



## 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

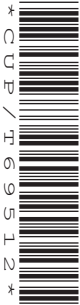
### Other Materials Required:

None

**Friday 12 June 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.

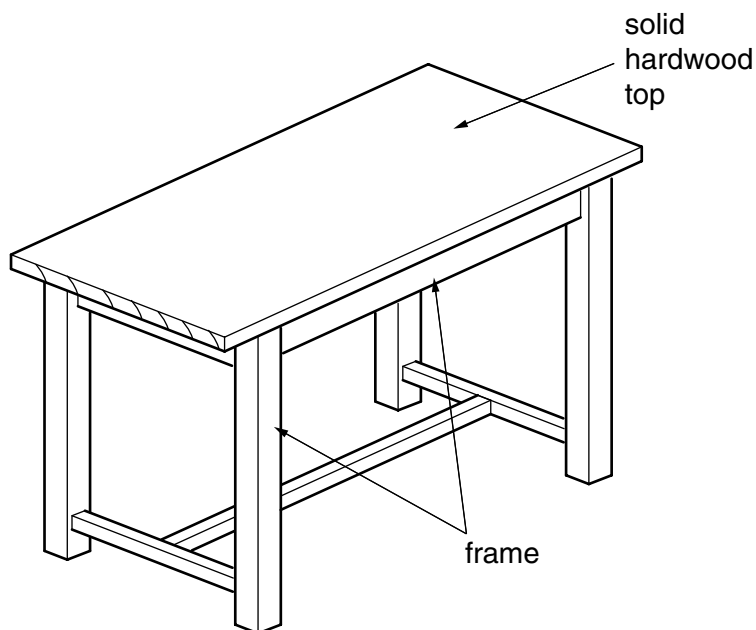
### INFORMATION FOR CANDIDATES

- 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 hardwood table.



**Fig. 1**

- (a) (i) Name **two** hardwoods that could be used for the table. [2]
- (ii) Name **two** adhesives that could be used in the assembly of the table. [2]
- (iii) Use notes and sketches to show how the tabletop is made from four hardwood boards. [4]

The tables are produced in batches.

- (b) (i) Use notes and sketches to show how the table frame is constructed. [4]
- (ii) Use notes and sketches to show how the tabletop is attached to the frame. [4]
- (c) Discuss the implications for designers of wooden furniture when considering the selection of timbers. [8]

**[Total: 24]**

- 2 Fig. 2 shows an aluminium alloy can with a ring pull. The can is used for carbonated drinks.

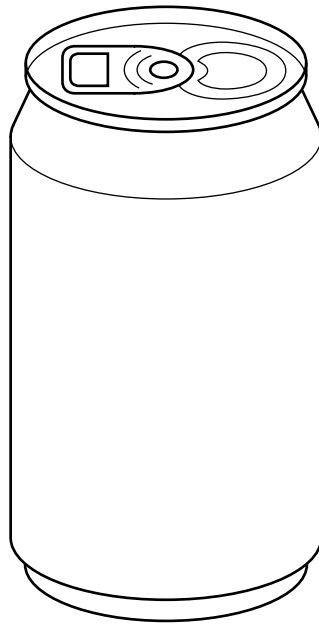
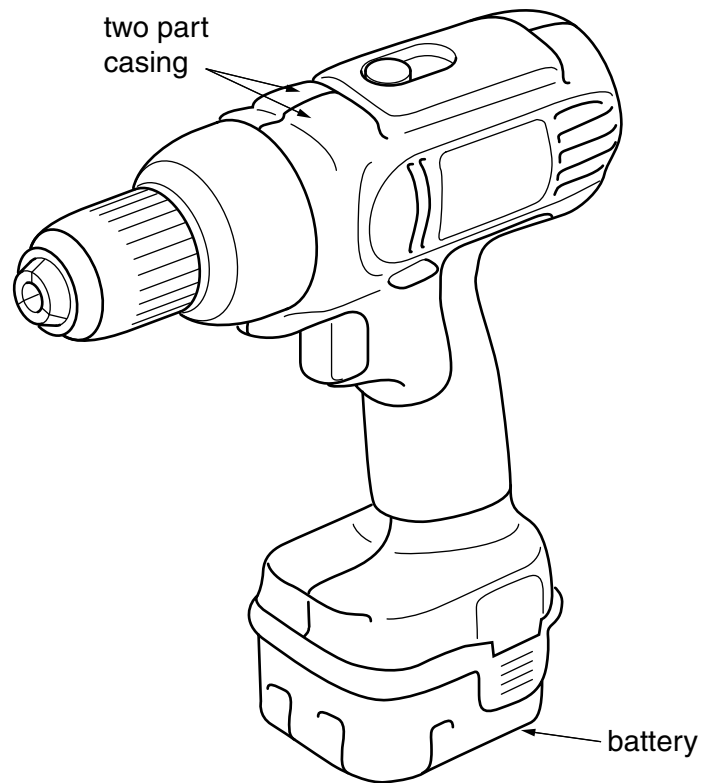


Fig. 2

- (a) (i) Give **four** reasons why aluminium alloy is a suitable material for the drinks can. [4]
- (ii) Describe **two** features of ring pull design. [4]
- (b) The can is produced by cold forming. [8]
- Use notes and sketches to show how the can is cold formed. [8]
- (c) Discuss the economic implications to manufacturers when introducing continuous production methods. [8]

[Total: 24]

- 3 Fig. 3 shows a battery operated portable drill. The two part casing is made from injection moulded ABS.

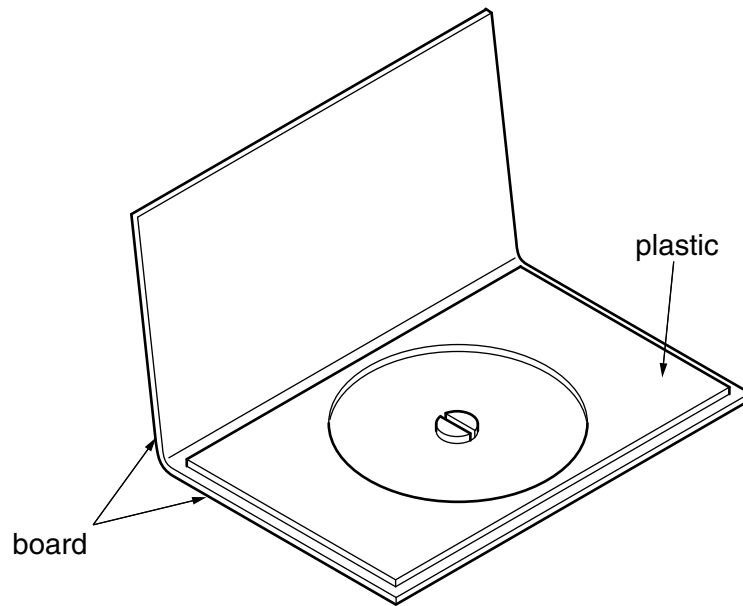


**Fig. 3**

- (a) (i) Give **four** reasons why ABS is a suitable material for the two part casing. [4]
- (ii) Use notes and sketches to show two ways the parts of the casing could be joined together. [4]
- (b) The two part casing is produced by injection moulding.
- Use notes and sketches to show how the two part casing would be injection moulded. [8]
- (c) Discuss the environmental implications of using battery powered equipment. [8]

**[Total: 24]**

- 4 Fig. 4 shows a special edition CD case made from board and plastic.

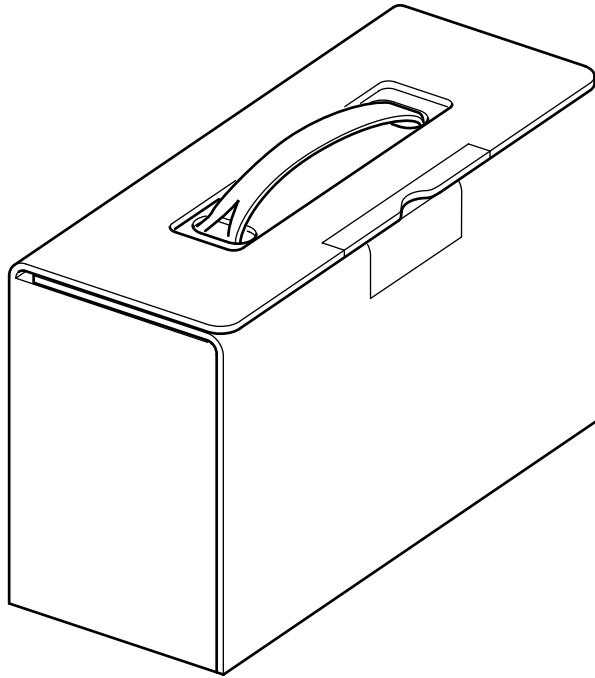


**Fig. 4**

- (a) (i) Name **two** suitable surface finishes for the board. [2]
- (ii) Give **two** reasons why the board needs an applied finish. [2]
- (iii) Describe **two** disadvantages to the manufacturer of producing special edition CD cases. [4]
- (b) CD cases are printed in colour using offset lithography. [8]
- Describe the offset lithography printing process. Use sketches where appropriate. [8]
- (c) Discuss the marketing implications when designing packaging for multimedia products. [8]

**[Total: 24]**

- 5 Fig. 5 shows a box used for packaging and transporting an electronic scanner.

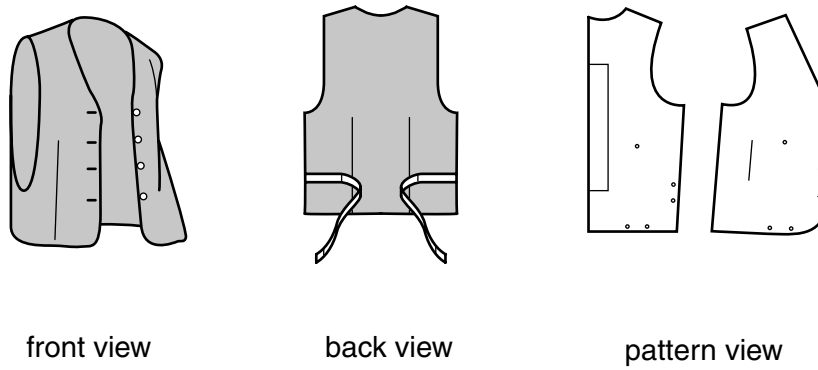


**Fig. 5**

- (a) The box in Fig. 5 is made from duplex board.
- (i) Draw a labelled cross section of duplex board. [2]
  - (ii) Give **two** reasons why duplex board is a suitable material for the box. [2]
  - (iii) Use notes and sketches to show **two** ways in which the sides of the box could be joined to take the weight of the scanner. [4]
- (b) Sketch a net of the box shown in Fig. 5. Include cut and fold details. [8]
- (c) Discuss environmental implications for designers of packaging. [8]

**[Total: 24]**

- 6 Fig. 6 shows a waistcoat made from cotton velvet fabric with a taffeta lining.



**Fig. 6**

- (a) (i) Name **two** pre-manufactured standard components used to make the waistcoat. [2]
- (ii) Give **three** reasons why a cotton velvet fabric is used to make the waistcoat. [3]
- (iii) Cotton velvet is a cut pile fabric.
- Describe, using annotated sketches, the structure of a cut pile fabric. [3]
- (b) Describe the order of manufacture of the waistcoat shown in Fig. 6. [8]  
Include details of the special care needed when working with a cut pile fabric.  
Use sketches where appropriate.
- (c) Discuss the environmental implications of producing cotton fibres. [8]

**[Total: 24]**

7 Fig. 7 shows a children's ball pit play tent made for outdoor use.

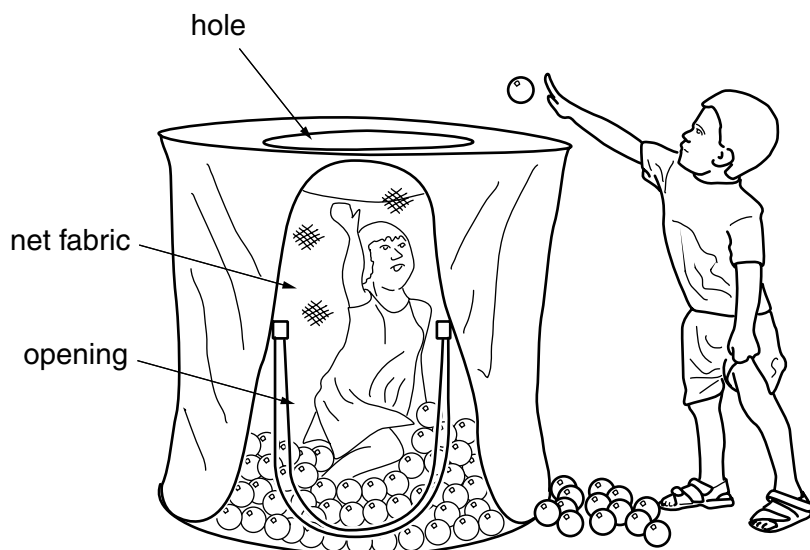


Fig. 7

- (a) (i) Give **three** performance characteristics needed by a fabric used to make a ball pit play tent. [3]
- (ii) Give **one** reason for the use of net fabric as part of the ball pit play tent. [1]
- (iii) Use notes and sketches to describe **two** methods of neatening the edges of the opening in the net fabric. [4]
- (b) Describe the order of manufacture of the ball pit play tent shown in Fig. 7. Use sketches where appropriate. [8]
- (c) Discuss the implications of designing textile products for outdoor use. [8]

[Total: 24]

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