

Design & Technology

Health and safety laws, regulations and impacts on the designing and making process

Materials required for questions

- Pencil
- Rubber
- Calculator

Instructions

- Use black ink or ball-point pen
- Try answer all questions
- Use the space provided to answer questions
- Calculators can be used if necessary
- For the multiple choice questions, circle your answer

Advice

- Marks for each question are in brackets
- Read each question fully
- Try to answer every question
- Don't spend too much time on one question

Good luck!

Q1. What does this warning symbol mean?



- A** Hazardous product
- B** Corrosive
- C** Dangerous for the environment

Q2. What does this warning symbol mean?



- A** Corrosive
- B** Flammable
- C** Toxic

Q3. Which symbol indicates a chemical that should be used in a fume cupboard?

A



B



C



Q4. Which of these is NOT an example of personal protective equipment (PPE)?

A

Goggles

B

Clamps

C

Chainmail gloves

Q5. Which of these is required by law to ensure safe use of tools, equipment and materials?

- A** Risk assessment
- B** COSHH report
- C** PAT testing

Q6. Which one of the following statements is true?

- A** Safety guards on workshop machinery are not needed when an adult is present.
- B** Quality Control only occurs when the production process is complete.
- C** COSHH regulations control the level of exposure of workers to softwood dust.

Q7. Which one of the following statements is false?

- A** Manufacturers must follow COSHH regulations
- B** COSHH stands for Control of substances harmful to health
- C** Safety sign regulations require employees to display an appropriate safety sign wherever a significant risk cannot be avoided or reduced

Q8. What does the health and safety work act do (1974)? **(3 marks)**

Q9. If **two** control measures, other than personal protective equipment (PPE), used during the pouring of a pewter sand casting in the school workshop **(2 marks)**

Q10. Explain the safe work practices necessary to protect workers when using solvent adhesives **(6 marks)**

[illegible]

Q11a. One safe working practice when operating a bandsaw would be to wear personal protective equipment (PPE). Give two other safe working practices when operating a bandsaw. **(2 marks)**

Q11b. Manufacturing companies comply with a wide range of health and safety legislation and regulations to protect workers. Discuss the consequences for a company of non-compliance with health and safety legislation and regulations. **(6 marks)**

[illegible]

Answers

Q1. A

Q2. C

Q3. A

Q4. B

Q5. A

Q6. C

Q7. B

Q8.

- Under this Act of parliament, employers are legally required to do all that is reasonably practicable to ensure the health, safety and welfare at work of employees
- This also applies to the health and safety of non-employees such as students and visitors to the school
- The following regulations are procedures to safeguard the risk of injury to people

Q9.

- Use of localised ventilation extract/hood. (1)
- Use of screens to separate user from molten metal. (1)
- Sand floor to stop rapid spread of pewter if aluminium spilled. (1)
- Specialist tools to lift crucible and pour pewter. (1)

Q10.

- Users should be aware of COSHH guidance that governs their use, storage and disposal. (1)
- Users must store the adhesive in a COSHH cupboard when not in use. (1)
- The adhesive may be irritant to skin so correct PPE should be worn e.g. gloves
- The adhesive may be a liquid so correct PPE such as goggles should be worn. (1)
- Vapours that can be released can be highly flammable so no naked flames should be present when using the adhesive. (1)
- Users must ensure that instructions have been read and guidance is followed. (1)
- Vapours can be released therefore the adhesive should be used in well-ventilated areas. (1)

- Users must identify and understand the COSHH symbol present which will both govern its use and disposal. (1)

Q11a.

- Check blade tension / movement / damage (1)
- Use a guard / adjust the blade guard and top guides as close as possible to the workpiece (1)
- Use of a push stick for straight cuts / narrow workpiece (1)
- Replace blunt blades to avoid having to use too much forward force (1)
- Keep fingers / thumbs well clear of blade (1)
- Tie back long hair / secure loose clothing / remove gloves (1)
- Check position and operation of emergency stop / kick stop (1)
- Switch off immediately if a blade breaks / becomes jammed / requires clearing (1)
- Use a slide fence for cross cuts (1)
- Always keep the workpiece flat on the table (1)
- Only cut materials that can be fully supported on the bed of the table/do not cut cylindrical materials (1)
- A marked exclusion zone around the machine should be clear of people before starting work. (1)
- Use extraction equipment (1)
- Only used by trained operatives (1)
- Switch off after use (1)
- Lower blade guard after use (1)
- Avoid working alone / work under supervision (1)
- Ensure the area around the machine is clean and clear of clutter / debris (1)

Q11b.

Candidates might refer to the following in their responses:

- Requirements for a safety policy
- Risk assessments
- Method statements
- Safety officer requirements
- Union representation
- Staff training and certification
- Authority of the safety officer
- Ultimate responsibility of owners / directors

- Role of the Health and Safety Executive (HSE)
- Improvement notices (HSE)
- Prohibition notices (HSE)
- Withdrawing approvals, licences or exemptions (HSE)
- HSE cautions
- Prosecution – unlimited fines or imprisonment
- Company reputation
- Difficulties recruiting new employees
- Blacklisting / loss of consumer confidence
- Negative publicity / reputation loss
- Difficulties obtaining employers liability insurance
- Increased costs to the company