

OCR A-Level

Surface Finishes and Coatings (6.2a)

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. A manufacturer chooses to spray-paint mild steel office furniture. Why is a primer applied before the paint topcoat?

- A** To improve adhesion and provide corrosion resistance
- B** To reduce the density of the steel surface
- C** To strengthen the crystalline structure of the paint film

Q2. Why might a furniture designer avoid using varnish on a budget plywood product?

- A** Varnish reduces the wood's moisture resistance
- B** Varnish makes the surface softer and prone to dents
- C** Varnish highlights surface imperfections rather than hiding them

Q3. When finishing porous timber, why is a sealant often used before applying paint?

- A** To close surface pores, ensuring an even and consistent finish
- B** To increase compressive strength of the wood
- C** To prevent all moisture absorption permanently

Q4. Softwood posts used in garden fencing are commonly treated with preservatives. What is the primary purpose?

- A** To increase the hardness of the timber for mechanical wear
- B** To protect against fungal decay and insect attack
- C** To reduce cost by replacing chemical finishes

Q5. Give **two** aesthetic considerations when selecting materials and/or components to make prototypes. **(4 marks)**

Q7. Describe how aesthetics influence the selection and choice of materials and components in manufactured products. Give an example in your answer. **(3 marks)**

Answers

Q1. A

Q2. C

Q3. A

Q4. B

Q5.

Indicative content

- Surface finish – does the surface need to be shiny or matt?
- Texture – does the surface have a visual appearance?
- Colour – does the material or component need to be coloured in some way?
- Pattern – some materials have a pattern e.g., wood grain, fabric design to enhance appearance.
- Matching – does the material being used match or sit well with other materials used in the prototype?

Responses may also look at:

- will the base material absorb or take a good finish? A material that won't stain or is too flexible to be painted may be rejected.
 - will the aesthetics (looking good) be maintained for a long time? E.g., how long before an object needs re-plating or painting or waxing? etc.
- Accept all other valid responses.

Q6.

3 marks for a detailed descriptive point with an example.

2 marks for a detailed descriptive point or simple descriptive point with an example.

1 mark for a simple descriptive point.

Indicative content:

- colour – ability to colour co-ordinate a product within an environment eg curtain fabric in a lounge
- texture – upholstery fabric for use on a seat eg in a car to improve driving sensation
- finish – a smooth finish pleasant to touch
- shape/form – geometric or organic forms eg architecture. Accept other correct responses.