

Write your name here

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Other names

Pearson
Edexcel GCE

Centre Number

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Candidate Number

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Design and Technology

Product Design: Graphic Products

Advanced Subsidiary

Unit 2: Design and Technology in Practice

Monday 23 May 2016 – Morning

Time: 1 hour 30 minutes

Paper Reference

6GR02/01

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches it must be dark (HB or B). Coloured pens, pencils and highlighter pens must not be used.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided
– *there may be more space than you need.*

Information

- The total mark for this paper is 70.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (*) are ones where the quality of your written communication will be assessed
– *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Answer ALL the questions. Write your answers in the spaces provided.

1 Figure 1 shows an example of a case-bound book.



Figure 1

(a) Give **two** characteristics of case binding.

(2)

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2

(b) The pages of the book are printed on bond paper.

State **one** functional and **one** aesthetic property of bond paper that make it a suitable material for case-bound books.

(2)

Functional

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Aesthetic

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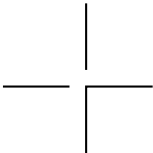

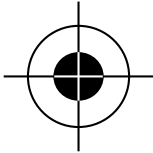
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(c) The pages of the book are printed using offset lithography.

Complete the table below to give the name of each of the following quality control marks, and explain how they are used to improve product quality.

Quality control mark	Name	Explanation
	<p>.....</p> <p>(1)</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>(2)</p>
	<p>.....</p> <p>(1)</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>(2)</p>
	<p>.....</p> <p>(1)</p>	<p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>(2)</p>

(Total for Question 1 = 13 marks)



2 Figure 2 shows a net used for a ticket wallet for a concert.

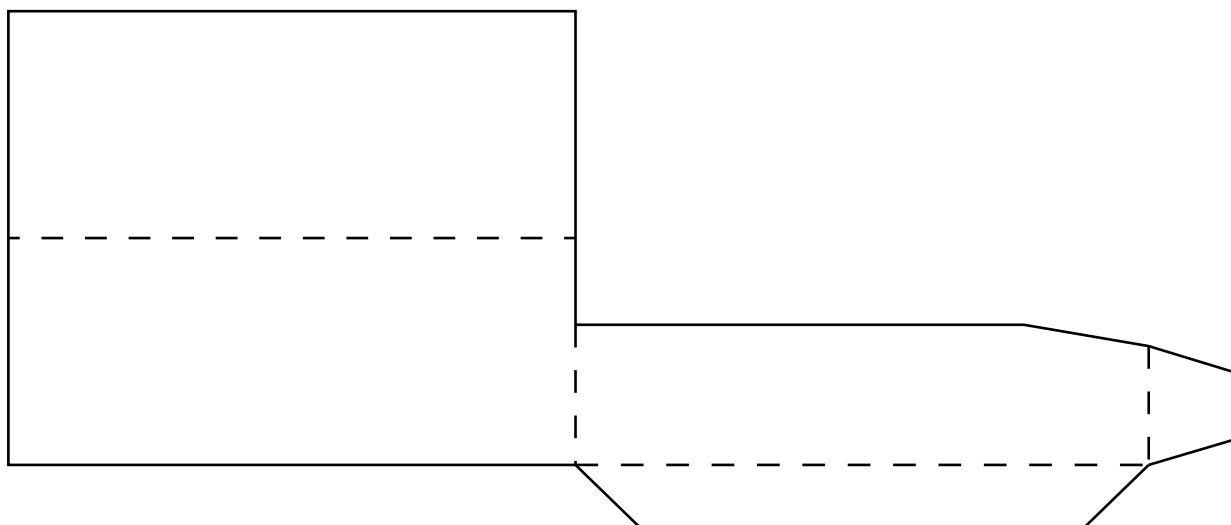


Figure 2

- (a) A prototype of the wallet is to be made in a school design room using a scalpel and a contact adhesive.

Complete the table by stating **one** risk and **one** control measure associated with each activity.

Activity	Risk	Control Measure
Cutting out the net	<p>.....</p> <p>.....</p> <p>(1)</p>	<p>.....</p> <p>.....</p> <p>(1)</p>
Assembling the net	<p>.....</p> <p>.....</p> <p>(1)</p>	<p>.....</p> <p>.....</p> <p>(1)</p>



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(b) Explain **one** reason why traditional methods of production are appropriate for producing a one-off prototype of the ticket wallet.

(2)

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(c) A batch of 1000 ticket wallets is required for a concert.

Explain **one** reason why CNC (computer numerically controlled) production methods are appropriate for batch production.

(2)

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(d) A two-colour design will be added to the ticket wallet using screen-printing.

Explain **two** reasons why screen-printing is a suitable method for batch production.

(4)

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(Total for Question 2 = 12 marks)



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3 Figure 3 shows a sign produced from glass reinforced plastic (GRP).

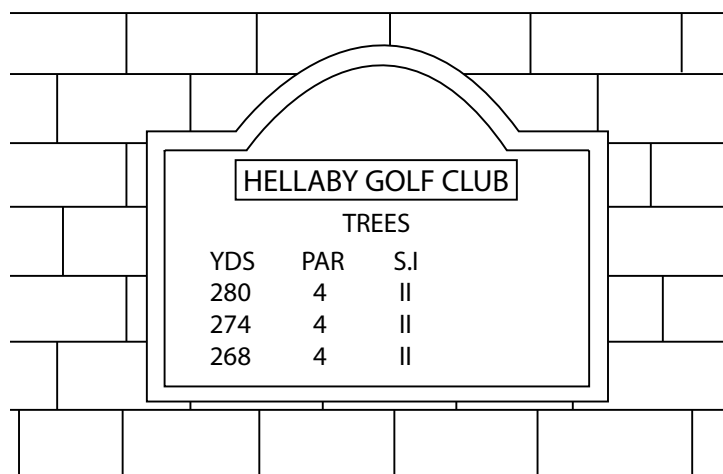


Figure 3

(a) Using notes and sketches, describe how the sign would be produced from glass reinforced plastic (GRP).

(4)

Blank area for student response.



(b) An acrylic leaflet holder is to be attached to the sign using epoxy resin.

Explain **one** advantage and **one** disadvantage of using epoxy resin for attaching the leaflet holder to the sign.

(4)

Advantage

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Disadvantage

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(Total for Question 3 = 8 marks)



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4 Illuminated advertising displays are designed for both internal and external use.

(a) Explain **two** advantages of using electroluminescent lighting for advertising displays.

(4)

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(b) The outer casing of advertising displays can be made from polypropylene (PP).

Explain **one** reason why polypropylene is an appropriate material for the outer casing of advertising displays.

(2)

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(c) The outer casing of an advertising display is produced using the injection moulding process.

Using annotated sketches, describe the injection moulding process.

(5)



(Total for Question 4 = 11 marks)



5 Figure 4 shows a planometric (axonometric) view of a bedroom.

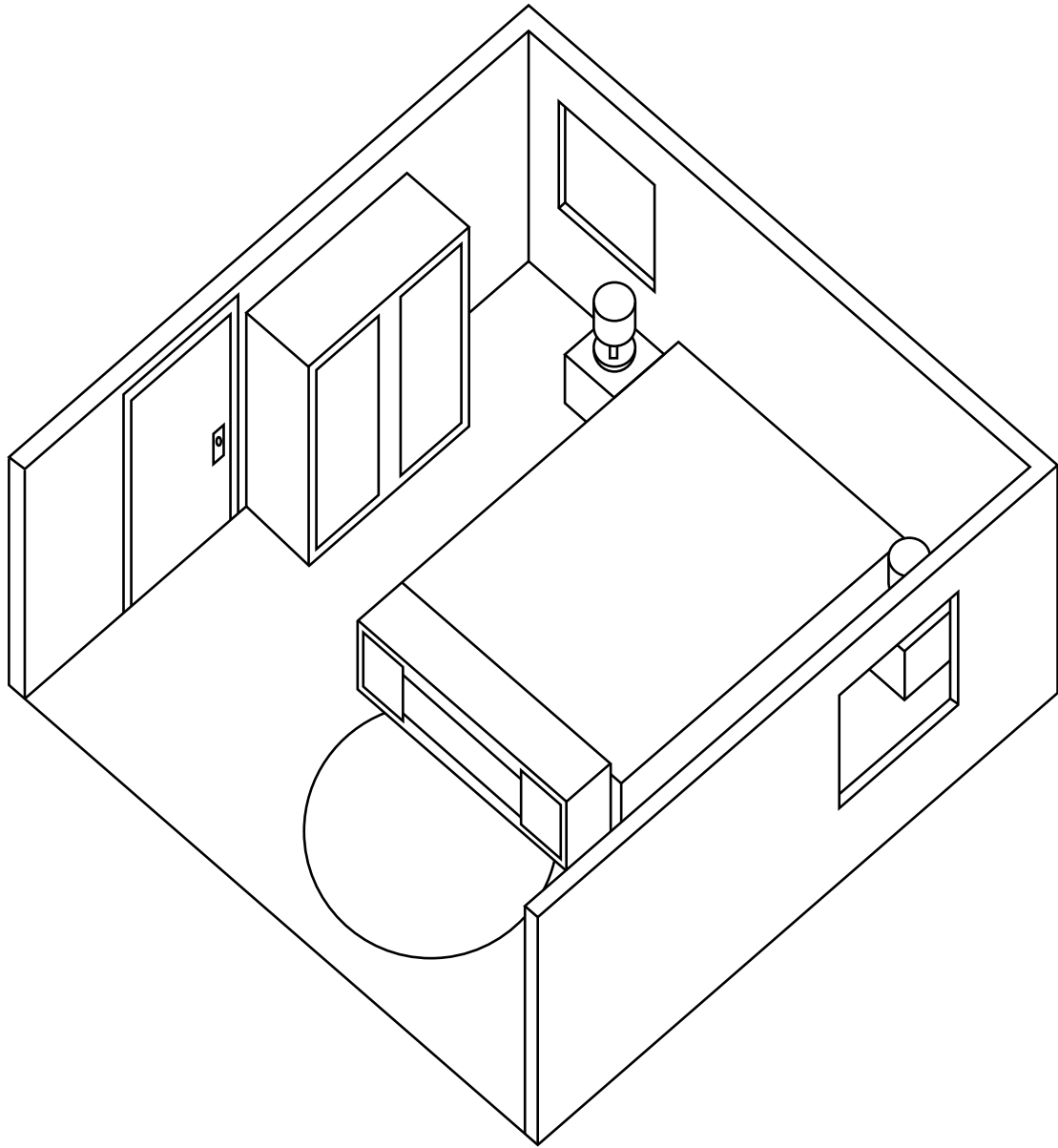


Figure 4

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(a) In the space below, produce a plan view of the bedroom.

(6)



(b) Explain **one** reason why planometric (axonometric) drawings are used, rather than isometric drawings, for producing pictorial views of rooms and buildings.

(2)

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(Total for Question 5 = 8 marks)

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6 Paper and board are produced from wood pulp.

(a) Explain **one** reason why sizing agents might be used during the drying stage, when producing paper using the Fourdrinier process.

(2)

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*(b) Evaluate the use of waste pulp for producing paper.

(8)

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(Total for Question 6 = 10 marks)



***7** Discuss the use of both CAD wire frame modelling and CAD surface modelling when presenting design concepts to potential clients.

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(Total for Question 7 = 8 marks)

TOTAL FOR PAPER = 70 MARKS

