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Design & Technology
Eduqas GCSE

Papers and boards: surface treatments and finishes

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. Which finish is cured in seconds by high intensity lamps and can be applied to selected areas only?

A Spirit varnish

B UV varnish

C Laminating

Q2. What does debossing do?

A Raises the design above the surface

B Cuts the shape out of the sheet

C Presses the design down into the surface

Q3. Which binding method glues the pages into a square spine, as used for paperback books?

A Perfect binding

B Saddle stitching

C Spiral binding

Q4. What does the Green Dot symbol on packaging mean?

A The packaging can be recycled

B The producer has paid towards recycling packaging

C The packaging is made from recycled material

Q5. What is cropping?

A Trimming the printed sheet to its final size along crop marks, removing the bleed

B Folding a leaflet into a concertina

C Pressing metallic foil onto the surface

Q6. Which of these is a disadvantage of laminating paper and board?

A It makes the surface absorbent

B It reduces tear resistance

C It makes recycling more difficult

Q7. A business card is made from card, with a thin layer of metallic finished plastic bonded to its face.

Q7a. State the name of the process used to bond the plastic to the card. **(1 mark)**

Q7b. Give one reason why the card has the plastic bonded to its face. **(1 mark)**

Q8. The packaging for a lemon squeezer has a shiny gloss finish.

Q8a. State the method used to create the shiny gloss finish on the packaging. **(1 mark)**

Q8b. Identify one benefit of applying a shiny gloss finish. **(1 mark)**

Q9. A set of disposable memory sticks is made from card. The company logo on the front of each memory stick is sunk below the surface of the card. Explain the finishing process used to create the company logo. **(2 marks)**

Q10. Die cutting is used to make card products.

Q10a. A greetings card is made using a die cutting machine. Describe the process of die cutting the greetings card. **(4 marks)**

Q10b. A pizza box is made from corrugated cardboard using a die cutter. Describe one advantage of using a die cutter to cut the material. **(2 marks)**

Q11. Papers, boards and card can have surface finishes applied for different purposes. Describe one advantage of applying a surface finish on papers, board and card. **(2 marks)**

Q12. The lettering on the front cover of a wedding guest book has been produced with hot foil blocking. Explain one reason why hot foil blocking has been used for the lettering. **(2 marks)**

Q13. A cardboard house that holds a battery-powered candle has been finished with an embossed design. Explain two reasons for finishing the cardboard house with an embossed design. **(4 marks)**

Q14. A wall-mounted advertising display has advertising panels made from solid white board. The panels hang from the display on string threaded through punched holes. Explain two benefits of using a UV varnish to finish the surfaces of the advertising panels. **(6 marks)**

Q15. A teaching aid for schools is made from solid white board. It has double-sided number strips that slide up and down through a frame. Give two different surface finishes or treatments that could be applied to the solid white board number strips. Explain one advantage of using each surface finish or treatment. **(6 marks)**

Q16. A wedding guest book has front and back covers made from folding boxboard and pages made from bonded paper. Give two different methods that could be used to join the completed front cover, pages and back cover together. For each method, explain one advantage of using the method. **(6 marks)**

Answers

Q1. B
Q2. C
Q3. A
Q4. B
Q5. A
Q6. C

Q7a.

Lamination or laminating (1). Only acceptable answer.

Q7b.

To make the face stiffer, or to provide the metallic finish (1). Only acceptable answers.

Q8a.

Varnishing, UV varnishing or lamination (1). Credit any other appropriate response.

Q8b.

Any one (1): it improves the aesthetics of the packaging; it adds sophistication; it helps protect the packaging from wear through handling; a UV varnish protects it from being scratched or damaged.

Q9.

Answers must refer to debossing.

- 2 marks for a detailed answer, e.g. debossing is a finishing process that sinks parts of a design below the surface; a die or mould is pushed into the surface of the card, pushing it lower than the rest of the surface. Colour could then be added to that area
- 1 mark for an answer lacking detail, e.g. dents are made in part of the design using a stamp pushed into the surface

Q10a.

Up to 4 marks for a clear understanding of what a die cutter is and how it is used. For example:

- Make sure the die is in the correct location (1)
- Place the card and die carefully between the plastic plates (1)
- Set the pressure to suit the material or technique (1)
- Roll the card and die through the machine between the two pressurised rollers (1)
- Check the card to see if the pass was successful, and repeat if needed (1)
- Remove any waste, or carefully remove the die if the card has been embossed (1)

Quality checks can also be credited, e.g. alignment of the card in the machine (1).

Q10b.

An advantage (1) and a description (1). For example: cutting corrugated cardboard on a die cutter is less likely to damage the flutes between the layers. Other advantages:

- The edges will be neater than those cut by hand
- The net will be more accurate
- Die cutting speeds up production of the cardboard nets
- Die cutting is ideal for rigid boards rather than flexible materials
- Die cutting removes human error

Q11.

An advantage (1) with a description or example (1). For example:

- A wax coating on duplex board (1) improves its resistance to moisture, e.g. for a takeaway container (1)
- Spirit or UV varnishing on a board (1) protects it from wear and tear (1)
- UV varnishing (1) improves the appearance, e.g. a glossy magazine cover (1)
- A wax coating on duplex board (1) keeps the contents fresh by forming a barrier to the air, e.g. a cake box (1)
- Embossing or debossing (1) gives a raised profile or impression for aesthetic purposes (1)

Q12.

A reason (1) and a linked justification (1). For example:

- It emphasises the lettering on the cover (1), giving a more attractive, luxurious product (1)
- It gives a metallic effect to highlight the lettering (1), giving a more expensive appearance for an item kept as a reminder of the wedding (1)
- It gives a shiny finish to parts of the cover (1), which can be combined with other design features (1)

Q13.

Two reasons (1 each), each with a linked justification (1). For example:

- Embossing can be done onto a printed image (1), so features stand out (1)
- Embossing raises the surface of the cardboard (1), so walls and roof can be textured like bricks or tiles, improving the tactile qualities (1)
- Embossing powders can be used (1), so the raised sections can be coloured and are thicker than the original card (1)
- Embossing gives the impression of a higher quality product (1), allowing a higher retail price (1)
- Embossing may affect the strength or rigidity of the board (1), because the flat sheet is deformed (1)

Q14.

Two benefits (1 each), each with two linked justifications (1) + (1). Do not accept anything about a smoother surface. For example:

- UV varnish gives a high gloss, vivid finish (1), so the contrast between the design and colours is enhanced (1), improving the visual appeal of the display (1)
- UV varnish gives a protective layer that seals the surface (1), protecting the board from moisture and staining (1), so the product lasts longer (1)
- UV varnish improves the stiffness of the panel (1), so it can be punched without fraying or tearing (1), allowing the panels to be hung by string (1)

Q15.

Two finishes or treatments (1 each), each with two linked justifications (1) + (1). For example:

- Laminating or film (1): the strips slide smoothly (1), so there is less wear and friction between the parts (1)
- Varnishing (1): the surface is better protected against dirty fingers (1), so it stays looking nice for longer (1)
- Printing, embossing or hot foil blocking (1): the strips can have different colours or textures (1), so one set of numbers can stand out from another (1)

Q16.

Two methods (1 each), each with two linked justifications (1) + (1). For example:

- Adhesive, gluing or perfect binding (1): the glue soaks into the cover and pages (1), so pages are less likely to fall out as they are bonded to the covers (1)
- Stapling (1): gives a mechanical connection between the covers and pages (1), which is easy to produce and needs no drying time (1)
- Split pins or paper fasteners (1): holes are made in the covers and pages (1), so pages can be added or removed (1)
- Stitch binding (1): attaches all the pages along a spine (1), so pages will not come loose and the book lasts a long time (1)
- Spiral, comb or wire binding (1): allows extra pages to be added (1), so the book can be made bigger or unused pages removed (1)