
DESIGN AND TECHNOLOGY

9705/32

Paper 3

October/November 2017

MARK SCHEME

Maximum Mark: 120

Published

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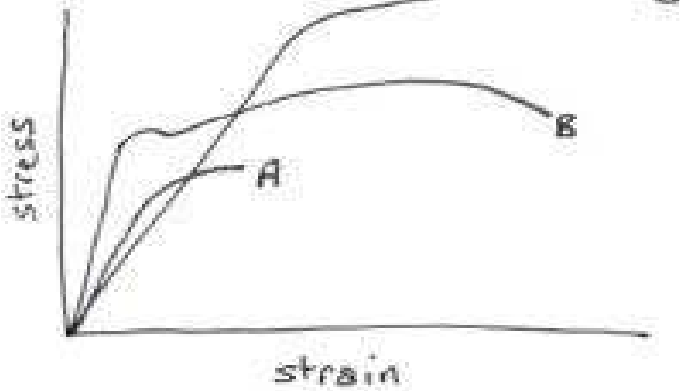
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This document consists of **10** printed pages.

Question	Answer	Marks
2(a)	<p>suitable material: 1 mark</p> <p>trough abs/polypropylene/HDPE appropriate hardwood for laminating / bending, accept pine aluminium alloy, brass. copper mild steel (with finish) stainless steel</p> <p>Reasons : will not react to moisture can be bent to required shape will hold shape when full look attractive in desired environment</p> <p>foot abs/polypropylene/HDPE appropriate hardwood cast iron(with finish)/aluminium alloy/brass</p> <p>Reasons : can be cast to shape (metals) can be moulded to shape (polymers) can support the trough easily accepts finish to match trough</p> <p style="text-align: right;">2 · 1</p>	3
2(b)	<p>quality of description: fully detailed 3–7 some detail 0–2 quality of sketches up to 2</p>	9
2(c)	<p>explanation could include: change in process; change in materials; use of jigs, formers, moulds; simplification of design.</p> <p>quality of explanation: logical, structured 4–6 limited detail 0–3 quality of sketches up to 2</p>	8

Question	Answer	Marks
3(a)	<p>plastic dip coating; Appropriate product e.g. bathroom rail, kitchen rack 1 Appropriate materials e.g. Mild steel, LDPE, Nylon 1 Reason e.g. humid, damp (bathroom/kitchen/outdoor) 1</p> <p>anodising; Appropriate product e.g. building cladding, screws 1 Appropriate materials e.g. Aluminium, magnesium, titanium, steel 1 Reason e.g. outdoor, to identify part, attractiveness 1</p> <p>varnishing; Appropriate product e.g. building cladding, screws 1 Appropriate materials e.g. Aluminium, magnesium, titanium, steel 1 Reason e.g. outdoor, to identify part, attractiveness 1</p> <p style="text-align: right;">3 · 2</p>	6
3(b)	<p>quality of description: fully detailed, most stages covered 3–5 some detail 0–2 quality of communication up to 2</p> <p style="text-align: right;">7 · 2</p>	14

Part B – Practical Technology

Question	Answer	Marks
4(a)	50 N evidence of correct working 1, correct answer 2	2
4(b)(i)	A cast iron 1 reason 1 B mild steel 1 reason 1 C aluminium alloy 1 reason 1	6
4(b)(ii)	 <p>Ultimate strength 1 Maximum stress 1 Fracture point 1 Breaking point reached 1 Elastic limit 1 Will not return to original shape 1</p>	6
4(c)	explanation could include: Wear materials friction reduction Corrosion protection materials clear, fully detailed limited detail	6 4–6 0–3

Question	Answer	Marks
6(a)	applications described e.g. CNC Router, miller, lathe	2 · 2 4
6(b)	explanation could include:	
6(b)(i)	manufacturer speed of production quality control cost implications clear, fully detailed most features described limited detail	8 6–8 4–5 0–3
6(b)(ii)	customer cost reliability quality clear, fully detailed most features described limited detail	8 6–8 4–5 0–3

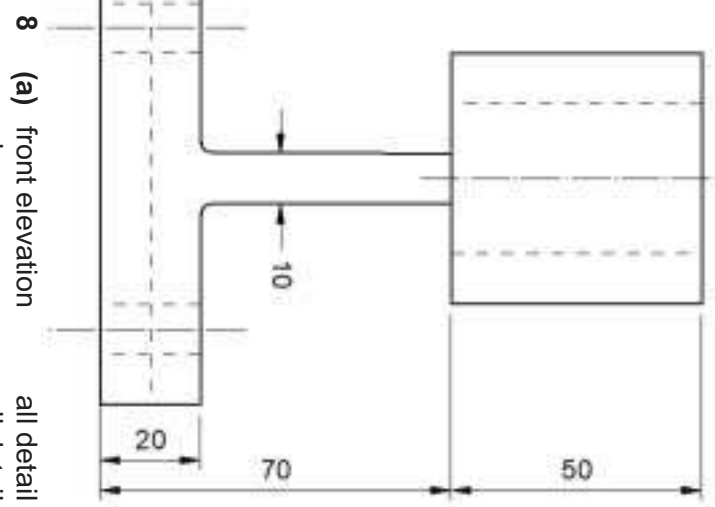
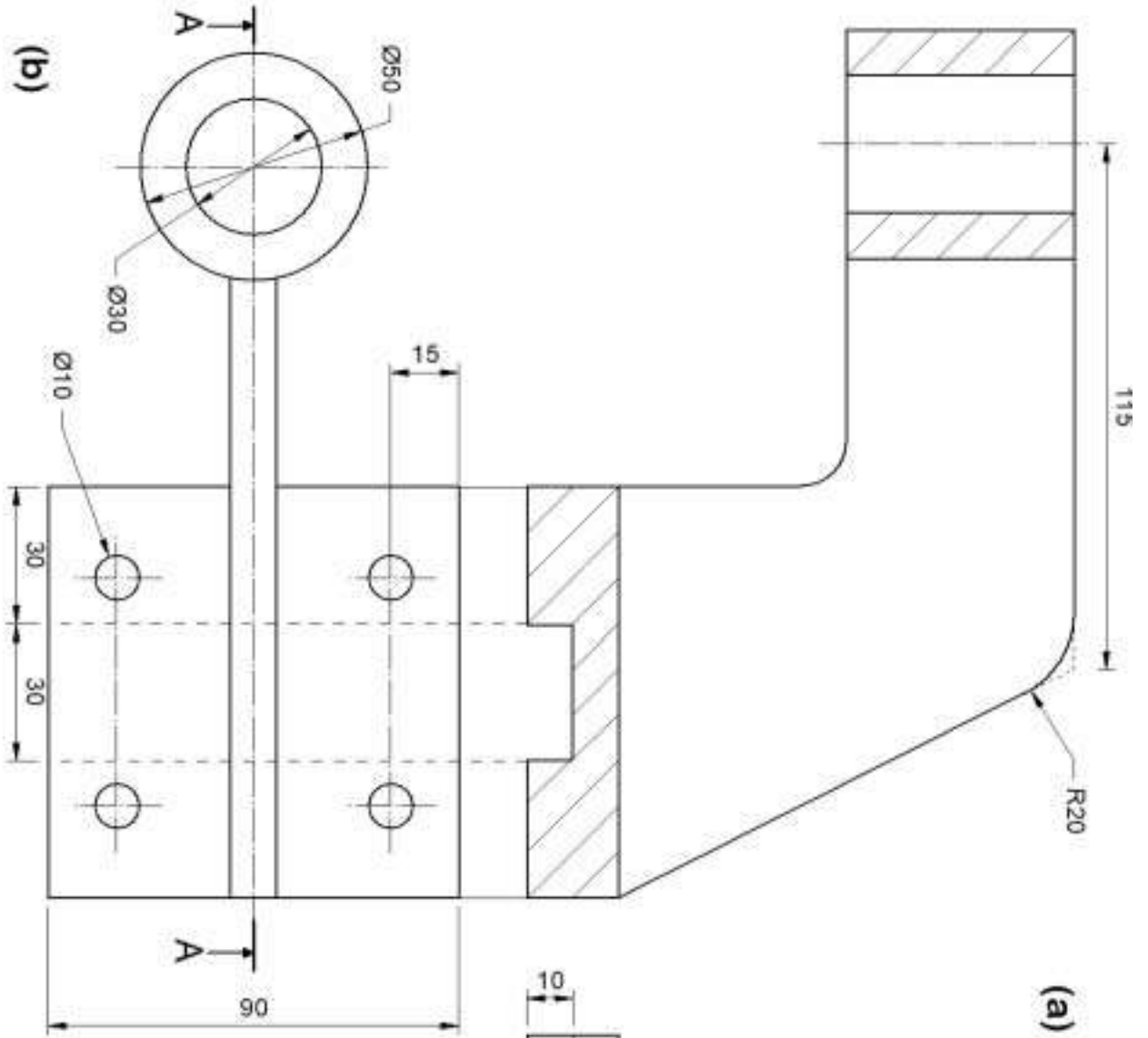
Part C – Graphic Products

Question	Answer	Marks
7	scale 1 Cabinet 2 Sink unit 3 Window 2 Mirror 2 Shower tray 2 Bath 3 Layout 2 Accuracy 3	20

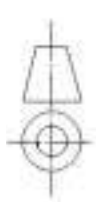
Question	Answer	Marks
8(a)	front elevation all detail 4 plan all detail 4 sectional elevation all detail 4 scale 1 accuracy 3	16
8(b)	dimensions 2 projection 2	4

Question	Answer	Marks
9	Discussion could include: target market affordability / quality sale introductory offers market accessibility examples / evidence could be teenage / adult market specific placement promotions – celebrities, BOGOF examination of issues wide range of relevant issues 4–8 limited range 0–3 quality of explanation logical, structured 4–8 limited detail 0–3 supporting examples / evidence 4	20

Question 8 Insert



- 8 (a) front elevation 4
- plan 4
- sectional elevation 4
- scale 4
- accuracy 1
- (b) dimensions 3
- projection 2



Section B

Question	Answer	Marks
	<p>Analysis</p> <p>Analysis of the given situation/problem 0–5</p> <p>Specification</p> <p>Detailed written specification of the design requirements. At least five specification points other than those given in the question. 0–5</p> <p>Exploration</p> <p>Bold sketches and brief notes to show exploration of ideas for a design solution, with reasons for selection.</p> <ul style="list-style-type: none"> range of ideas 0–5 annotation related to specification 0–5 marketability, innovation 0–5 evaluation of ideas, selection leading to development 0–5 communication 0–5 <p>Development</p> <p>Bold sketches and notes showing the development, reasoning and composition of ideas into a single design proposal. Details of materials, constructional and other relevant technical details.</p> <ul style="list-style-type: none"> developments 0–5 reasoning 0–5 materials 0–3 constructional detail 0–7 communication 0–5 <p>Proposed solution</p> <p>Produce drawing/s of an appropriate kind to show the complete solution.</p> <ul style="list-style-type: none"> proposed solution 0–10 details/dimensions 0–5 <p>Evaluation</p> <p>Written evaluation of the final design solution 0–5</p>	80