

Design & Technology

A-Level

Adopting safe working practices, recognise and react to potential hazards

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
- Use a cross in the box to mark you 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. Which piece of safety equipment should be worn when using a pillar-drilling machine? – edexcel 2015

A Goggles

☐

B Heat protective glove

☐

C Ear defenders

☐

Q2. Which statement about hazards and risks is correct? – bitesize

A A hazard is a potential problem.
A risk is the likelihood that the problem will occur.

☐

B A risk is a potential problem. A hazard is the likelihood that the problem will occur.

☐

C A hazard and a risk are exactly the same thing.

☐

Q3. Which symbol would suggest that the substance is irritant to skin? - self

A

☐

B

☐

C

☐

Q4. Which symbol indicates a chemical that should be used in a fume cupboard? - bitesize

A

☐

B

☐

C

☐

Q5. Which hazard symbol is used for a substance that will help other things burn faster? - bitesize

A

☐

B

☐

C

☐

Q6. Which symbol indicates a chemical that is corrosive?- bitesize

A

☐

B

☐

C

☐

Q7. What kind of substance should always be heated in a water bath, rather than by a Bunsen burner? - bitesize

A A process whereby paint is sprayed onto the Surface of a material

☐

B A process that creates a long-lasting protective Coating on a metal

☐

C A flammable substance

☐

Q8. When would wearing protective gloves and eye protection be most appropriate?– bitesize

A When using corrosive substances

☐




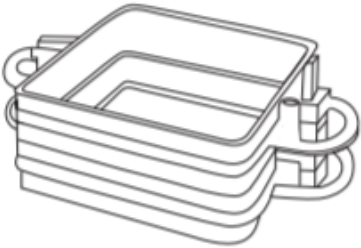
B When using oxidising substances

☐

C When using flammable substances

☐

Q9. Complete the table below by giving the missing names and uses.
– edexcel 2018

Tools/Equipment	Name	Use
	First Aid kit	(1)
	(1)	Protect hearing in the workshop
	Marking gauge	(1)
	(1)	For holding a pattern/ packing sand into when casting

Q10. MDF can be cut and sanded in the school workshop.

Give three health and safety risks of cutting and sanding MDF in the school workshop. **(3 marks)** – edexcel 2018

1.

2.

3.

Q11. Give three risks associated with the use of glass reinforced plastic (GRP) in the school workshop. **(3 marks)**– edexcel 2018

1.

2.

3.

Q12. Describe two health and safety precautions that should be taken when welding. **(4 marks)**

1.

2.

Q13. Give two health and safety issues associated with using a laser cutter. **(3 marks)** – Edexcel 2015

1.

2.

3.

Q14. Before any manufacturing processes are carried out a risk assessment must be completed.

Outline the five steps involved in a risk assessment. **(5 marks)** – edexcel 2016

1.

2.





3.

4.

5.

Q15. Fill in the missing boxes one has been done for you.

(4 marks) –self

Geometric shape	Meaning	Example of use
 Square	Fire equipment	Fire extinguisher
 Square	Safe condition	<hr/> <hr/>
	Prohibition	No smoking
 Circle	Mandatory action	<hr/> <hr/>
 Equilateral triangle with radiused outer corners		Electricity

Answers

Q1. A

Q2. A

Q3. C

Q4. C

Q5. B

Q6. C

Q7. C

Q8. A

Q9.

	Name	Use
ai		Contains / stores / holds plasters / bandages basic medical supplies Do not accept generic descriptors of first aid kit. (1)
a ii	Ear defenders (1) (only answer)	
a iii		Marking / scoring a line parallel to an edge (1)
a iv	Cope and/or drag / moulding flask (1)	

4 x 1

Q10.

Any three health and safety risks given from:

- The dust can cause breathing / throat / lung problems (1)
- Fine particles can cause sore eyes (1)
- General dust / particles can cause problems for others in the workshop / slippery floors (1)
- Fibres in extraction systems can potentially cause explosions / blow out (1)
- You could cut yourself when using saws (1)
- You might catch your skin on the glass paper / disc sander/ cause a scratch / remove skin (1)

3 x 1

Q11.

Any three risks given from:

- The dust / fibres / particles created from cutting / sanding is harmful to breath in / irritating to the eyes (1)
- The glass fibre matting can cause skin irritation (1)

- The fumes given off when using the resin / gel coat are harmful and can cause sickness dizziness / highly toxic (1)
- The resin materials are highly flammable (1)
- Sharp edges left / exposed when cut / cuts to skin (1)

3 x 1

Q12.

Two descriptions from:

- Heat / welding mask / shield / goggles should be worn (1) to avoid arc eye / damage to eyes / sparks / burns(1)
- Tinted goggles / mask (1) to avoid arc eye / damage to eyes (1)
- Ensure welding screens / curtains are closed (2) therefore no risk to others of arc eye / damage to eyes (1)
- Gloves should be worn (1) to avoid any burns to hands / splatter from welding (1)
- Apron should be worn (1) to prevent clothing catching fire (1)
- Any gas bottles should be stored correctly / chained up (1) to prevent them falling over / run the risk of exploding (1)
- Any gas bottles should be fitted with nonreturn valve (1) to reduce the risk of any 'blowback' / explosions (1)
- Extraction / ventilation system should be provided (1) to remove harmful fumes / gases from work area (1)
- Fire extinguisher/blankets should be provided (1) to put out any fires (1)

2 x 1

2 x 1

Q13.

Two issues given from:

- Fumes given off/ inhalation / use of extractor (1)
- Skin burns / burns from laser (1)
- Damage to eyes / blindness / arc eye (1)
- Materials wood / card / paper / fabric can catch fire / burn (1)
- Keep the lid closed to retain fumes / stop potential burns (1)
- Personal injury in the form of burns from hot materials / MDF / Ply (1)

(Do not accept answers related to use of gloves

or goggles)






3 x 1

Q14.

Any five of the following points:

1. Identify the hazards / risks (1)
 2. Identify the people at risk / who might be harmed. (1)
 3. Evaluate the risks / assess the seriousness of it / likelihood of it happening. (1)
 4. Decide / implement / check appropriate control measures / an example of a control measure Eg. guards, PPE, signage, training maintenance, etc. (1)
 5. Record /store the risk assessment (1)
 6. Set a review date / regularly review the risk assessment. (1)
- Note that the order of the points should not be considered.
(1 x 5)

Q15.

Geometric shape	Meaning	Example of use
 Square	Fire equipment	Fire extinguisher
 Square	Safe condition	Emergency exit
 Circle with diagonal bar	Prohibition	No smoking
 Circle	Mandatory action	Wear eye protection
 Equilateral triangle with radiused outer corners	Warning	Electricity