. *When is it essential to wear life jackets after cast off?*
 - A. At all times when completing hazardous deck work.

7. Q. *Give four pieces of personal protective equipment which should be issued to all crew members?*
 - A. (a) Life jackets
 (b) Buoyancy Aids
 (c) Protective clothing suitable for the Industry
 (d) Suitable footwear.

8. Q. *What is essential to have fitted to close fitting inflatable life jackets?*
 - A. An electronic homing device.

9. Q. *Name four bodies involved in the safety of persons at sea?*
- A. (a) Department of Marine and Natural Resources.
(b) Irish Marine Emergency Services
(c) Irish Sailing Association
(d) Royal National Lifeboat Institute
(e) The National Safety Council.
10. Q. *What is the function of the line painted on the side of a ship?*
- A. To indicate the maximum load.
11. Q. *What is the name of the line painted on the side of a ship?*
- A. The Plimsoll Line
12. Q. *While standing on the bridge of a ship facing the bow, what do you call the side of the ship on your right-hand side in nautical terms?*
- A. Starboard Side.
13. Q. *While standing on the bridge of a ship facing the bow, what do you call the side of the ship on your left-hand side in nautical terms?*
- A. Port Side.
14. Q. *While standing on the bridge of a ship facing the bow, what do you call the deck at the bow in nautical terms?*
- A. Forecastle Deck.
15. Q. *While standing on the bridge of a ship facing the stern, what do you call the deck at the stern in nautical terms?*
- A. Poop Deck.
16. Q. *What do you call the deck that the lifeboats are on?*
- A. The Boat Deck.
17. Q. *What do you call the deck that has the hatch covers on it?*
- A. The Well Deck.
18. Q. *While standing on the bridge of a ship facing the bow, what colour navigation lights would you find on your right-hand side?*
- A. Green.

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19. Q. *While standing on the bridge of a ship facing the bow, what colour navigation lights would you find on your left-hand side?*
- A. Red.
20. Q. *Where on a boat would you expect to find the Jackstaff?*
- A. The Bow.
21. Q. *Where on a boat would you expect to find the Ensign staff?*
- A. The Stern.
22. Q. *How many RNLI Life Boat stations are there in the Island of Ireland?*
- A. Forty three.
23. Q. *What is the Northern most Lifeboat station in the Republic of Ireland?*
- A. Lough Swilly, it is based in Buncrana.
24. Q. *What is the Northern most Lifeboat station in the North of Ireland?*
- A. Portrush
25. Q. *What is the name of the Lifeboat Station situated between Red Bay Station and Bangor Station on the north east coast?*
- A. Larne Station
26. Q. *What is the name of the Lifeboat Station situated between Donaghadee Station and Newcastle Station on the north east coast?*
- A. Portaferry Station
27. Q. *What is the name of the Lifeboat Station situated between Newcastle Station and Clogher Head Station on the east coast?*
- A. Kilkeel Station
28. Q. *What is the name of the Lifeboat Station situated between Skerries Station and Dun Laoghaire Station on the east coast?*
- A. Howth Station

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29. Q. *What is the name of the Lifeboat Station situated between Wicklow Station and Courtown Harbour Station on the east coast?*
- A. Arklow.
30. Q. *What is the name of the Lifeboat Station situated between Kilmore Quay Station and Dunmore East Station on the south coast?*
- A. Fethard.
31. Q. *What is the name of the Lifeboat Station situated between Tramore Station and Youghal Station on the south coast?*
- A. Helvic
32. Q. *What are the names of the two Lifeboat Stations situated between Ballycotton Station and Courtmacsherry Station on the south coast?*
- A. Crosshaven & Kinsale
33. Q. *What is the name of the Lifeboat Station situated between Castletownbere Station and Fenit Station on the west coast?*
- A. Valentia.
34. Q. *What is the name of the Lifeboat Station situated between Fenit Station and Galway Station on the west coast?*
- A. Kilrush.
35. Q. *What is the name of the Lifeboat Station situated between the Aran Islands Station and Achill Island Station on the west coast?*
- A. Clifden Station.
36. Q. *What is the name of the Lifeboat Station situated between the Achill Island Station and Sligo on the west coast?*
- A. Ballyglass Station.
37. Q. *What is the name of the Lifeboat Station situated between Bundoran Station and Lough Swilly Station on the west coast?*
- A. Arranmore.

38. Q. *Where is the only lifeboat station in Ireland to operate three lifeboats – two inshore lifeboats and one all weather Tyne class lifeboat situated?*
- A. Lough Swilly
39. Q. *Not all life boats are based on the coast. Name two inland life boat stations in Ireland?*
- A. Lough Derg, based at Dromineer in Co. Tipperary, and Lough Erne based at Enniskillen.
40. Q. *What body is responsible for the provision and maintenance of all navigational aids in Ireland?*
- A. The Commissioners of Irish Lights.
41. Q. *How many Lighthouses are there in Ireland?*
- A. 80.
42. Q. *How many Lighthouses are now manned in Ireland?*
- A. None.
43. Q. *How many Lightfloats are there in Ireland?*
- A. 1.
44. Q. *How many Large Automatic Navigational Buoys (LANBY's) are there in Ireland?*
- A. 2.
45. Q. *How many Helicopter Shore Bases are maintained by The Commissioners of Irish Lights in Ireland?*
- A. 7.
46. Q. *How many Marine DGPS Beacons are there in Ireland?*
- A. 3.
47. Q. *There are a large number of Beacons around the coast, how many are lighted?*
- A. 5.

48. Q. *There are a large number of Beacons around the coast, how many are unlighted?*
- A. 42.
49. Q. *There are a large number of Buoys around the coast, how many are solar lighted?*
- A. 140.
50. Q. *There are a large number of Buoys around the coast, how many are electric lighted?*
- A. 1.
51. Q. *There are a large number of Buoys around the coast, how many are unlighted?*
- A. 3.
52. Q. *There are a large number of Racons around the coast, how many?*
- A. 22.
53. Q. *What are the three European Standards of Lifejacket?*
- A. They are 100 Newtons
150 Newtons
275 Newtons.
54. Q. *What is the equivalent flotation support for a 'Newton'?*
- A. 10 Newtons is the equivalent of 1 Kg of flotation support.
55. Q. *What is a buoyancy aid?*
- A. A buoyancy aid will simply help a conscious person to keep afloat.
56. Q. *What is a Racon Beacon?*
- A. It is a device that, on receiving radar signals, transmits coded signals in response to help navigators determine their position.
57. Q. *List six steps to be considered in buying a boat?*
- A. • Decide on the type of boat that you can handle

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- Decide on the type of boat that is most suitable for your purpose, particularly in relation to the size, age, and composition of your family.
- Make sure your purchase is in good condition, get it surveyed.
- Find out what equipment you will need, particularly safety equipment
- Do a course in basic boat handling skills and seamanship
- Join a suitable sailing or boating club, and encourage whoever is likely to sail with you regularly to join also.

58. Q. *Before putting to sea, for your family's sake, you must acquire basic skills. Your skills, and those of your crew, are your greatest asset, particularly if things go wrong. List six areas that should be covered?*

- A. • Seamanship.
• Navigation.
• Rules of the Road (At Sea).
• Use of safety equipment.
• Boat/engine maintenance.
• Radio Communication.
• First Aid.

59. Q. *You are proposing to make a trip on your boat, what six steps should you take before starting off?*

- A. • Check the weather forecast
• Check the condition of the boat and its equipment
• Ensure the engine is well maintained. Carry a tool kit and essential spares
• Ensure safety equipment is provided for all on board
• Check on local conditions
• Plan the trip:
• Make sure you leave details of your planned trip with someone ashore.

60. Q. *Check the weather forecast is one of the most important thing that you should do before going to sea. List three reliable means of doing this?*

- A. • Listening to the shipping or local radio forecast
• Telephoning Marinecall or it's equivalent
• Watching Teletext
• Telephoning the Coastguard or listening to their reports on VHF.

61. Q. *Check on local conditions is one of the most important thing that you should do before going to sea. List three areas that should be covered?*

- A. • Check tide races
• Check tide times including rise and fall

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- Check areas of shallow water
- Obtain relevant charts and tide tables.

62. Q. *Planning the trip is one of the most important things that you should do before going to sea. List three areas that should be covered?*

- A.
 - How long will it take?
 - Who will keep watch?
 - What access do you have to safe havens en route?
 - What are the alternatives?

63. Q. *Make sure you leave details of your planned trip with someone ashore is a very important rule before you go to sea. List three details of what you should include and what you should not forget?*

- A.
 - Include departure and arrival times.
 - Point of destination and route.
 - Description of the boat.
 - Names of all persons on board and a contact number ashore.
 - If you change any of the above, remember to inform your contact ashore.

64. Q. *Know your limitations is a very important saying in relation to safety at sea, what limitations should you consider. Name three?*

- A.
 - Sail within your own ability.
 - Sail within the ability of your crew
 - Ensure you have sufficient experienced crew for the trip, particularly if it is overnight
 - Know the limitations of your boat
 - Do not overload the boat as it will make it unstable.

65. Q. *Lifejackets and safety harnesses are essential and should be provided for everyone on board. What other items are essential, and what is essential about lifejackets, and what else is essential to know?*

- A.
 - Ensure sets of warm and protective clothing are available including sunglasses
 - They could ensure your survival, but only if worn
 - Everyone must know what to do in a man overboard situation - It could be YOU.

66. Q. *Being able to call help is important at sea in case of emergency. List three methods that you can use?*
- A. • A VHF radio, which can be used to call the coast guard or another boat.
• Carry a portable foghorn
• The whistle fitted to your lifejacket to attract attention
• Mobile phone. (Can not be depended on as coverage is problematic).
67. Q. *Carry an anchor with adequate chain and rope and a radar reflector is good advice, why?*
- A. • A length of chain adds weight to the anchor and will improve its holding capability
• Ensure your anchor cable is of sufficient length for the area in which you are sailing
• A radar reflector will assist with detection by other vessels, particularly in reduced visibility.
68. Q. *What other six additional items is it advisable to carry on a small boat?*
- A. • A set of oars or a small auxiliary outboard are advisable
• A spare can of fuel is essential and should be clearly marked if different types are carried, e.g. petrol or diesel
• Always carry a tow-rope and ensure you have a strong towing point in the fore end of the boat
• Carry a first aid kit
• A torch
• In-date distress flares
69. Q. *Be aware is good advice in small boats at all times. Give three things to be aware of?*
- A. • Keep a good look out at all times and be aware of your surroundings
• Be sensible about drinking alcohol - it will impair your judgement
• If you smoke be careful - a fire at sea can be disastrous
• Always turn cooking gas bottles off at source when not in use
70. Q. *Keep an eye on the weather and sea conditions. Seek shelter in good time, is good advice. Give three additional pieces of advice?*
- A. • Do not press on regardless - make for a safe haven in good time
• If in doubt, call for help - don't leave it too late
• Remember - it is easier to find you and provide assistance in daylight than in darkness"

71. Q. Give eight instances that may cause a boat to get into difficulties?

- A. (1) Very bad weather e.g. storm conditions.
- (2) Engine failure.
- (3) Fire on Board.
- (4) Malfunction of the rudder or steering equipment.
- (5) Malfunction of Navigational equipment.
- (6) Collision with rocks or other object
- (7) Malfunction of the radio or radar equipment.
- (8) Lack of proper training of the crew.

72. Q. Give eight life saving devices or equipment which should be carried on a fishing boat?

- A. (1) Life Buoys.
- (2) Life Jackets
- (3) Life Boats.
- (4) Life Rafts.
- (5) Life lines and harness
- (6) Flares.
- (7) Communication Equipment.
- (8) Personal Protective Equipment.

73. Q. Give eight ways of avoiding accidents at sea?

- A. (1) Correct lighting, particularly in hours of darkness.
- (2) Fog warning in poor visibility conditions.
- (3) Proper monitoring of radio gale warnings.
- (4) Regular maintenance of engine and equipment.
- (5) Correct balancing of cargo.
- (6) Prevention of overloading.
- (7) Proper watch keeping and lookout.
- (8) Correct covering of hatches.
- (9) Reduce speed when necessary.
- (10) Regular emergency drills for crews.

SAFETY ON MACHINES

1. **Q. Which is more dangerous, a flat belt or a V belt, qualify your answer?**
A. A "V" belt is more dangerous because it has a shearing action.
2. **Q. If an inspection cover is necessary in a solid guard, what additional precaution should you take?**
A. Fit a mesh guard under the removable inspection cover.
3. **Q. Is it safe to wear a ring, watches, jewellery etc. while working on a machine?**
A. No - They may get caught and increase the risk of an accident, or it may make a minor accident worse.
4. **Q. Give two methods that may be used when oiling machinery if the machinery cannot be stopped and isolated?**
A.
 1. Oil can be supplied from a remote position.
 2. Oil cups can be fitted, and filled when machinery is stopped.
5. **Q. What is the danger of loose fitting clothing near running machinery?**
A. The clothing may get caught in the machinery causing injury to the wearer.
6. **Q. What is meant by a fixed guard?**
A. A guard securely in position and immovable.
7. **Q. Name two types of guarding?**
A.
 1. Fixed.
 2. Automatic
 3. Interlocking.
 4. Distance.
8. **Q. What is meant by "Safety by Position"?**
A. Machinery or equipment the dangerous parts of which are out of reach.
9. **Q. What are the two principal criteria for a fixed guard?**
A.
 1. It must be secure.
 2. Properly maintained.

SAFETY ON MACHINES

10. Q. *Give two ways you would make an electrically driven machine safe to do work on?*
- A. 1. Lock out the switch.
2. Remove the fuses.
11. Q. *What two actions are necessary before cleaning moving machinery?*
- A. 1. Stop machinery.
2. Isolate power.
3. Lock out.
12. Q. *What is the main risk in the use of grinding wheels?*
- A. The wheel may burst during grinding.
13. Q. *When doing repairs on plant or machinery what is the best system to work?*
- A. Permit-to-work System.
14. Q. *Should a guard ever be removed?*
- A. No, unless the machine is stopped.
15. Q. *What two things should you do if a guard is defective?*
- A. 1. Stop the equipment.
2. Report it.
16. Q. *Can a smooth shaft in motion be dangerous?*
- A. Yes, clothing can get caught in it.
17. Q. *Is wire mesh fencing safe, qualify your answer?*
- A. Yes, so long as no dangerous part can be reached through it.
18. Q. *Why is it necessary to guard the stock bar of a lathe?*
- A. Because it is as dangerous as a running shaft.
19. Q. *Apart from all the dangerous parts of a machine, should the moving work piece be guarded?*
- A. Yes, as it becomes part of the machine.

SAFETY ON MACHINES

20. Q. *What two things should be done with long hair while working near machinery?*
- A. 1. Should be worn short.
2. Covered or tied back.
21. Q. *Have chucks and drills on power machines to be guarded?*
- A. Yes.
22. Q. *Give two types of common guarding suitable for in-running nips of rollers?*
- A. 1. Nip guards.
2. Distance guards.
23. Q. *With regard to a worker being aware of work equipment control devices that affect safety. Can you name two of the three essential requirements outside training?*
- A. 1. Clearly Visible.
2. Easily Identifiable.
3. Appropriately Marked.
24. Q. *In the design of work equipment control systems what is important to ensure if a control system breaks down or is damaged?*
- A. A dangerous situation must not result.
25. Q. *What are the two essential considerations in the locating of control devices on work equipment?*
- A. 1. They must be located outside danger zones.
2. Their operation must not cause an additional hazard.
26. Q. *What two key factors make a machine guard an interlocked guard?*
- A. 1. It can not be removed while the machine is running.
2. The machine cannot run if the guard is not in place.
27. Q. *Give four functions of a wheel guard on a bench grinder?*
- A. 1. Contain the wheel.
2. Protect the wheel.
3. Protect the operator.
4. Prevent the use of oversized wheels.

28. Q. Give four factors that are essential in a machine guard?

- A. 1. Suitable design.
- 2. Good construction.
- 3. Sound material
- 4. Strong and rigid.
- 5. Easily adjustable.

29. Q. Name four types of guarding?

- A. 1. Fixed.
- 2. Automatic.
- 3. Interlocked.
- 4. Distance.

30. Q. How should treadle guillotines be guarded?

- A. By fixed guards back and front, allowing entry for the work only.

31. Q. When fitting a new abrasive wheel to a bench mounted grinding machine, why is it necessary to know the speed of the machine spindle?

- A. To ensure the speed of the machine spindle does not exceed the maximum permissible speed of the wheel.

32. Q. What is required of an abrasive wheel hood guard which includes a work rest, on a pedestal type grindstone. Give four?

- A. 1. The guard should have sufficient strength to contain fragments in the event of a wheel bursting.
- 2. Have a minimum work opening, thus minimising the risk of the operator being in contact with the wheel.
- 3. The guard should be adjustable to allow for wheel wear.
- 4. The work rest should be within 3 mm of the wheel face.

33. Q. Give four dangerous parts of machines which must be fenced?

- A. 1. Gears.
- 2. Shafts.
- 3. Nips of rollers.
- 4. Couplings.
- 5. Setscrews.
- 6. Pulleys.
- 7. Vee - Belts.

34. Q. *What two important pieces of information should be displayed at a grinding machine?*

- A. 1. The safe working peripheral speed.
- 2. The speed of drive to give that speed.

35. Q. *Name six Hazards from which Radial Drill Operators should be protected?*

- A. 1. Eye Injuries, they should use I2 (Impact 2) Protection.
- 2. Loose Clothing.
- 3. Long Hair.
- 4. The Wearing of Gloves.
- 5. Having Bandages or Rings on Fingers.
- 6. Unguarded Drill, Chuck and Spindle.
- 7. Unsecured work piece.
- 8. No Emergency Stop Button.
- 9. Health Hazard from Drill Coolant.

36. Q. *Name six precautions that must be observed for the safe operation of a pedestal grinding wheel?*

- A. 1. That the correct grade of wheel is fitted for the work.
- 2. That the tool rest is properly adjusted.
- 3. That the wheel guard is properly fitted.
- 4. That eye protection is worn by wheel operators.
- 5. That the wheel is free from excessive wear.
- 6. That the wheel surface is not glazed.
- 7. That the wheel is free from cracks and chips.

37. Q. *Where there is a risk of mechanical contact with moving parts of work equipment which could lead to accidents, those parts must be provided with guards or devices to prevent access to danger zones or to halt movements of dangerous parts before the danger zones are reached. Can you name the six most essential requirements of such guards and protection devices?*

- A. 1. Be of robust construction.
- 2. Must not give rise to any additional hazard.
- 3. Must not be easily removed or made inoperative.
- 4. Situated at sufficient distance from the danger zone.
- 5. Not restrict more than necessary the view of the operating cycle of the equipment.
- 6. Allow operations necessary to fit or replace parts and for maintenance work, restricting access only to the area where the work is to be carried out and, if possible, without removal of the guard or protection device.

TEMPERATURE & HEATING

1. Q. *How many British Thermal Units are given off by the body of an adult seated and at rest?*
A. 400 B.T.U.s per hour.
2. Q. *Is it desirable to have warm heads and cold feet?*
A. No, the opposite is preferable.
3. Q. *What is important about the means of heating?*
A. It must not be injurious to a person.
4. Q. *What temperature is required where woodworking machinery is used?*
A. 50 degrees F.
5. Q. *Where flammable liquids are concerned, what precaution must be taken in respect of heat availability?*
A. No temperature should be high enough to ignite the vapour.
6. Q. *Should the temperature be the same in every part of a room?*
A. No, it should be diverse to get movement of air.
7. Q. *Apart from temperature, what other conditions affect the body?*
A. Humidity.
8. Q. *Does the movement of air by a fan reduce the temperature in a room?*
A. No, it only appears to, by passing it over the skin.
9. Q. *Give two reasons for insulating walls and ceilings?*
A. 1. To keep the heat in.
2. To keep the cold out.
10. Q. *What common substance is given to people who sweat profusely in a hot working environment?*
A. Salt, in the form of tablets

11. Q. *What four factors affect the sensation of warmth?*

- A. 1. Air temperature.
- 2. Degree of activity.
- 3. Humidity.
- 4. Type of clothing.
- 5. Air movement.

12. Q. *Which of the following characteristics are preferable in a workroom, (a) cool or hot (b) dry or damp (c) still or moving?*

- A. (a) cool.
- (b) dry.
- (c) moving.

13. Q. *The guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007 Chapter 1 of Part 2: Workplace indicates that the temperature in rooms in which people work must be adequate having regard to four key considerations. Can you give the four considerations?*

- A. 1. Be of robust construction.
- 2. Must not give rise to any additional hazard.
- 3. Must not be easily removed or made inoperative.
- 4. Situated at sufficient distance from the danger zone.
- 5. Not restrict more than necessary the view of the operating cycle of the equipment.
- 6. Allow operations necessary to fit or replace parts and for maintenance work, restricting access only to the area where the work is to be carried out and, if possible, without removal of the guard or protection device.

TOOLS

1. **Q. *Why should a file not be struck with a hammer or other hard object?***
A. The highly tempered metal is brittle and is most likely to shatter.
2. **Q. *What must be done with tangs of files?***
A. Handles must be fitted before using the file.
3. **Q. *Mushroom heads on chisels may cause flying chips of metal. What should you do?***
A. Grind them with a slight bevel towards the head to prevent mushrooming.
4. **Q. *Give two faults that may develop in a hammer?***
A.
 1. Loose head.
 2. Split handle.
 3. Mushroomed head.
5. **Q. *What should be done with defective tools?***
A. They should not be used, and either repaired or rejected.
6. **Q. *When using knives, should you cut towards the body or away from it?***
A. Away from it.
7. **Q. *Must all portable electric tools be earthed?***
A. Yes, unless they are of the double insulated type.
8. **Q. *What should be done with defective tools?***
A. They should be rejected and returned.
9. **Q. *What four precautions must be taken when using a spanner or key?***
A.
 1. Correct size.
 2. Good condition.
 3. Do not lengthen.
 4. No finger traps.
10. **Q. *Give four hazards of cartridge operated tools?***
A.
 1. Ricochets.
 2. Rebounds.
 3. Going through.
 4. Noise.

TOOLS

11. Q. *The efficiency and safe working of grinders and grinderettes depend on what two conditions?*
- A. 1. The correct wheel for the job.
2. The wheel properly mounted.
12. Q. *There are two types of cut off discs available, reinforced or unreinforced. Which should be used on portable hand held machines?*
- A. The Reinforced type.
13. Q. *Which of the following type of discs, aluminium oxide or silicon carbide, should be used for grinding masonry or cast iron?*
- A. Silicon Carbide.
14. Q. *Name the most likely machine in a metal working factory that you might expect to find guarded by infra red light beams?*
- A. A Press Brake.
15. Q. *Name four safety features concerning portable electric grinding machines?*
- A. 1. The machine should be double insulated.
2. The power cable should have a tough sheath and be connected to a proper plug incorporating an earth connection.
3. The machine should be well maintained and the earth connection tested.
4. The use of low power, centre point tapped transformer is recommended.
5. The machine should not be lifted, lowered, or dragged by its power cable.

TRANSPORT

1. **Q. *Before starting to move a vehicle what should be done?***
A. Look all round it.
2. **Q. *Why should a forklift truck have its forks at the lowest point when loaded?***
A. To lower the centre of gravity and give the driver a better view.
3. **Q. *Why should a forklift truck have its forks at the lowest point when unloaded?***
A. It is the safest position.
4. **Q. *When carrying high loads, in which direction would you, drive a forklift truck?***
A. In reverse.
5. **Q. *Do you consider forklift truck driving a skilled job?***
A. Yes.
6. **Q. *How often should maintenance be done on trucks?***
A. Daily.
7. **Q. *How can traffic be controlled in a factory yard?***
A. Use signs and marking similar to those used on the roads.
8. **Q. *What is essential about painted signs on roadways?***
A. They should be clearly visible and well maintained.
9. **Q. *What is the legal age to drive a tractor on a farm?***
A. 14 years.
10. **Q. *Name four Safety Factors to be exercised when using mobile equipment within a works or site?***
A.
 1. Watch out for overhead obstruction.
 2. Be extra careful at corners.
 3. Avoid uneven or soft ground.
 4. Keep the speed down.
 5. Secure loaded materials properly.

11. Q. *Give four points of care when loading a hand truck?*
- A. 1. Not too high.
2. Properly stacked.
3. Properly balanced.
4. Secure.
12. Q. *Give the four main points to consider when guiding a driver in his lorry?*
- A. 1. Have a clear view.
2. Stand in full view.
3. Keep a keen lookout.
4. Give clear signals.
13. Q. *At what length is it necessary to display a "Long Vehicle" sign?*
- A. 13 metres or 40 feet.
14. Q. *What is the recommended minimum safe distance between two forklifts travelling in the same direction?*
- A. Three truck lengths.
15. Q. *What two essential considerations must be taken into account in deciding the dimensions of routes used for safe pedestrian and / or goods traffic?*
- A. 1. The number of potential users.
2. Type of undertaking involved.
16. Q. *What two specific safety considerations are required in the equipping of escalators and travelators?*
- A. 1. Any necessary safety devices.
2. Easily identifiable and accessible shutdown devices.
17. Q. *Where are loading bays over a certain length required to have Exit Points located?*
- A. At each end.
18. Q. *What two essential safety requirements are necessary where mechanical doors and gates are used for building entry?*
- A. 1. Emergency shut down devices must be fitted.
2. They must be capable of manual operation, unless they open automatically on power failure.

19. Q. *What is a 'rider-operated lift truck'?*

A. A 'rider-operated lift truck' means any truck capable of carrying an operator, including trucks controlled from both seated and stand-on positions, which may be fixed or foldaway.

20. Q. *Should a non-integrated working platform be CE marked, explain your answer?*

A. NO. As the occasional use of non-integrated working platforms is only allowed in some EU member states, there is no free movement of these platforms allowed throughout the EU, and, as such, they must not be CE marked.

21. Q. *List four precautions which should be taken to minimise risk from driving at work?*

- A.
- Plan work to minimise driving requirements
 - Ensure that the vehicle is maintained in accordance with the manufacturer's instructions, including specific winter and summer precautions
 - Take sensible breaks and seek to avoid overlong days of work and driving
 - Follow the personal safety precautions outlined in the Lone Worker arrangements
 - Report the development of any health problem which may limit or prevent driving (such as epilepsy)

22. Q. *List the four types of road signs that can be seen in Ireland?*

- A.
1. Warning Signs
 2. Regulatory Signs
 3. Information Signs
 4. Roadwork Signs.

23. Q. *List four activities that should be considered when carrying out risk assessments for transport?*

- A. Activities may include:
1. Arrival and departure;
 2. Travel within the workplace;
 3. Loading, unloading and securing loads;
 4. Sheeting;
 5. Coupling; and shunting
 6. Vehicle maintenance work.

24. Q. *What is a TREMCARD, where would you expect to find it, and what information would it give you?*
- A. 1. It is a "Transport Emergency Card"
 2. It is carried by vehicles carrying hazardous materials.
 3. It would tell you, (a) The name of the material being carried, (b) A description of its appearance and properties, (c) Its hazards and precautions against these hazards, (d) The action necessary in the event of fire or spillage.
25. Q. *What is the minimum level of training required for lift truck operator's. Give three points?*
- A. • Basic training must be given on all the types of lift truck that operators will or could be required to use
 • Training in all attachments that operators will or could be required to use in their work.
 • Note should be taken of Code of Practice on Rider-operated lift trucks
 • In the case of novice drivers a 5 day training course should be considered.
26. Q. *What is the difference between an integrated working platform and a non integrated working platform for forklifts?*
- A. An integrated working platform is an attachment on a forklift:-
 • With controls that are linked to and isolate the truck controls.
 • So that only the person in the platform can control the lift height of the platform.
 • So that only the person in the platform can control the truck movements.
- A non-integrated working platform is an attachment for use in conjunction with a forklift truck.
 • That elevates people, but they have no controls in the platform.
 • All truck and working platform movements are controlled by the truck operator.
 • The use of this type of platform is only permitted in exceptional circumstances.
27. Q. *What safe work practices should be considered before driving an All Terrain Vehicle (ATV). Give three?*
- A. The following safe practices should be considered:-
 • Provide all drivers with adequate training. There is a legal requirement for employers and the self-employed to ensure training for work equipment such as ATVs
 • Operators must take note of manufacturer's instructions particularly those relating to driving on slopes and rough terrain

TRANSPORT

- Plan the use of ATVs carefully and take particular note of variations in ground conditions and gradient
- Remember increasing speed increases vehicle instability and the risk of overturning
- Wear head protection, which protects the head and neck. Protective helmets which meet BS 6658:1985 are suitable.

28. Q. *Tractors are potentially lethal and accidents involving tractors account for a very high proportion of all farm accidents each year. What six steps can be taken on farms to prevent accidents involving tractors?*

- A.
- Ensure that the tractor is maintained in good working condition
 - Ensure that a cab or safety frame is fitted
 - Ensure that all controls are in good working order and clearly marked
 - Ensure that brakes are checked regularly and are always in sound working condition
 - Ensure that all relevant guards are in place and that PTO and Hydraulics are functioning correctly
 - Ensure that mirrors, lights and wipers are in working order at all times
 - Ensure that the tractor is always parked safely

29. Q. *In most years up to half the fatal workplace accidents involve vehicles at the place of work. In addition, many more people are seriously injured. List six common accidents related to vehicles?*

- A.
- Being struck or run over by a vehicle or its trailer
 - Falling from vehicles
 - People being struck or suffocated by a load
 - Vehicles overturning
 - Vehicles running out of control
 - Vehicles touching powerlines
 - Vehicles being driven by untrained drivers

30. Q. *Describe three of the following road signs (shape and colour)?*

1. *Warning Signs*
2. *Regulatory Signs*
3. *Information Signs*
4. *Roadwork Signs*

- A.
1. Yellow diamonds with black lettering
 2. Black letters on white background with red surround usually round may be triangles
 3. They may have black lettering on a white background or white lettering on a green background. Usually rectangular.
 4. Black on orange diamond or rectangle

31. Q. *Diesel engine exhaust emissions (commonly known as 'diesel fumes') are a mixture of gases, vapours, liquid aerosols and substances made up of particles. They contain the products of combustion. List six components of diesel engine exhaust emissions?*
- A. • carbon (soot);
• nitrogen;
• water;
• carbon monoxide;
• aldehydes;
• nitrogen dioxide;
• sulphur dioxide;
• polycyclic aromatic hydrocarbons.
32. Q. *List six effects diesel and diesel fumes can have on your health?*
- A. • Irritation of the eyes or respiratory tract
• Coughing,
• Chestiness
• Breathlessness
• Dermatitis
• Lung cancer.
33. Q. *Workplace transport means any vehicle that is used in a work setting, list six?*
- A. 1. Forklift trucks
2. Compact dumpers,
3. Tractors
4. Mobile cranes.
5. Cars,
6. Vans
7. Large goods vehicles.
34. Q. *Drivers should never leave their vehicle without ensuring that the vehicle and its trailer are in what state. List six?*
- A. • Securely braked,
• Engine is stopped,
• The starter key removed,
• Mounted equipment lowered to the ground
• Trailer chocked
• Safely parked.

35. Q. *If you have a child or young person aged 14 or over and you have permitted them to drive a tractor or self-propelled machine on the farm, what eight steps should you take before you allow them to drive?*

- A. • Ensure that they have attended a formal training course run by a competent training provider
- Ensure that they are closely supervised by a responsible adult
 - Ensure that they have the ability to operate the controls with ease
 - Ensure that all the controls are conveniently accessible for safe operation by the operator when seated in the driver's seat
 - Ensure that the controls which operate the power take off (PTO) devices, hydraulic devices and engine cut-off are clearly marked to show the effect of their operation
 - Ensure that the tractor is maintained so that it is safe for them to operate
 - Ensure that the ground over which the tractor is driven is free from hazards such as steep slopes or excavations, river banks, lake or pond edges, deep ditches and similar areas
 - Ensure that the young person is not accompanied by a friend, who would not have received training.

36. Q. *Vehicles at the workplace must be safe and suitable for work for which they are being used. List eight aspects that may have to be taken into account?*

- A. • Are vehicles purchased or leased with all the recommended safety features? (This is particularly important when second-hand vehicles are purchased or leased).
- Do they have suitable and effective service and parking brakes?
 - Are they provided with horns, lights, reflectors,
 - Reversing lights, alarms and other safety features as necessary?
 - Do they have seats and, where necessary, seat belts that are safe and allow for driver comfort?
 - Are there guards on dangerous parts of the vehicles, e.g. power take offs, chains drives, exposed exhaust pipes?
 - Do drivers need protection against bad weather conditions, or against an unpleasant working environment, e.g. against cold, dirt, dust, fumes and excessive noise and vibration?
 - Is there a safe means of access to and exit from the cabs and other parts that need to be reached?
 - Is there a need for driver protection against injury in the event of an overturn, and to prevent the driver being hit by falling objects?
 - Is there a necessity for closed circuit television (CCT) or sensors for reversing?
 - Is there a need for emergency stops outside the vehicle?

VENTILATION

1. **Q. *How should adequate ventilation be provided?***
A. By circulation of fresh air.
2. **Q. *What is the reason for good ventilation?***
A. To render harmless dust and fumes.
3. **Q. *If a confined space has not been certified as safe, can a person enter it?***
A. Yes, if they are wearing breathing apparatus.
4. **Q. *Does a dust mask give protection against fumes?***
A. No.
5. **Q. *Name two types of respiratory protection?***
A. 1. Dust Mask.
2. Gas Mask (Cartridge).
3. Breathing Apparatus.
6. **Q. *What is a dust cloud?***
A. Small particles of solid matter dispersed in air.
7. **Q. *What is the best way of controlling harmful dusts?***
A. Remove them at the source.
8. **Q. *What type of ventilation is suitable for dealing with fumes, which arise from point sources such as grinding or welding?***
A. Local exhaust ventilation.
9. **Q. *What type of ventilation is suitable for dealing with low concentrations of low toxicity substances?***
A. General ventilation
10. **Q. *Why are right angle bends bad in ducting?***
A. Eddy currents are caused and efficiency reduced.
11. **Q. *Should ducting inlets be bigger than outlets?***
A. Yes, inlets should be bigger than outlets.

VENTILATION

12. Q. *Name two of the Authorities who have regulatory control over dust and fume emissions?*
- A. 1. The Local Authority.
2. The Environmental Protection Agency.
3. The Health and Safety Authority.
13. Q. *Name two important points in relation to air filter operation?*
- A. 1. Cleaned regularly
2. Efficiently maintained.
14. Q. *If work has to be done in an enclosed space, what two things should be done before entry?*
- A. 1. Ventilated.
2. Tested.
15. Q. *If a room is being ventilated for fumes that are heavier than air, where should the inlets and outlets be placed?*
- A. The inlets are high and the outlets are low.
16. Q. *If a room is being ventilated for fumes that are lighter than air, where should the inlets and outlets be placed?*
- A. The inlets are low and the outlets are high.
17. Q. *What is the best system for heavier than air fumes?*
- A. Sucked through slots in the floor and removed to a safe place.
18. Q. *If fumes are flammable, what two things are necessary about the fan motor?*
- A. 1. Suitable Electrical Classification.
2. Sited outside exhaust stream.
19. Q. *If lack of oxygen is suspected, what should be done?*
- A. Tests made and fresh air supplied.
20. Q. *The movement of air by a fan appears to reduce the temperature in a room. Does it reduce the room temperature, explain your answer?*
- A. No it does not reduce the room temperature, it passes the air over the body thus increasing the heat loss and reducing body temperature.

VENTILATION

21. Q. *Give four factors on which the effects of dust on the respiratory system depend?*

- A. 1. The type of dust.
2. The toxicity of the dust.
3. Particle size distribution.
4. Amount of dust entering lungs.
5. State of health of the individual.
6. Tolerance of the individual.

22. Q. *The danger of a dust to health depends very much on the size of the particles. Which of the following are the most dangerous and why?*

- (a) 0.2 microns to 5.0 microns.
(b) 200.0 microns to 500.0 microns.
(c) 5.0 mm to 10 mm."

- A. (a) 0.2 microns to 5.0 microns.
Larger particles are usually unable to penetrate the lung defences.

23. Q. *What instrument is used to study dust clouds which is named after its inventor?*

- A. Tyndallometer

24. Q. *What is the difference between smoke and fumes?*

- A. Smoke - is a suspension of solid particles produced by incomplete combustion of organic material.

Fumes - are produced by sublimation or condensation of volatile solids, which may not be as a result of combustion.

25. Q. *What is the difference between a gas and a vapour?*

- A. Gas - is a substance that exists only in gaseous form at standard temperature and pressure.

Vapour - is the gaseous form of a substance normally found as a liquid at standard temperature and pressure.

26. Q. *With exhaust ventilation systems which is best, qualify your answer (a) large openings with slow moving air or (b) small openings with fast moving air?*

- A. (b) Because the greater the velocity the greater the quantities of dust etc. that are removed.

VENTILATION

27. Q. *The types of Dust Extraction Equipment can be classified into four main areas based on the principal utilised. Name three of the four?*
- A. 1. Centrifugal Separation.
2. Wet Scrubbing.
3. Electrostatic Precipitation.
4. Filtration.
28. Q. *In designing a local exhaust ventilating system there are five essential parts to consider. Name three of them?*
- A. 1. The source of the dust.
2. The Hood.
3. The Ducting.
4. The air cleaning plant.
5. The Fan.
29. Q. *Name three types of test equipment which check ventilation performance?*
- A. 1. Smoke Tubes, these give a visual assessment of the capture of at a ventilation hood.
2. Pressure Gauges, Manometers, or Pitot Tubes measure pressure drops.
3. Vane Anemometers measure velocity of flow.
30. Q. *Which unit of measure is normally used to measure the size of dust particles?*
- A. Micron, or Micrometer.
31. Q. *Name six of the general contributors to air pollution?*
- A. 1. Smoke.
2. Sulphur Dioxide.
3. Particles.
4. Nitrogen Oxides.
5. Carbon Monoxide.
6. Lead.
7. Hydrocarbons.
8. Radioactivity.
9. Grits & Dusts.

VENTILATION

32. Q. *The HSA Guide to the Safety, Health and Welfare at Work (General Application) Regulations 2007, Chapter 1 of Part 2: Workplace, indicates that in a place of work the provision of natural or forced ventilation will depend on five factors. Name four of these factors?*
- A. 1. The processes, materials and substances which are liable to contaminate the atmosphere, released heat or humidity,
2. Atmosphere, released heat or humidity,
3. Design of the building,
4. Volume of the workplace itself,
5. Number of occupants, including any animals,
6. Physical activity of the occupants or any animals,
7. Location of a workstation within a building.

WOODWORKING

1. **Q. *What 2 categories of people can use a woodworking machine?***
 - A. 1. Fully trained competent people.
 2. A trainee under the direct supervision of a fully trained competent person.

2. **Q. *What are the two principal benefits of keeping circular saw blades sharp?***
 - A. 1. It cuts more easily and quickly.
 2. It considerably reduces the noise level.

3. **Q. *Should portable electric circular saws be guarded?***
 - A. Yes.

4. **Q. *Why should there be a clear and unobstructed space around a woodworking machine?***
 - A. To give the person room to work.

5. **Q. *Why should the floor be kept free from loose material around a woodworking machine?***
 - A. To remove tripping hazards.

6. **Q. *Is there a requirement to have good lighting at woodworking machinery?***
 - A. Yes.

7. **Q. *How must a circular saw be fenced?***
 - A. Over the top as far as possible, and under the bench.

8. **Q. *What is the purpose of a riving knife?***
 - A. To keep the wood from binding at the back of the saw.

9. **Q. *What is the purpose of a push-stick?***
 - A. To guide the wood through the saw and keep the hands out of danger.

10. **Q. *If you can not use an efficient guard on a vertical spindle moulder, what should you do?***
 - A. Use a jig or holder.

WOODWORKING

11. Q. *What are the duties of a person employed at a woodworking machine?*
- A. Use the guards and other safety devices.
12. Q. *What is the minimum temperature required in the area of a woodworking machine?*
- A. 10 degrees Celsius.
13. Q. *Give four areas to be stressed when training a person for a woodworking machine?*
- A. 1. The Dangers.
2. The Precautions.
3. The use of guards.
4. Use of personal protection.
5. Statutory Requirements.
6. Good Housekeeping.
14. Q. *How must a circular saw be protected. Give four points?*
- A. 1. Over the blade.
2. Under table section of blade
3. Riving knife at rear of blade
4. Emergency stop button.
15. Q. *Explain the purpose of a Riving Knife on a circular saw?*
- A. It prevents the sides of the incompletely cut timber from closing on the up running part of the saw, thus preventing the timber from being thrown upwards or forwards. It also protects the rear of the blade.
16. Q. *The spindle moulder is considered the most dangerous woodworking machine. Name six general causes of accidents on the machine?*
- A. 1. The potential for personal injury if the work is "Kicked Back".
2. The projection or breakage of tools.
3. The projection of the stock being worked.
4. Contact with the transmission elements of the machine.
5. The hand being dragged by the auto-feed device.
6. Involuntary contact of the hand with the tool.
17. Q. *What essential notice should be attached to each Circular Sawing Machine?*
- A. A notice specifying the diameter of the smallest saw blade which may be used in the machine.

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