



2007 Graphic Communication

Higher

Finalised Marking Instructions

© Scottish Qualifications Authority 2007

The information in this publication may be reproduced to support SQA qualifications only on a non-commercial basis. If it is to be used for any other purposes written permission must be obtained from the Assessment Materials Team, Dalkeith.

Where the publication includes materials from sources other than SQA (secondary copyright), this material should only be reproduced for the purposes of examination or assessment. If it needs to be reproduced for any other purpose it is the centre's responsibility to obtain the necessary copyright clearance. SQA's Assessment Materials Team at Dalkeith may be able to direct you to the secondary sources.

These Marking Instructions have been prepared by Examination Teams for use by SQA Appointed Markers when marking External Course Assessments. This publication must not be reproduced for commercial or trade purposes.

Higher Level Graphic Communication 2007

Question 1

		Marks
(a)	<i>Preliminary</i>	
Purpose:	To convey ideas to clients etc quickly and clearly, to assist in the analysing and planning of stages of the design process.	1
Examples of graphic:	Dimensional sketches (2 or 2½D), investigative sketches, planning charts, graphs, thumbnails, market research. Any other reasonable answer.	1
(b)	<i>Production</i>	
Purpose:	To provide precise information, to allow objects to be manufactured accurately.	1
Examples of graphic:	Orthographic, isometric, oblique, sectional, exploded, assembly, block, site, floor, flow and gantt chart, any reasonable answer accepted. Any other reasonable answer.	1
(c)	<i>Promotional</i>	
Purpose:	Brings people's attention to or highlights a product or a specific feature of a product, to inform public about product, to sell, to advertise (or similar response).	1
Examples of graphic:	Advert, display, charts, models, presentations, brochures (or similar answers). Any other reasonable answer.	1

Notes:

Question 2

			Marks	
(a)	<i>Name:</i>	Third Angle Projection	Do not accept Third Angle	1
(b)	<i>Type:</i>	Orthographic		1
(c)	<i>Orientation 1:</i>	Landscape or portrait		1
	<i>Orientation 2:</i>	Portrait or landscape		1

Notes:

Question 3

				Marks
(a)	Trim, Break	Mirror	½ mark for each correct answer	1
	Chamfer	Fillet	½ mark for each correct answer	1
	Hatch, Fill	Copy, Duplicate	½ mark for each correct answer	1
	Rotate	Zoom, Scale	½ mark for each correct answer	1
(b)	(i)	Rectangular Array or Pattern or Box Array	1 mark for rectangular	
			1 mark for array or pattern	2
	(ii)	Library/Block		1
(c)	(i)	Modem/Router		1
	(ii)	Compatible software in each computer, or similar answer		1

Notes:

Question 4

			Marks
(a)	(i)	Revolved section	1
	(ii)	Local or Part Sectional view. (Accept single word answers of Local or Part)	1
	(iii)	Sectional view, in two parallel planes, Stepped section. (Accept single word answer of Stepped)	1
(b)	Line X	Hidden outlines/edges/detail (do not accept Hidden Lines)	1
	Line Y	Limit of partial/interrupted view	1
	Line Z	Cutting plane	1

Notes:

Question 5

		Marks
(a)	<i>Scale:</i> 1:1250, 1: 2500	1
(b)	<i>Feature A</i> Boundary or boundary line	1
(c)	<i>Symbol B</i> North Point, north arrow, North	1
	<i>Symbol C</i> Contour lines	1
(d)	Floor, Site (½ mark for each)	1

Notes:

Question 6

	Marks
Colour gradient: One colour merging with a different colour	1
Tonal scale: A colour gradually becoming lighter or darker	1
Highlight: An effect to illustrate light reflecting off an edge or surface	1

Notes:

Question 7

			Marks
(a)	Effect:	Reverse (white on black)	1
(b)	Terms	(i) Rule	1
		(ii) Subheading	1
		(iii) Caption	1
		(iv) Column	1
		(v) Folio/Footer	1
		(vi) Column rule	1

Notes:

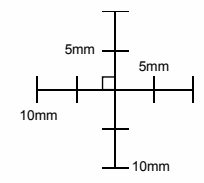
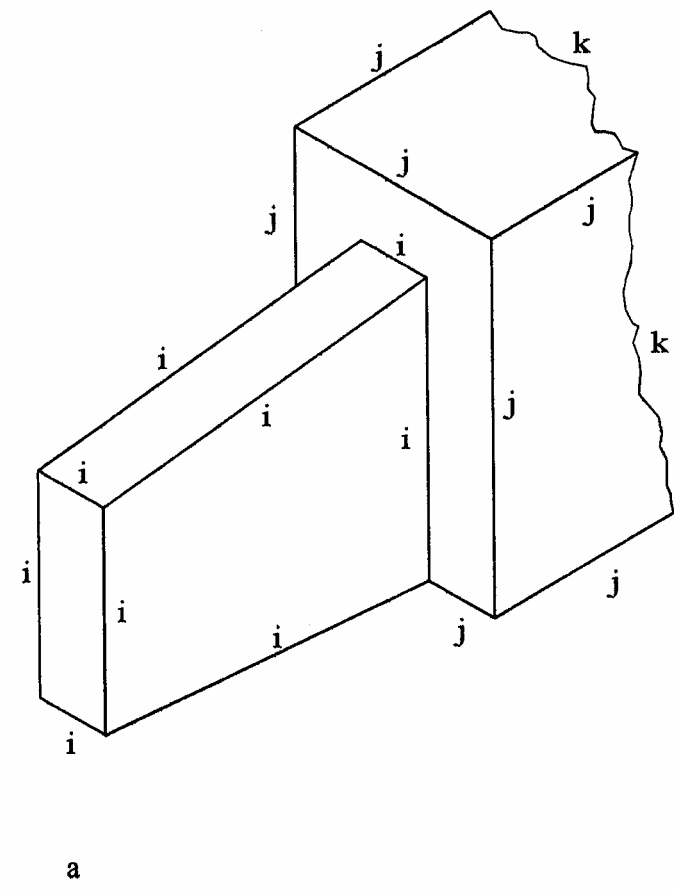
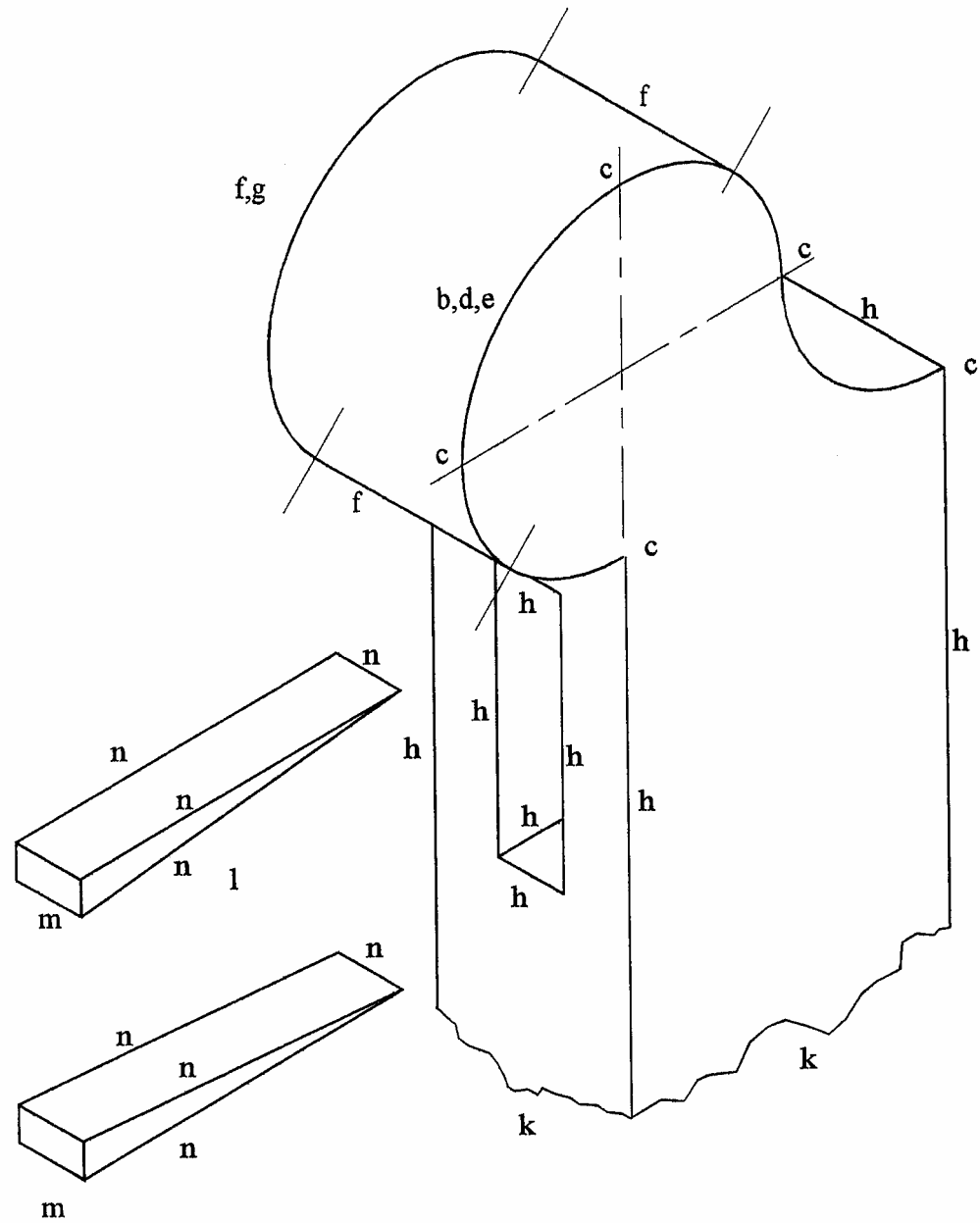
Question 8 (a) – Isometric (Gate detail)

	Marks
(a) Rail, exploded for $\frac{1}{2}$	$\frac{1}{2}$
(b) Construction for front curves	1
(c) Curve: 5 points @ $\frac{1}{2}$ each	2½
(d) 8 intermediate (2 for $\frac{1}{2}$, 4 for 1, 6 for $1\frac{1}{2}$, 8 for 2)	2
(e) Fair curve (0, $\frac{1}{2}$, 1)	1
(f) Construction for back curve for 1, 2 straights for 1	2
(g) Fair curve (0, $\frac{1}{2}$, 1)	1
(h) Style: 5 vertical, 3 @ 30° left, 1 @ 30° right (2 for $\frac{1}{2}$, 4 for 1, 7 for $1\frac{1}{2}$, 9 for 2)	2
(i) Taper: 3 vertical, 3 @ 30° left. 3 slopes (2 for $\frac{1}{2}$, 4 for 1, 7 for $1\frac{1}{2}$, 9 for 2)	2
(j) Rail: 2 vertical, 2 @ 30° left, 3 @ 30° right (2 for $\frac{1}{2}$, 4 for 1, 7 for $1\frac{1}{2}$)	1½
(k) Freehand lines: 1 pair, each element, for $\frac{1}{2}$ each	1
(l) Wedges: exploded for $\frac{1}{2}$	$\frac{1}{2}$
(m) Wedges: 2 box ends for $\frac{1}{2}$ each	1
(n) Wedges: 8 lines; 2 @ 30° left, 4 @ 30° left, 2 sloping (2 for $\frac{1}{2}$, 4 for 1, 6 for $1\frac{1}{2}$, 8 for 2)	2
Total marks	20

Notes:

For (f), construction should comprise 2 points taken back from limit of straights, start and finish, for $\frac{1}{2}$ mark, and any 3 intermediates for $\frac{1}{2}$ mark, 1 mark in total; for the 2 straights, $\frac{1}{2}$ mark for any straights defining the tangency and $\frac{1}{2}$ mark defining the accurate length of the straights.

Question 8 (a) – Isometric (Gate detail)



Question 8 (b) – Tangency Latch

Working from start A, anti clockwise

	Marks
(a) Arc R20: arc for $\frac{1}{2}$, smooth link for $\frac{1}{2}$	1
(b) 2 straight lines for $\frac{1}{2}$ mark	$\frac{1}{2}$
(c) 2 straight lines for $\frac{1}{2}$ mark	$\frac{1}{2}$
(d) Arc R15: centre and arc for $\frac{1}{2}$, smooth link for $\frac{1}{2}$	1
(e) Arc R20: centre and arc for $\frac{1}{2}$, smooth link for $\frac{1}{2}$	1
(f) Arc R120: centre for $\frac{1}{2}$, arc for $\frac{1}{2}$ and smooth link for $\frac{1}{2}$	1½
(g) Arc R10: centre and arc for $\frac{1}{2}$, smooth link for $\frac{1}{2}$	1
(h) Vertical line	$\frac{1}{2}$
(i) Arc R10: centre for $\frac{1}{2}$, arc for $\frac{1}{2}$ and smooth link for $\frac{1}{2}$	1½
(j) Arc R130: centre for $\frac{1}{2}$, arc for $\frac{1}{2}$ and smooth link for $\frac{1}{2}$	1½
Total marks	10

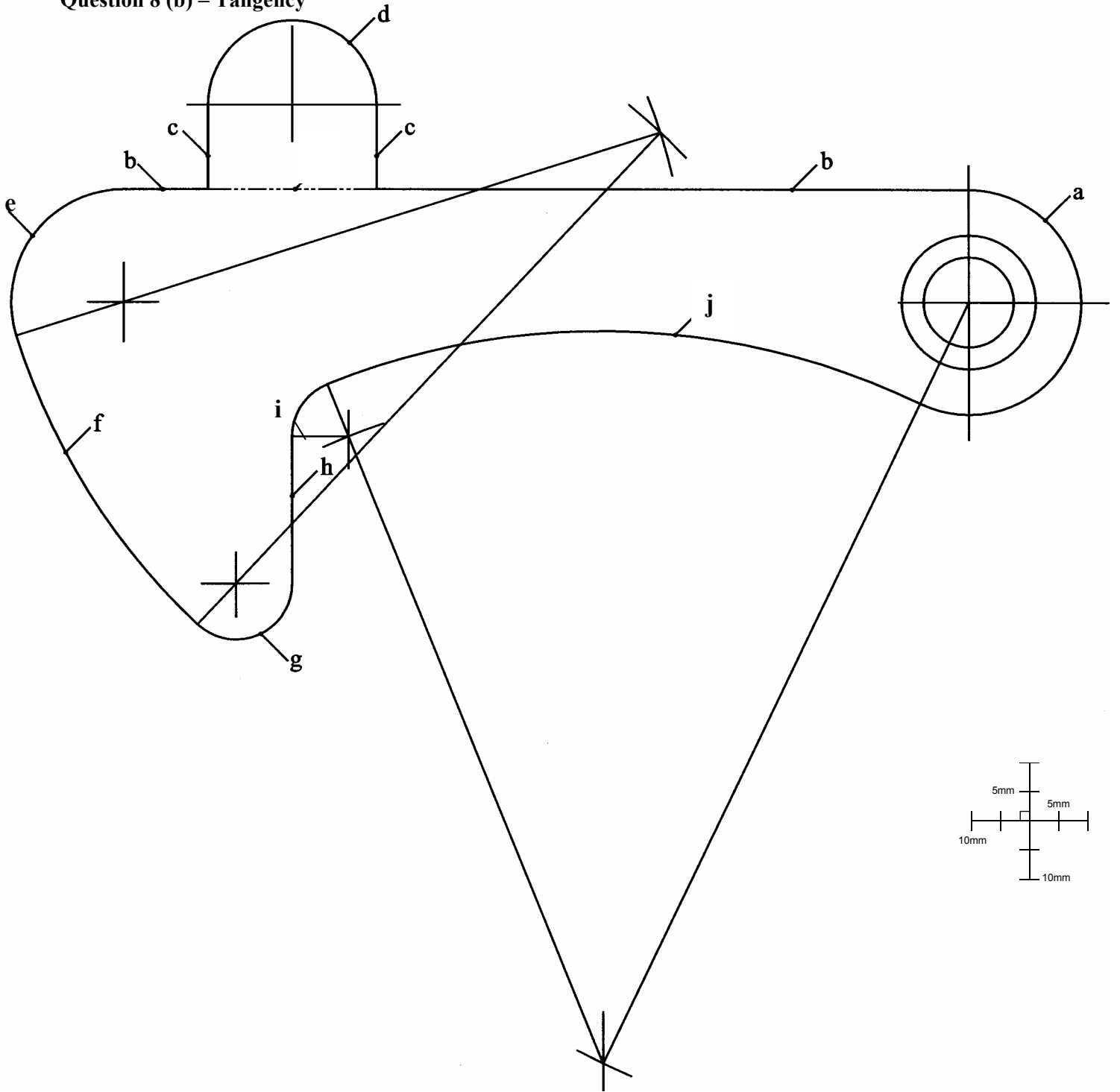
Notes:

Clear construction of centres required for mark (two intersecting lines, two arcs or one line and arc).

Clear part circle with correct radius drawn for mark.

Smooth links with no firm tails for mark.

Question 8 (b) – Tangency



Question 9 – Sectioned Assembly (Vice)

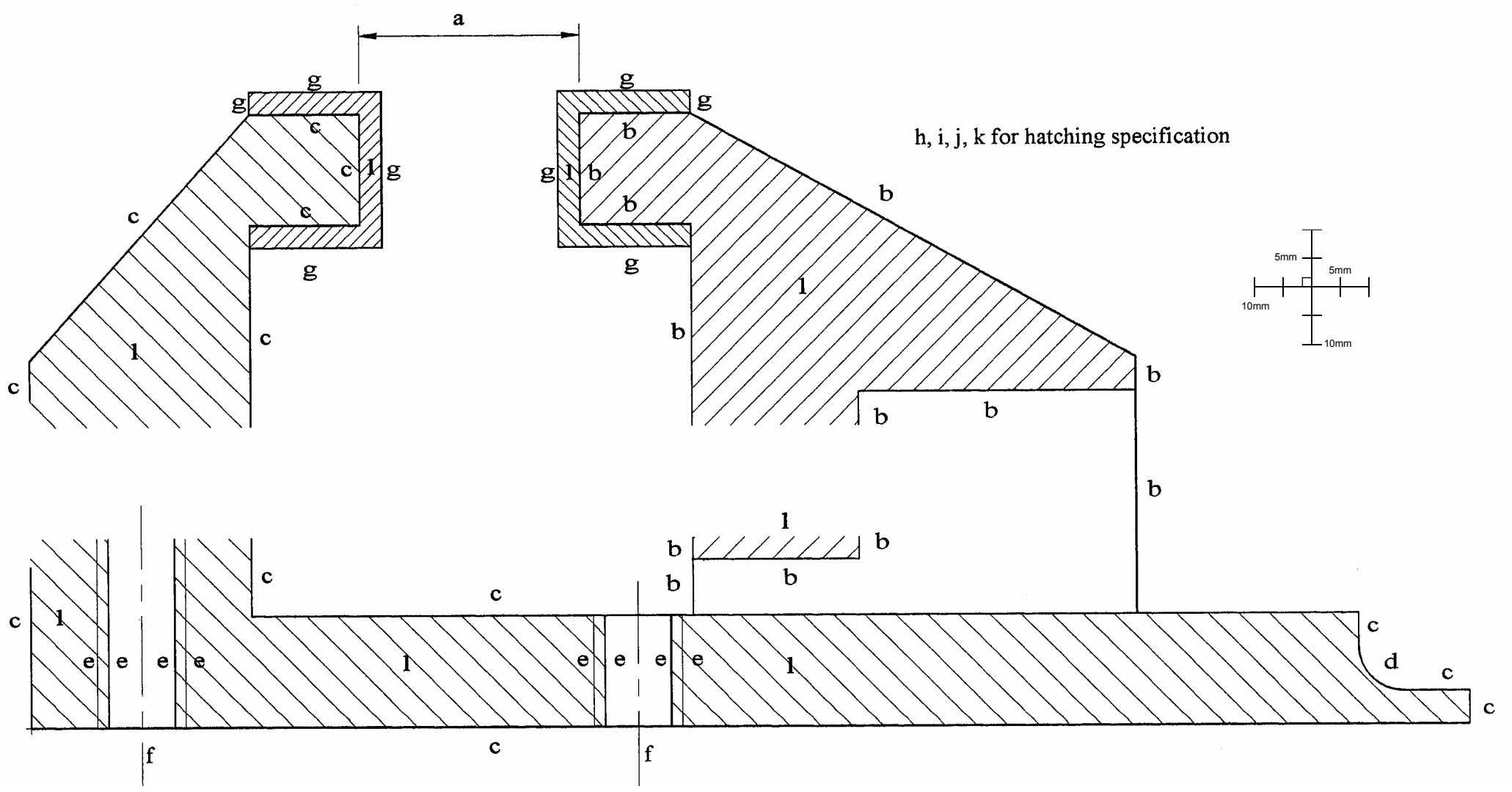
	Marks
(a) Location (set up) of faces X and Y (40 mm apart)	2
Slide	
(b) Lines: 8v, 4h, 1 slope (2 for ½, 4 for 112 for 3, 13 for 3½)	3½
Body	
(c) Lines: 7v, 5h 1 slope (2 for ½, 4 for 112 for 3, 13 for 3½)	3½
(d) Arc: for 1	1
(e) Threads: lines – 8 lines: 8v (2 for ½, 4 for 1, 6 for 1½, 8 for 2)	2
(f) Centre lines (2 for ½)	½
Grips	
(g) Lines: 4v, 4h (2 for ½, 4 for 1, 6 for 1½, 8 for 2)	2
Hatching	
(h) Correct angle 45°	1
(i) Reverse adjacent components (2 locations, ½ each)	1
(j) Hatch into threads (2 locations, ½ each)	1
(k) Vary space for size (any 2 of 3 for ½ mark)	½
(l) 8 areas (2 for ½, 4 for 1, 6 for 1½, 8 for 2)	2
Total marks	20

Notes:

Expanded breakdown for (b) and (c):

2 for ½, 4 for 1, 6 for 1½, 8 for 2, 10 for 2½, 12 for 3, 13 for 3½

Question 9 – Sectioned Assembly (Vice)



Question 10 (a) – Interpenetration and development (rainwater gutter connector)

	Marks
Elevation	
(a) Appropriate construction on plan and elevation	1
(b) Curve points: start, mid, end for ½, 4 intermediates; (2 for ½, 4 for 1); fair curve for ½	2
End Elevation	
(c) Ellipse: points: top, bottom, left, right, 8 int; (2 for ½, 4 for 1 12 for 3); fair curve for ½	3½
(d) Lines: 2v for ½	½
(e) Hidden detail (fair curve only) 2 @ ½ each	1
(f) Upper curve points: start, mid, end for ½, 4 int; (2 for ½, 4 for 1); fair curve for ½	2
(g) Lower curve points: top, bottom, left, right, 8 int; (2 for ½, 4 for 1 12 for 3); fair curve for ½	3½
Development	
(h) lines: 1h (length) for ½, 2v (height) for ½	1
(i) Upper curve points: start, mid, end for ½, 4 int; (2 for ½, 4 for 1); fair curve for ½	2
(j) Lower curve points: top, bottom, left, right, 8 int; (2 for ½, 4 for 1 12 for 3); fair curve for ½	3½
Total marks	20

Notes:

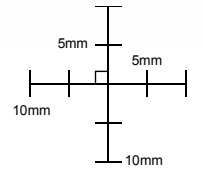
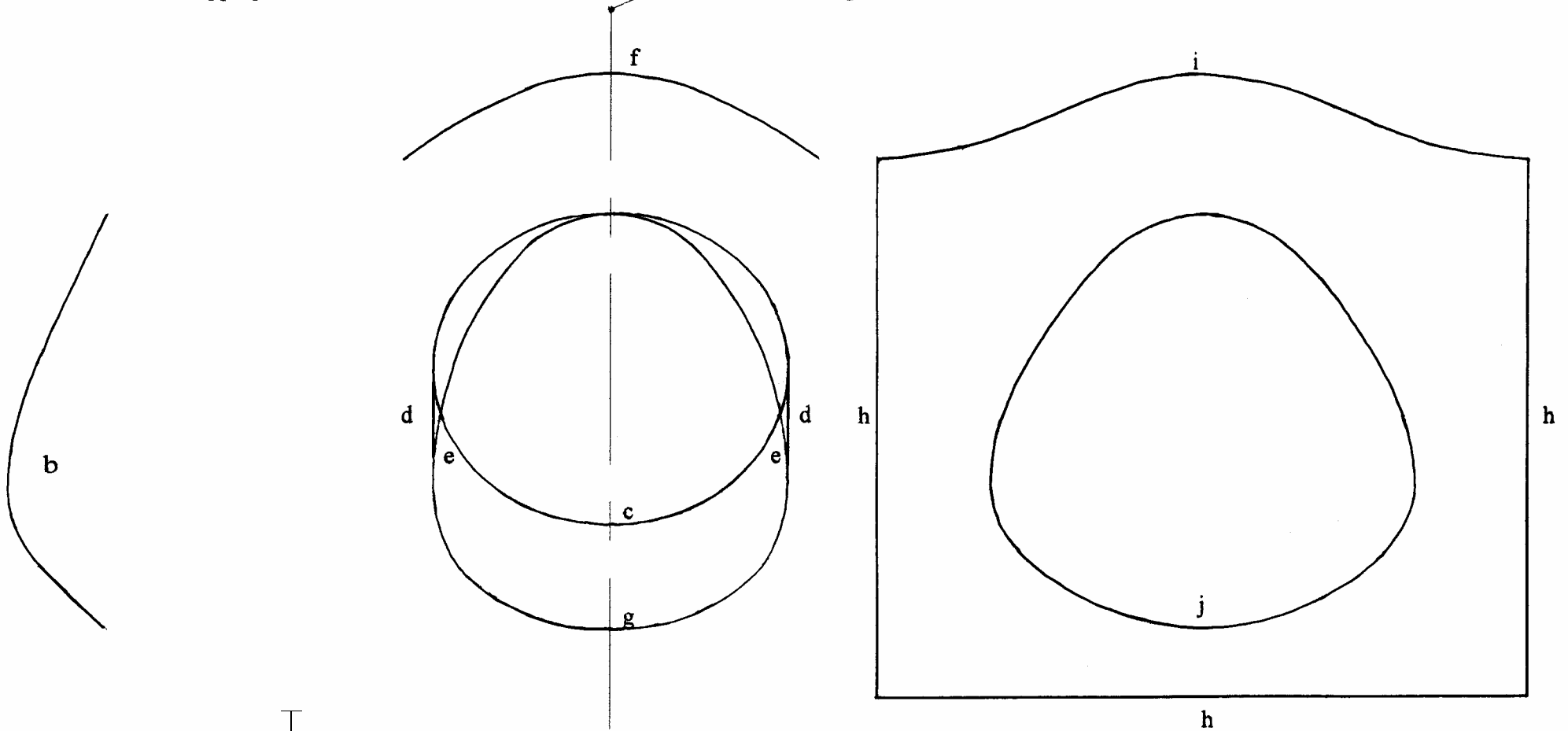
Expanded breakdown for (c), (g) and (j):

2 for ½, 4 for 1, 6 for 1½, 8 for 2, 10 for 2½, 12 for 3, 13 for 3½

Question 10 (a) – Interpenetration and development (Rainwater gutter connector)

a: appropriate construction

centre line for locating



Question 10 (b) – Auxiliary Elevation (Gutter bracket)

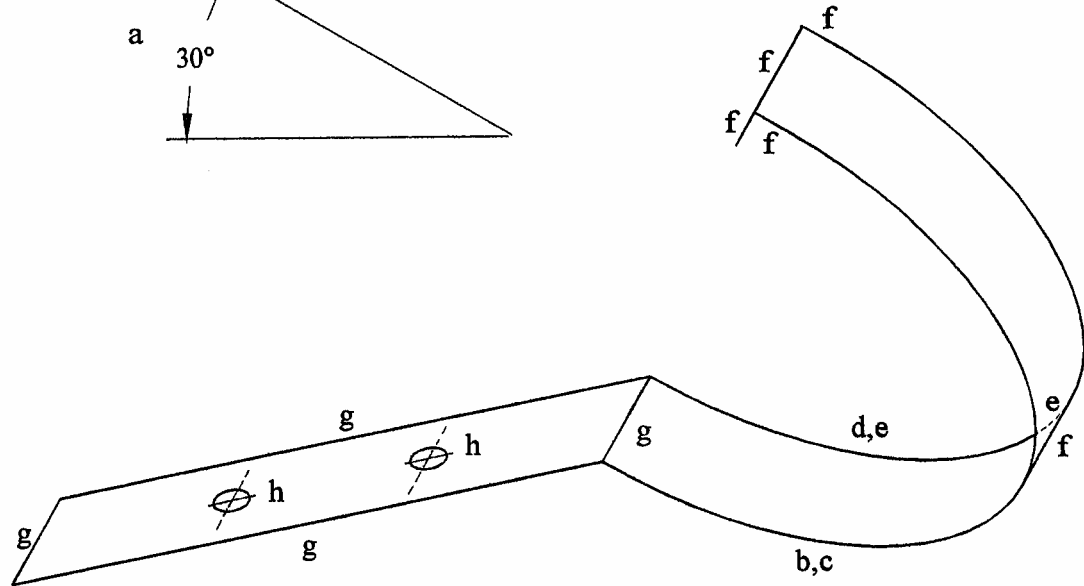
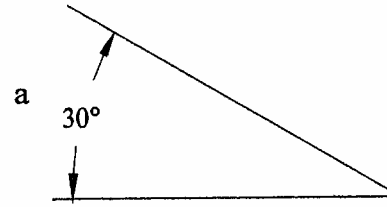
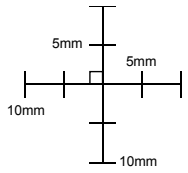
	Marks
(a) Correct projection: minimum 3 points projected	1
(b) Front curve: start, mid, finish for 1, 4 intermediate points for 1	2
(c) Fair curve	1
(d) Back curve: start, mid, finish for $\frac{1}{2}$, 4 intermediate for $\frac{1}{2}$	1
(e) Fair curve: firm for $\frac{1}{2}$, broken for $\frac{1}{2}$	1
(f) Extension to curve and baseline: 5 lines (2 for $\frac{1}{2}$, 4 for 1, 5 for $1\frac{1}{2}$)	1½
(g) Plate: 4 sloping lines (2 for $\frac{1}{2}$, 4 for 1)	1
(h) Holes: locations $\frac{1}{2}$ mark each, 2 freehand sketched holes for $\frac{1}{2}$	1½
Total marks	10

Notes:

Note for (g) Heights of “horizontal” must be correct; slopes follow through

Note for (h) Heights for holes will follow through; mark is for locations

Question 10 (b) – Auxiliary Elevation (Rainwater gutter connector)



Question 11 – Measured Perspective

	Marks
(a) VP1 and VP2 vanishing points left and right	1
(b) Height line(s): first plane (any correct)	1
(c) Wall planes: 8 lines to vps left and right (2 for $\frac{1}{2}$, 4 for 1, 6 for $1\frac{1}{2}$, 8 for 2)	2
(d) Wall: vertical lines (location); 5 lines (2 for $\frac{1}{2}$, 4 for 1, 5 for $1\frac{1}{2}$)	$1\frac{1}{2}$
(e) Workbench: 13 lines to vps left and right (2 for $\frac{1}{2}$, 4 for 1 12 for 3, 13 for $3\frac{1}{2}$)	$3\frac{1}{2}$
(f) Workbench: vertical lines (location): 9 lines (2 for $\frac{1}{2}$, 4 for 1 8 for 2, 9 for $2\frac{1}{2}$)	$2\frac{1}{2}$
(g) Drawing board: corners (location) for $\frac{1}{2}$ each, height for $\frac{1}{2}$, 4 lines (2 for $\frac{1}{2}$, 4 for 1)	$2\frac{1}{2}$
(h) Doors: vertical lines (location) (2 for $\frac{1}{2}$, 3 for 1), 1 line to vp right for $\frac{1}{2}$	$1\frac{1}{2}$
(i) Door panels: 8 lines; 4 vertical, 4 to vp right (2 for $\frac{1}{2}$, 4 for 1, 6 for $1\frac{1}{2}$, 8 for 2)	2
(j) Light planes: 6 lines to vps left and right (2 for $\frac{1}{2}$, 4 for 1, 6 for $1\frac{1}{2}$)	$1\frac{1}{2}$
(k) Light: lines vertical (location): 3 lines (2 for $\frac{1}{2}$, 3 for 1)	1
Total marks	20

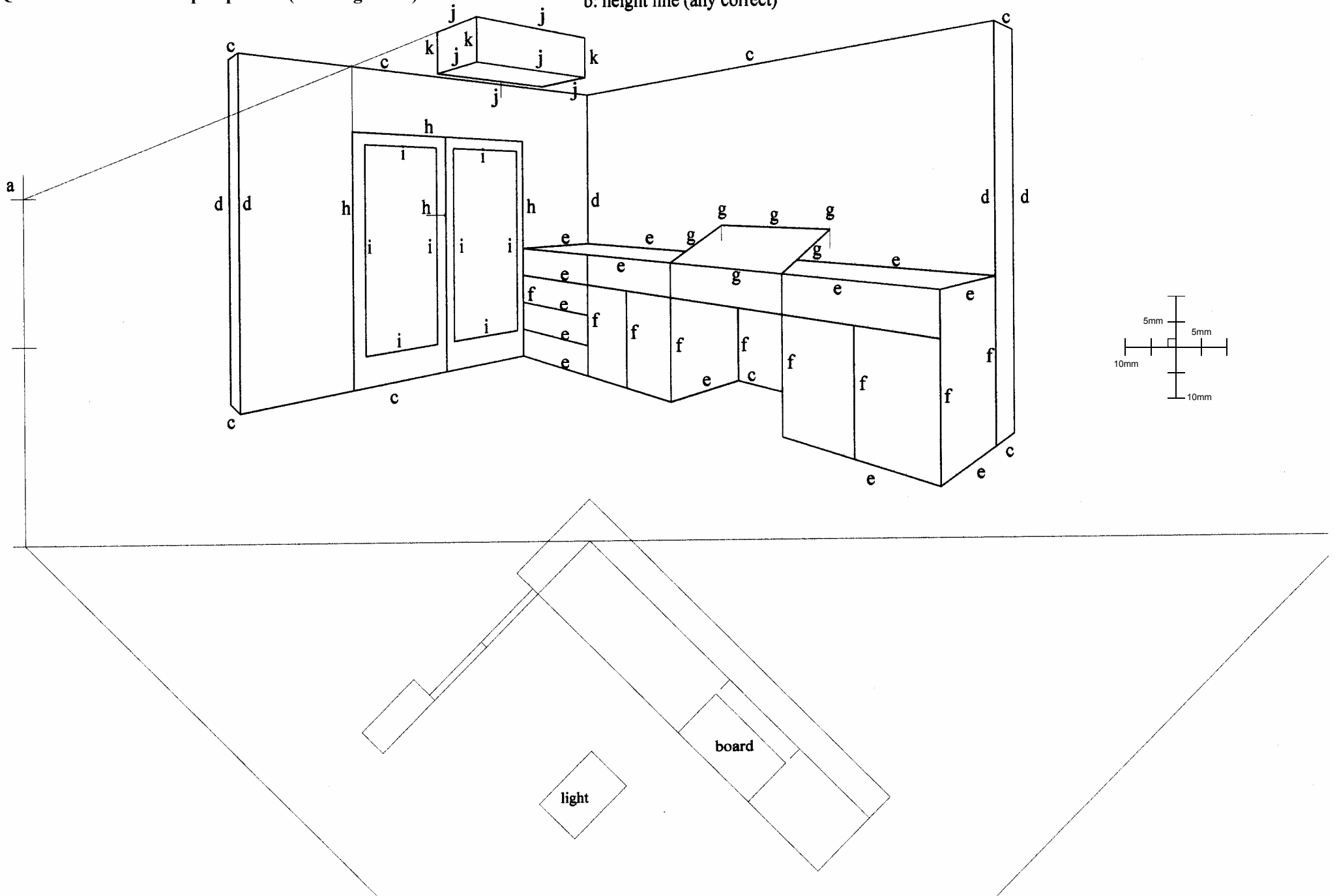
Notes:

Expanded breakdown for (e) and (f):

2 for $\frac{1}{2}$, 4 for 1, 6 for $1\frac{1}{2}$, 8 for 2, 10 for $2\frac{1}{2}$, 12 for 3, 13 for $3\frac{1}{2}$

Question 11 – Measure perspective (drawing office)

b: height line (any correct)



Question 12 – Planometric

				Marks
Walls, decking and BBQ				
(a)	Vertical lines:	11 lines	(2 for ½, 5 for 1, 8 for 1½, 11 for 2)	2
(b)	60° lines:	11 lines	(2 for ½, 5 for 1, 8 for 1½, 11 for 2)	2
(c)	30° lines:	16 lines	(2 for ½, 5 for 1, 8 for 1½, 10 for 2, 13 for 2½, 16 for 3)	3
(d)	Sloping lines:	6 lines	(3 for ½, 6 for 1)	1
(e)	Centre of arcs positioned correctly on deck.			½
(f)	Arc R40, R45:	3 arcs	(½ mark each)	1½
(g)	Arc R36:	2 arcs	(½ mark each)	1
Arch and Table				
(h)	Start, top and finish for ½ mark, 4 intermediate points for ½ mark, fair curve for ½ mark.			1½
(i)	Projection of (h) min 4 points for ½ mark, fair curve for ½ mark			1
(j)	Start, top and finish for ½ mark, 4 intermediate points for ½ mark, fair curve for ½ mark			1½
(k)	Position and dimensions of major and minor axis for ½ mark, 8 intermediate points for 1 mark (4 for ½, 8 for 1): fair curve for ½			2
(l)	Projection of (k) min 4 points for ½ mark, fair curve for ½ mark			1
(m)	Vertical lines:	5 lines	(5 for 1, 2 for ½)	2
	Tangents:	3 tangents	(3 for 1, 2 for ½)	
Total marks				20

