

**ADVANCED GCE****DESIGN AND TECHNOLOGY****2524/01**

Unit 7: Product Design 2

**Papers 2524/01 and 2524/02 should be available to candidates
for the full 2 hour 30 minutes examination session**

Candidates answer on the Answer Booklet

OCR Supplied Materials:

- 8 page Answer Booklet

Other Materials Required:

None

**Wednesday 28 January 2009
Morning**

Duration: 1 hour**INSTRUCTIONS TO CANDIDATES**

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the spaces provided on the Answer Booklet.
- Use black ink. Pencil may be used for graphs and diagrams only.
- **This paper is to be taken with 2524/02 in the same examination session of 2 hours 30 minutes.**
- Approximately 1 hour should be spent on this paper (Paper 2524/01).
- This paper (2524/01) contains **seven** questions.
- You are required to answer **two** questions.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Please note that the instruction 'discuss' denotes that you should:
 - identify **three** relevant issues/points raised by the question;
 - explain why you consider these issues to be relevant;
 - use **two** specific examples/evidence to support your answer.
- Do **not** write in the bar codes.

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper (2524/01) is **48**.
- All dimensions are in mm.
- This document consists of **8** pages. Any blank pages are indicated.

You are required to answer **two** questions.

Answer the questions in the separate answer booklet.

- 1 Fig. 1 shows a self-assembly wardrobe. The carcase is made from manufactured board.

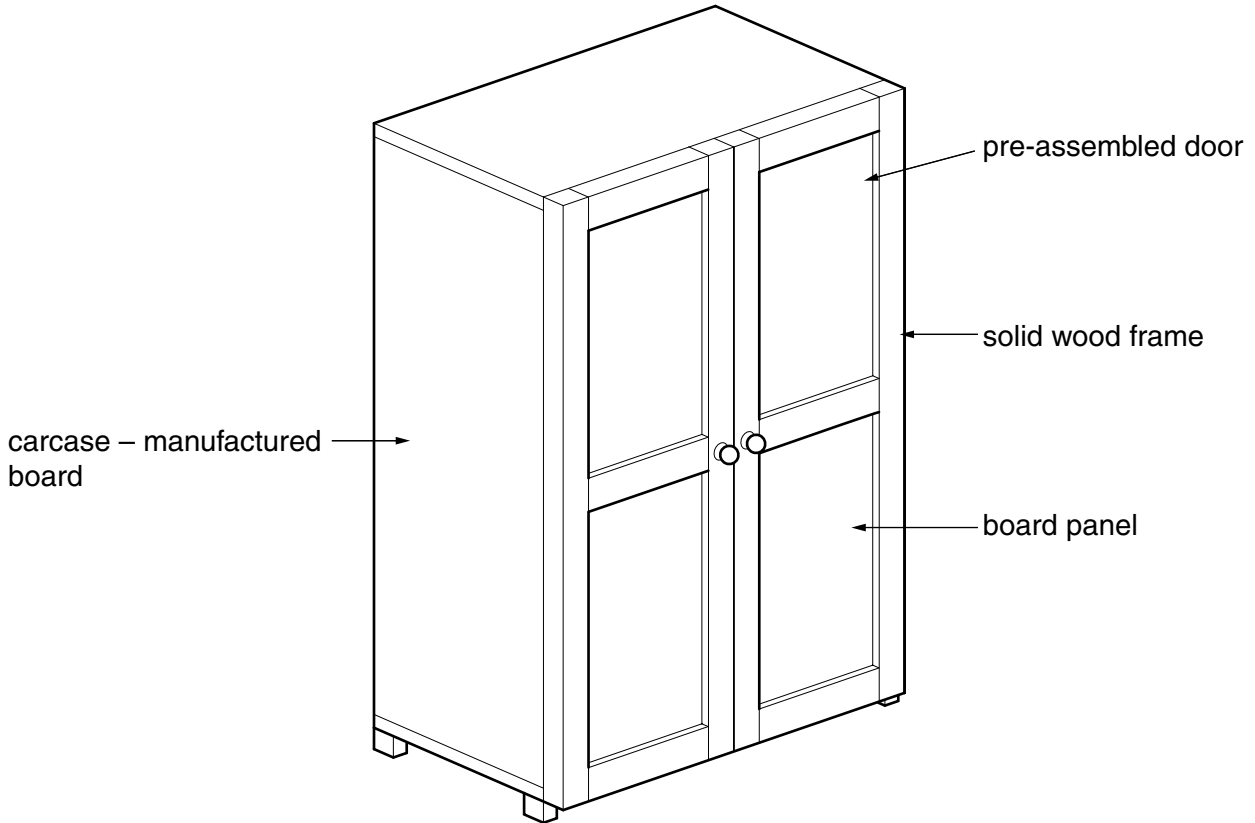


Fig. 1

- (a) (i) Name **two** manufactured boards that could be used for the carcase of the wardrobe. [2]
- (ii) Give **two** benefits of using manufactured board for this type of furniture. [2]
- (iii) Use notes and sketches to show **two** KD (knock-down) fittings used to join pieces of self assembly furniture. [4]
- (b) The pre-assembled wardrobe doors are made in batches.
- Describe how the doors are manufactured. Use sketches where appropriate. [8]
- (c) Discuss the environmental implications of using manufactured boards in the mass production of furniture. [8]

[Total: 24]

2 Fig. 2 shows a tumble drier.

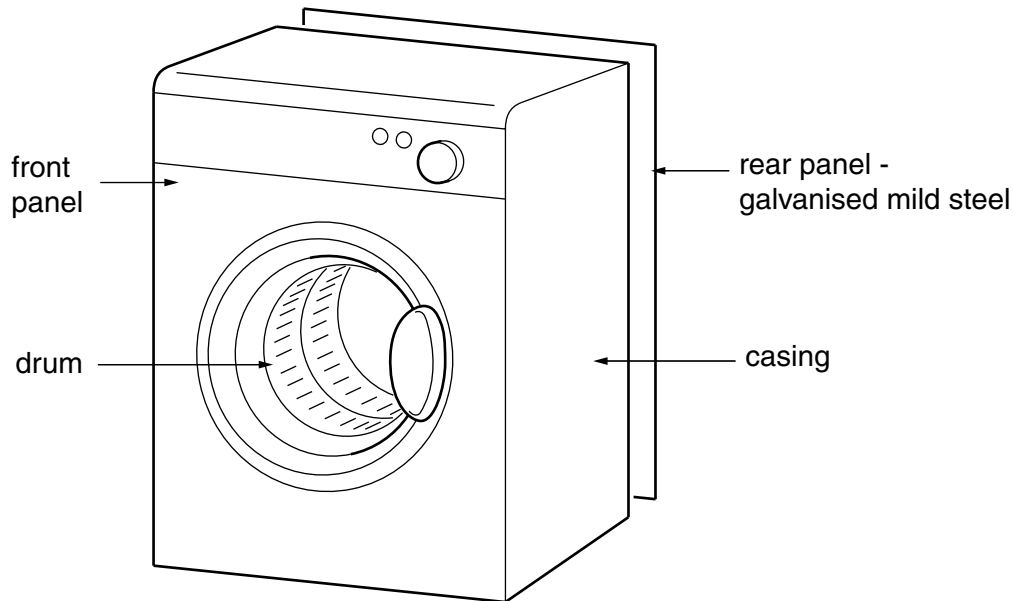


Fig. 2

- (a) (i) The drum of the tumble drier is made from stainless steel.
Give **two** reasons why stainless steel is a suitable material for the drum. [2]
- (ii) The casing of the tumble drier is made from mild steel.
Give **two** reasons why mild steel is a suitable material for the casing. [2]
- (iii) Give **four** reasons why standardised parts are used in the production of domestic products. [4]
- (b) (i) Some components such as mounting brackets are spot welded onto the inside of the casing.
Describe the process of spot welding. Use sketches where appropriate. [4]
- (ii) The rear panel of the tumble drier is galvanised to prevent corrosion.
Describe the process of galvanising. Use notes and sketches where appropriate. [4]
- (c) Discuss the moral implications of mass producing electrical domestic appliances. [8]

[Total: 24]

3 Fig. 3 shows a plastic container used for milk.

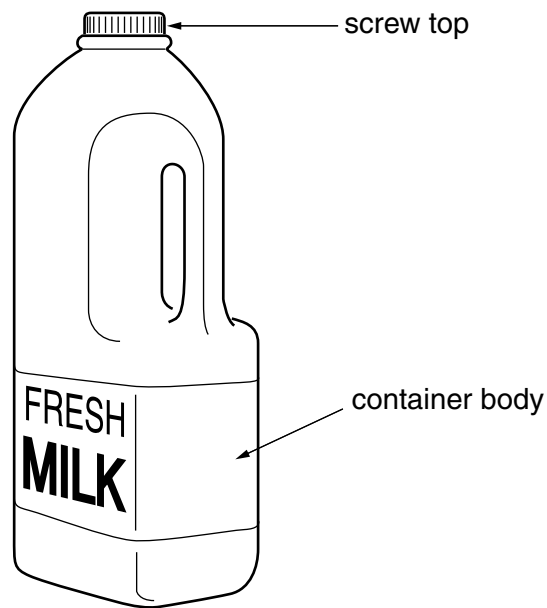


Fig. 3

- (a) (i) Give **two** reasons why polyethylene is a suitable material for this container. [2]
- (ii) Give **two** reasons why polyethylene is not usually used for carbonated drink containers. [2]
- (iii) Name **four** plastics other than polyethylene used in food packaging. [4]
- (b) The container body is produced by blow moulding.
- Describe how the container body would be formed by blow moulding. Use sketches where appropriate. [8]
- (c) Discuss the environmental implications of using non-renewable resources. [8]

[Total: 24]

- 4 Fig. 4 shows a cardboard wrap used for retailing multi-packs of drink cans.

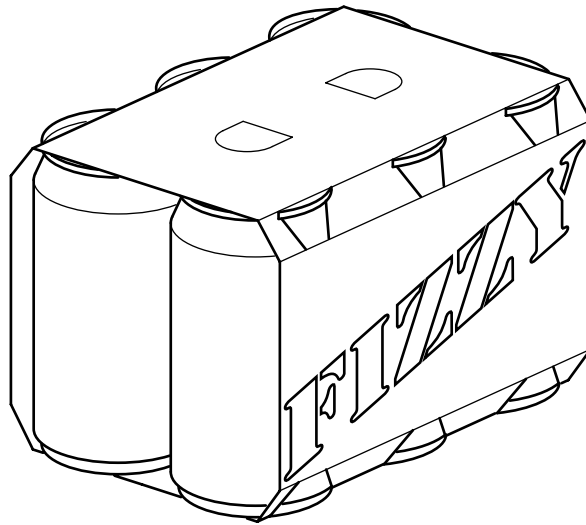


Fig. 4

- (a) (i) Give **two** reasons why cardboard is a suitable material for the wrap. [2]
- (ii) Name **two** suitable high volume printing methods used to print onto cardboard. [2]
- (iii) The wraps are produced using a press forme.
- Describe how the press forme cuts and creases the cardboard. [4]
Use sketches where appropriate.
- (b) The cardboard wrap is designed to be self-locking.
- Sketch a net of the wrap shown in Fig. 4. Include all details of the locking method. [8]
- (c) Discuss the economic implications for the manufacturers of high volume packaging. [8]

[Total: 24]

- 5 Fig. 5 shows a design for a greetings card that includes a pop-up mechanism.

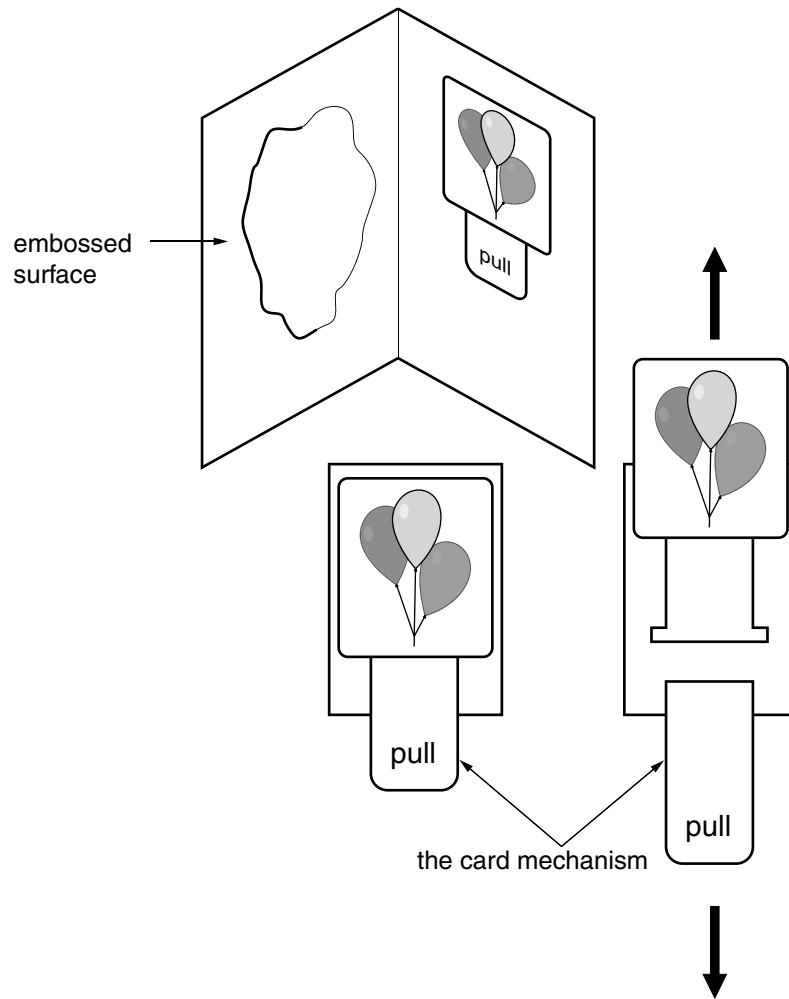


Fig. 5

- (a) (i) Give **two** reasons why 250gsm card is a suitable material for the greetings card. [2]
- (ii) Name **two** suitable materials that could be added to the surface to enhance the appearance of the greetings card. [2]
- (iii) The front of the card has raised lettering produced by embossing. Describe the embossing process. Use sketches where appropriate. [4]
- (b) Use notes and sketches to show the construction of the pop-up mechanism that would produce the movement shown in Fig. 5. [8]
- (c) Discuss the moral implications that need to be considered by the designers of greetings cards. [8]

[Total: 24]

6 Fig. 6 shows a breathable waterproof jacket with a removable fleece lining.



Fig. 6

- (a) (i) Give **two** reasons why the removable lining is made from fleece fabric. [2]
- (ii) State **two** ways of securing the removable lining into the outer jacket. [2]
- (iii) Describe, using annotated sketches, the structure of a breathable waterproof fabric. [4]
- (b) (i) The logo on the outer jacket is embroidered using a computer controlled sewing machine.
Describe the order of work for embroidering the logo onto the outer jacket. [4]
- (ii) The outer jacket is made using a double stitched seam.
Describe how to work a double stitched seam. Use diagrams where appropriate. [4]
- (c) Discuss the implications of using smart and modern fabrics for garments designed for sporting activities. [8]

[Total: 24]

7 Fig. 7 shows a baby's cot set, with bumpers and a quilt cover.

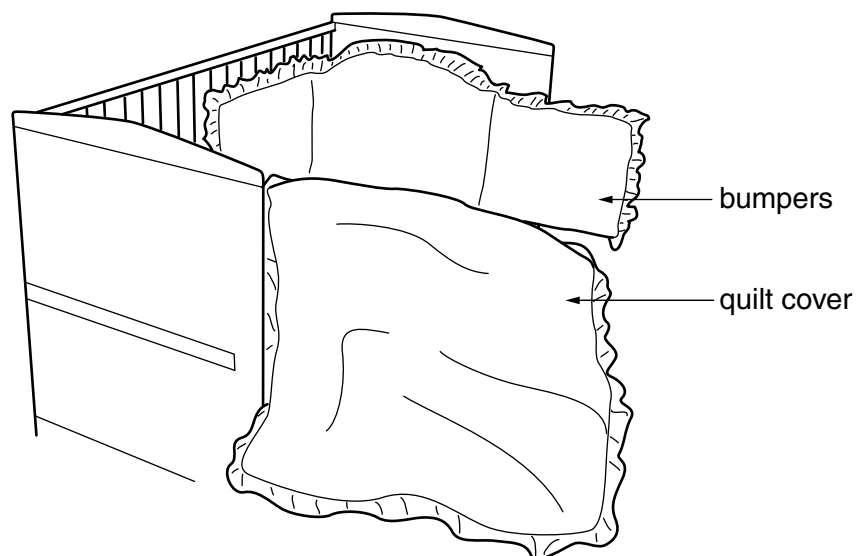


Fig. 7

- (a) (i) Give **four** performance characteristics needed by a fabric used to make a cot set. [4]
- (ii) Fabrics are often tested for durability.
Describe how to test a fabric for durability. Use sketches where appropriate. [4]
- (b) Describe the order of manufacture of the quilt cover shown in Fig. 7.
Use sketches where appropriate. [8]
- (c) Discuss the implications of attaching Eco labels to finished textile products. [8]

[Total: 24]