

Design & Technology (Product Design)

DTBase[©]

OCR A-Level

Hardwoods & Softwoods (5.2ai)

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 is one factor that makes hardwoods more expensive than softwoods?

- A** Hardwoods need more care
- B** Hardwoods have higher density
- C** Hardwoods grow slower

Q2. Which of the following is a softwood?

- A** Beech
- B** Birch
- C** Spruce

Q3. Which statement best explains why softwoods like pine and spruce are commonly used in construction?

- A** They are more durable than hardwoods
- B** They grow quickly, making them cheaper and more sustainable
- C** They have a higher density, giving them greater strength

Q4. Why is oak commonly used for flooring and furniture?

- A** It is lightweight and easy to cut
- B** It has high hardness and attractive grain pattern
- C** It grows very quickly and is low cost

Answers

Q1. C

Q2. C

Q3. B

Q4. B

Q5.

- Strong (1) to withstand splitting (1)
- Tough (1) can absorb impacts (1)
- Hard (1) so won't wear away during use (1)
- Dense (1) allowing for high-definition machining (1)
- Stable (1) to prevent warping (1)
- Heavy (1) preventing movement when in use (1)
- Durable (1) so will be long-lasting (1)

Q6.

- Teak has a naturally occurring oil that makes it resist damage and degradation associated with the sun lounger being used and left outside.
- Teak has a good level of hardness meaning it will resist the scratching and abrasion associated with it being used, moved and stored.
- The natural oils in the timber provide a good level of chemical resistance preventing the accelerated degradation of the sun lounger that may be caused by bird droppings or cleaning products.
- Teak is a naturally attractive aesthetic material that requires no additional surface finish for the sun lounger.
- Teak has a close grain pattern making the sections and profile of timber used in the chair strong enough to be suitable for accommodating the weight of the user.
- The natural oils in the teak remove the need for additional preservatives at point of manufacture to be added to the timber, reducing both production and ongoing maintenance costs.
- Teak can be successfully steam bent to create the shallow radiused sections of the sun lounger
- Teak is less prone to splinter or crack over time in the same way that alternative timbers might.