Coimisiún na Scrúduithe Stáit
State Examinations Commission

Scéimeanna Marcála — *Scrúduithe Ardteistiméireachta, 2003*

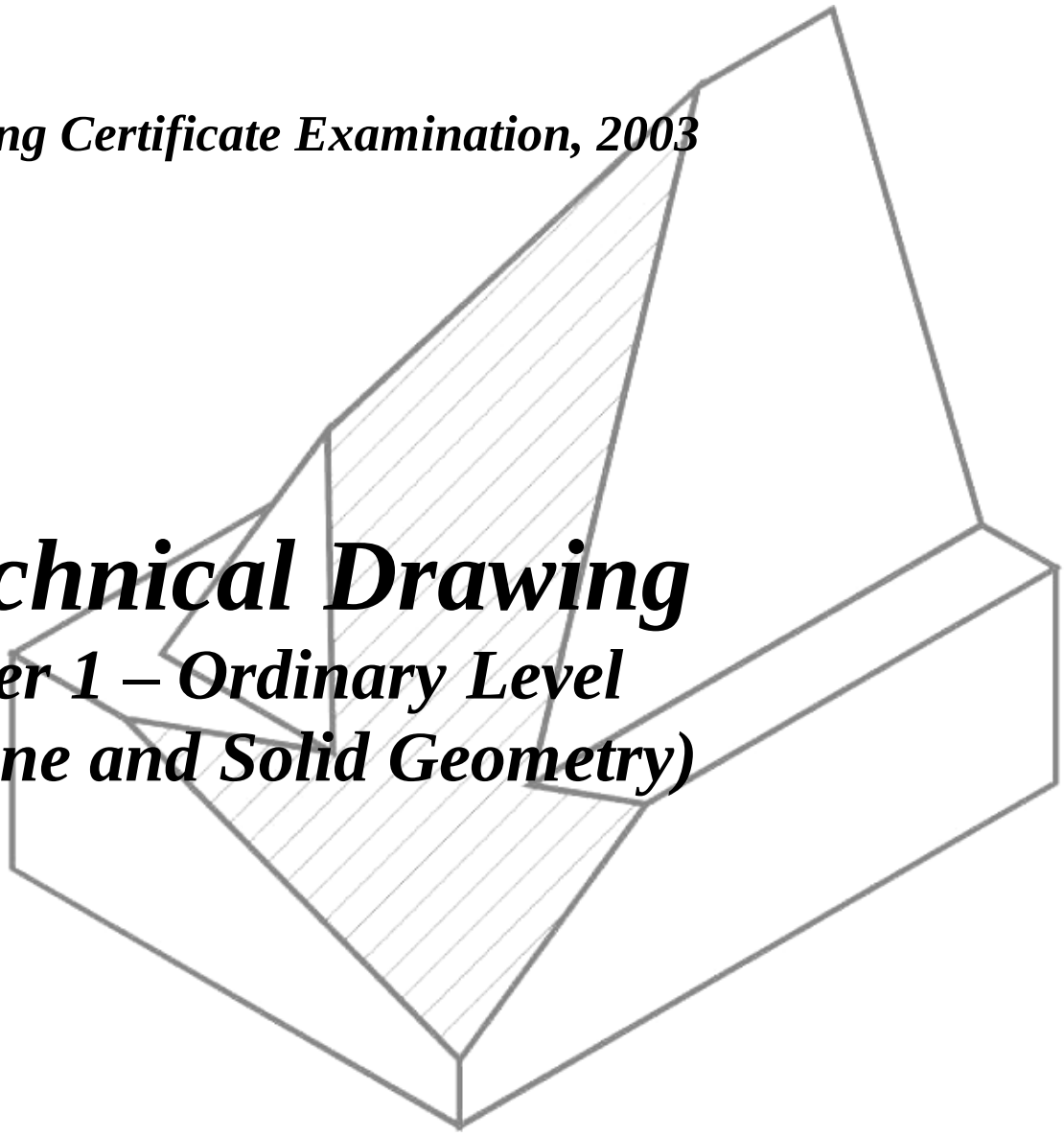
Líníocht Theicniúil — *Gnáthleibhéal*

Marking Scheme — *Leaving Certificate Examination, 2003*

Technical Drawing — *Ordinary Level*

Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate Examination, 2003



Technical Drawing

Paper 1 – Ordinary Level
(Plane and Solid Geometry)

Marking Scheme &
Sample Solutions

QUESTION 1

MARKS

(a) Elevation 18

1. Outline elevation (5x1) **5**
2. Construction to locate point c **4**
3. Locate point d **3**
4. Draw line cd **2**
5. Complete the elevation (4x1) **4**

(b) Plan 9

6. Outline plan (6x1) **6**
7. Complete plan (3x1) **3**

(c) New Elevation 18

8. X_1Y_1 parallel to plan of A **2**
9. Projections from the plan **2**
10. Heights from elevation (4x1) **4**
11. Surface A (5x1) **5**
12. Complete the new elevation (10 lines) **5**

13. **Presentation 5** **5**

Total ***50***

QUESTION 2

MARKS

(a) Triangle ABC 18

1. Draw line BC 128 long **6**
2. Geometrical division of BC **6**
3. Locate point A **2**
4. Complete triangle ABC (2x2) **4**

Point D 12

5. Draw semicircle on line AC **4**
6. Mark altitude to intersect semicircle **4**
7. Draw lines AD and CD **4**

(b) Area Conversion 15

8. Quadrilateral ABCD to triangle **4**
9. Triangle to rectangle **3**
10. Reduce rectangle to 0.75 area **2**
11. Convert rectangle to square **4**
12. Draw square **2**

13. **Presentation 5** **5**

Total ***50***

QUESTION 3

MARKS

(a) Plan 16

1. Draw cone inc. point P (3,1) **4**
2. Set up constructional view **4**
3. Locate the centre of the cylinder **4**
4. Complete plan of cylinder **4**

Elevation 10

5. Draw cone **3**
6. Draw cylinder **3**
7. Locate point P_1 ..... **4**

(b) Sphere 19

8. Locating point P_2 ..... **2**
9. Locating point O_2 ..... **4**
10. Locating point O **3**
11. Locating point O_1 ..... **3**
12. Draw spheres **4**
13. Hidden detail **3**

14. **Presentation 5** **5**

Total ***50***

QUESTION 4

MARKS

Setting up 6

1. Line CD, circles A and B (3x2) **6**

Locus of P on circle A 19

2. Division of circle **4**
3. Centres marked on line ef **4**
4. Project from divisions of circle **4**
5. Locate points on locus **4**
6. Draw the locus **3**

Locus of P on circle B 20

7. Division of circle **4**
8. Centres marked on line gh **6**
9. Project from divisions of circle **4**
10. Locate points on locus **3**
11. Draw the locus **3**

12. **Presentation 5** **5**

Total ***50***

QUESTION 5

MARKS

(a) Setting up 11

1. Given Plan **5**
2. Given Elevation **4**
3. Traces VTH **2**

Auxiliary Elevation 9

4. X_1Y_1 perp. to H.T. **2**
5. Projections parallel to H.T. **2**
6. Edge view of plane **2**
7. Auxiliary view of solid **3**

Truncation 18

8. Points bcdefg in plan (6x1) **6**
9. Points abcdef in elevation (6x1) **6**
10. Complete plan **3**
11. Complete elevation **3**

(b) True Shape 7

12. Setting up true widths and lengths **4**
13. Draw the true shape **3**

14. **Presentation 5** **5**

Total ***50***

QUESTION 6

MARKS

(a) Ellipse 24

1. Set up major axis and foci points **6**
2. Locate the minor axis **6**
3. Locate points on the curve **8**
4. Draw the curve **4**

(b) Hyperbola 21

5. Set up as given (1,1,1) **3**
6. Locating focus **6**
7. Locating vertex **3**
8. Points on curve **6**
9. Draw the curve **3**

10. **Presentation 5** **5**

Total ***50***

QUESTION 7

MARKS

Setting Up 20

1. Given plan **6**
2. Given elevation **6**
3. End elevation (8x1) **8**

Interpenetration 25

4. Projections from RHS of plan **3**
5. Locate points in elevation (3x2) **6**
6. Complete the RHS (3x1) **3**
7. Projections from LHS of plan, end elevation (4x1) **4**
8. Locate points on LHS **4**
9. Complete the LHS **4**
10. Hidden detail **1**

11. **Presentation 5** **5**

Total ***50***

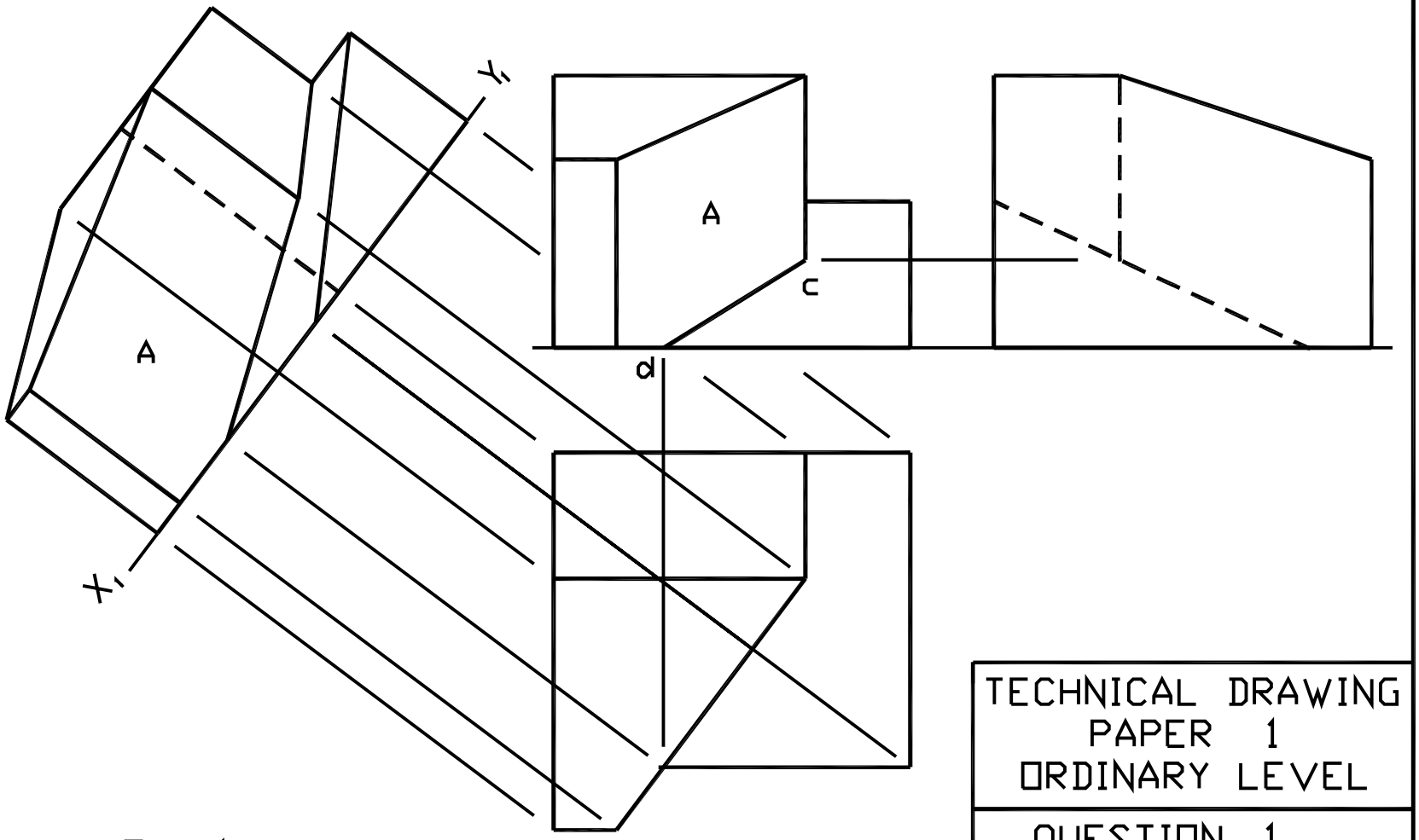


Fig. 1

TECHNICAL DRAWING PAPER 1 ORDINARY LEVEL
QUESTION 1
2003

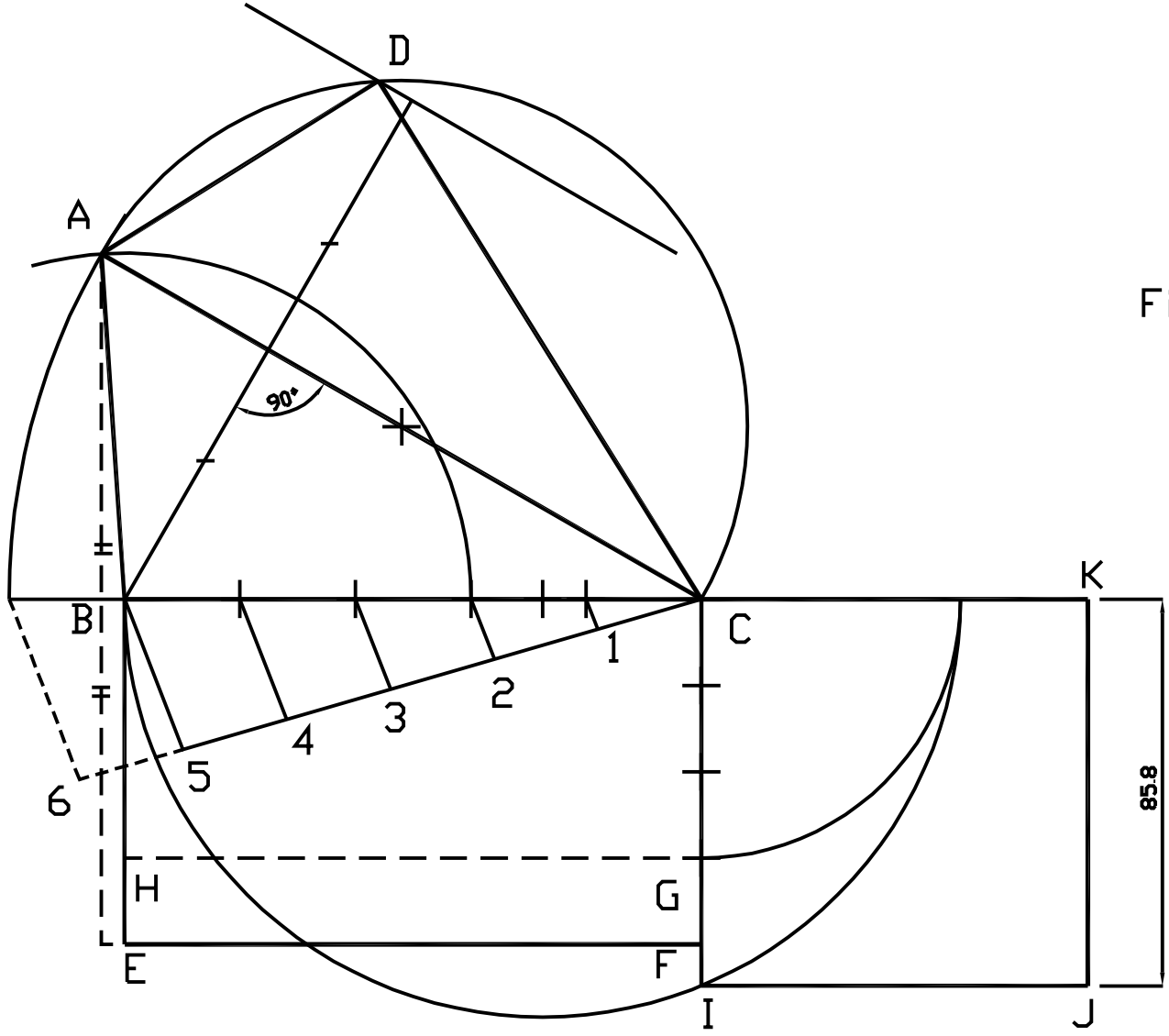


Fig. 2

TECHNICAL DRAWING PAPER 1 ORDINARY LEVEL
QUESTION 2
2003

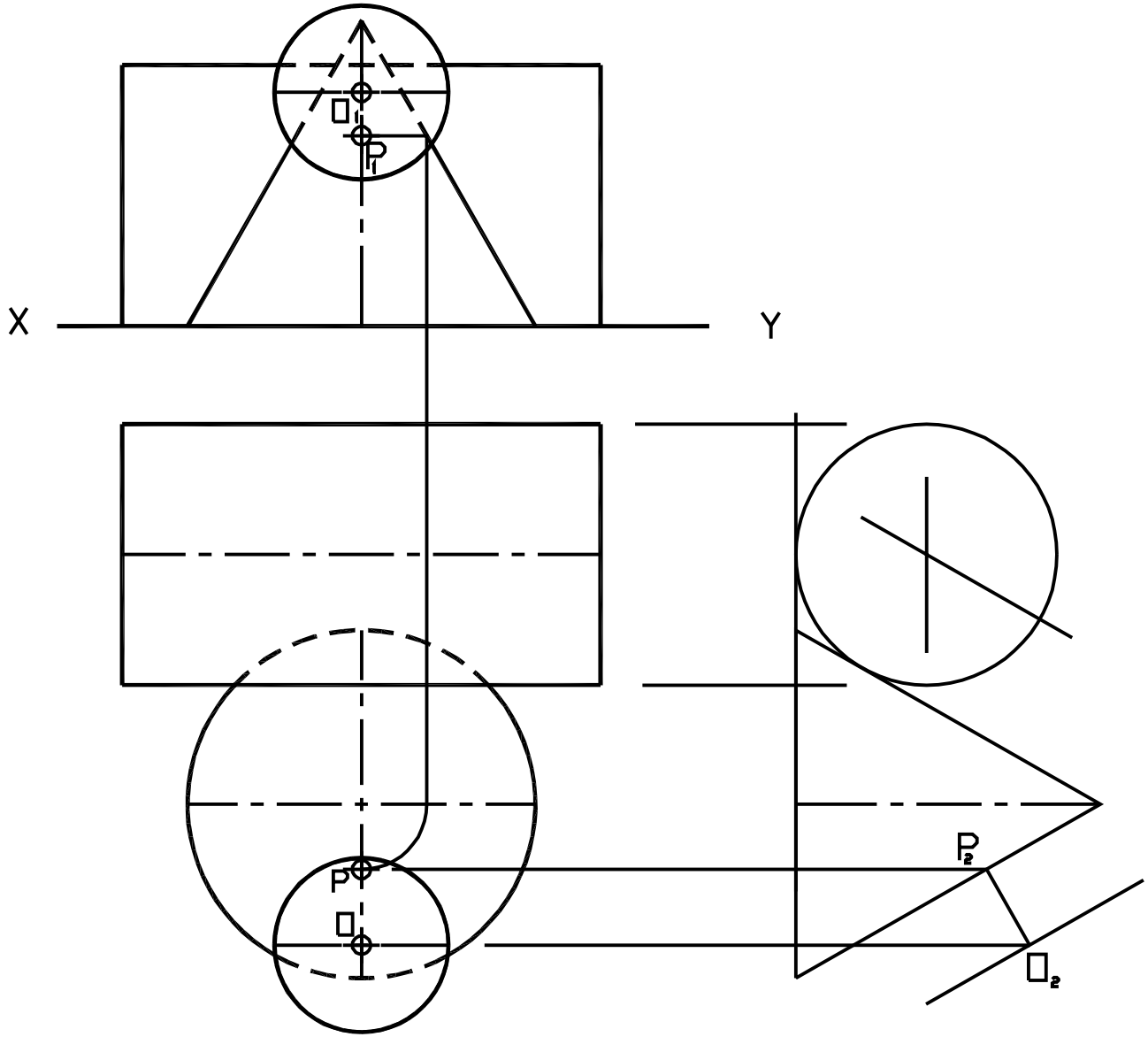


Fig. 3

TECHNICAL DRAWING PAPER 1 ORDINARY LEVEL
QUESTION 3
2003

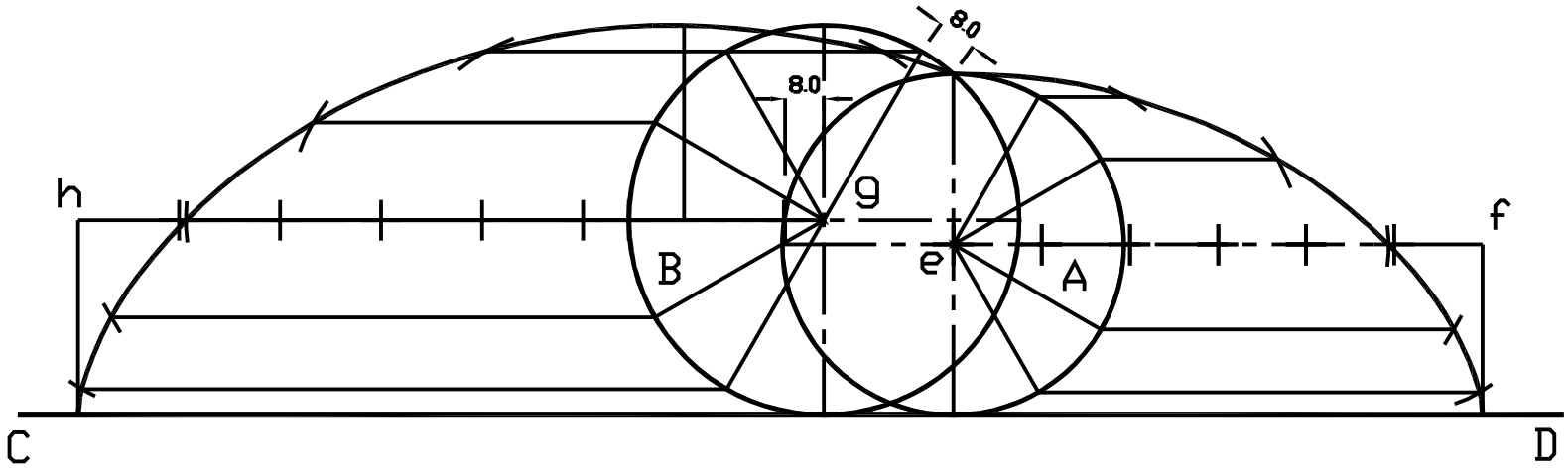


Fig. 4

TECHNICAL DRAWING PAPER 1 ORDINARY LEVEL
QUESTION 4
2003

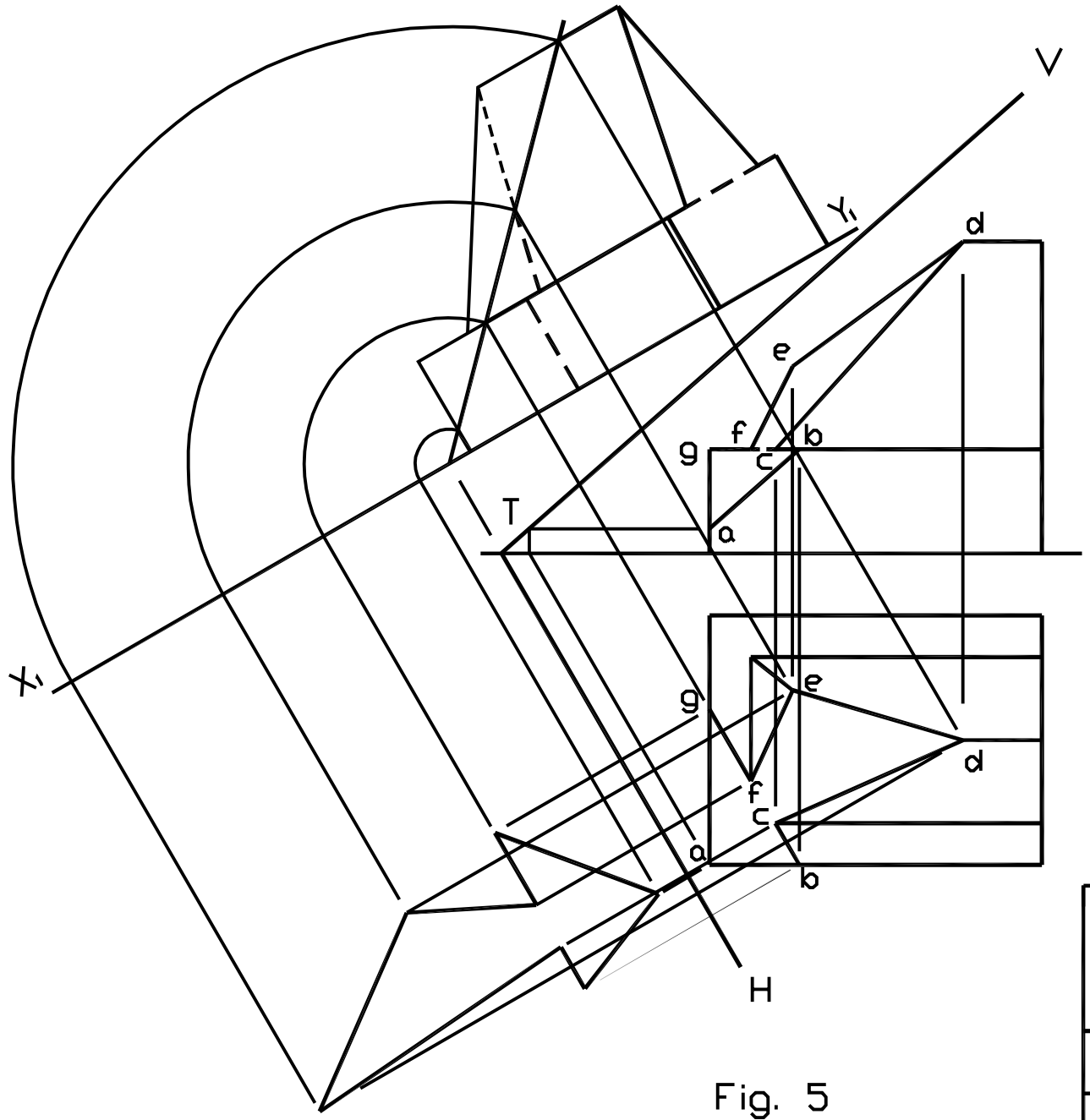


Fig. 5

TECHNICAL DRAWING PAPER 1 ORDINARY LEVEL
QUESTION 5
2003

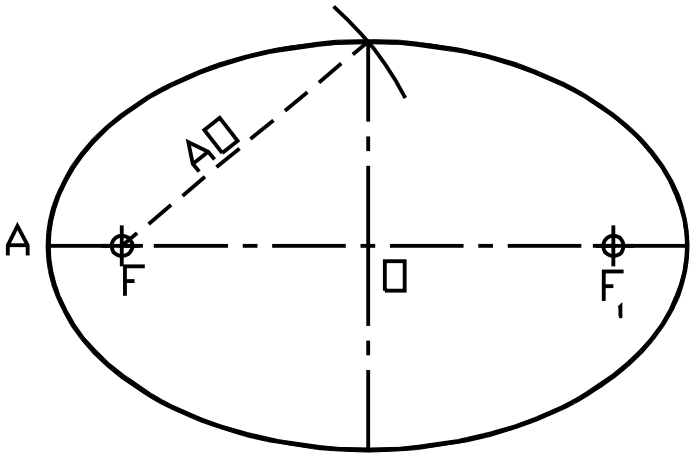


Fig. 6a

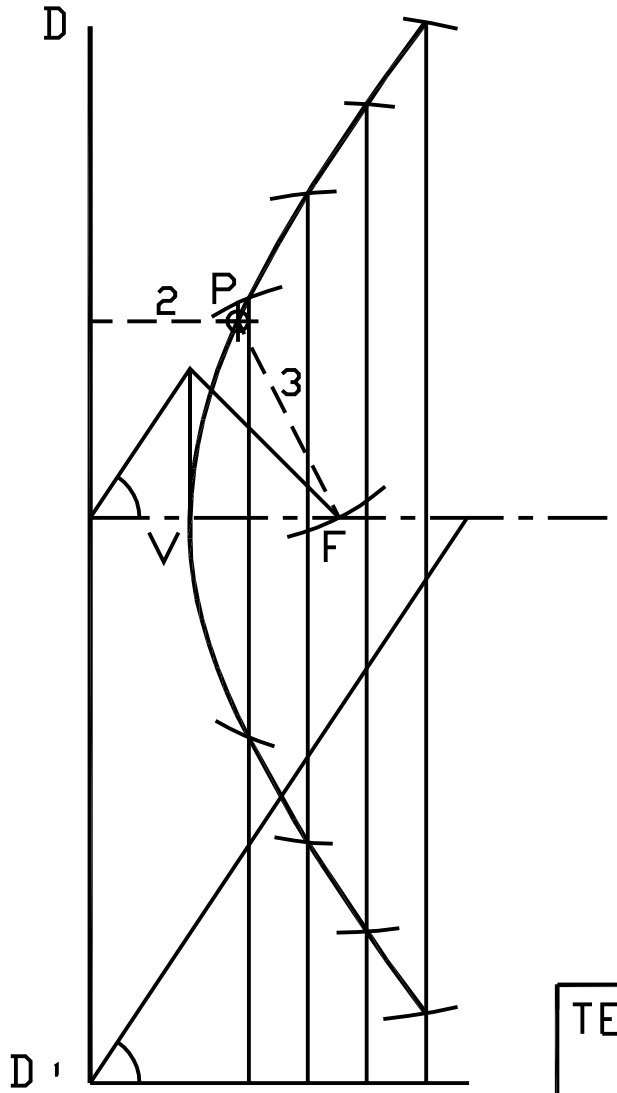


Fig. 6b

TECHNICAL DRAWING PAPER 1 ORDINARY LEVEL
QUESTION 6a & 6b
2003

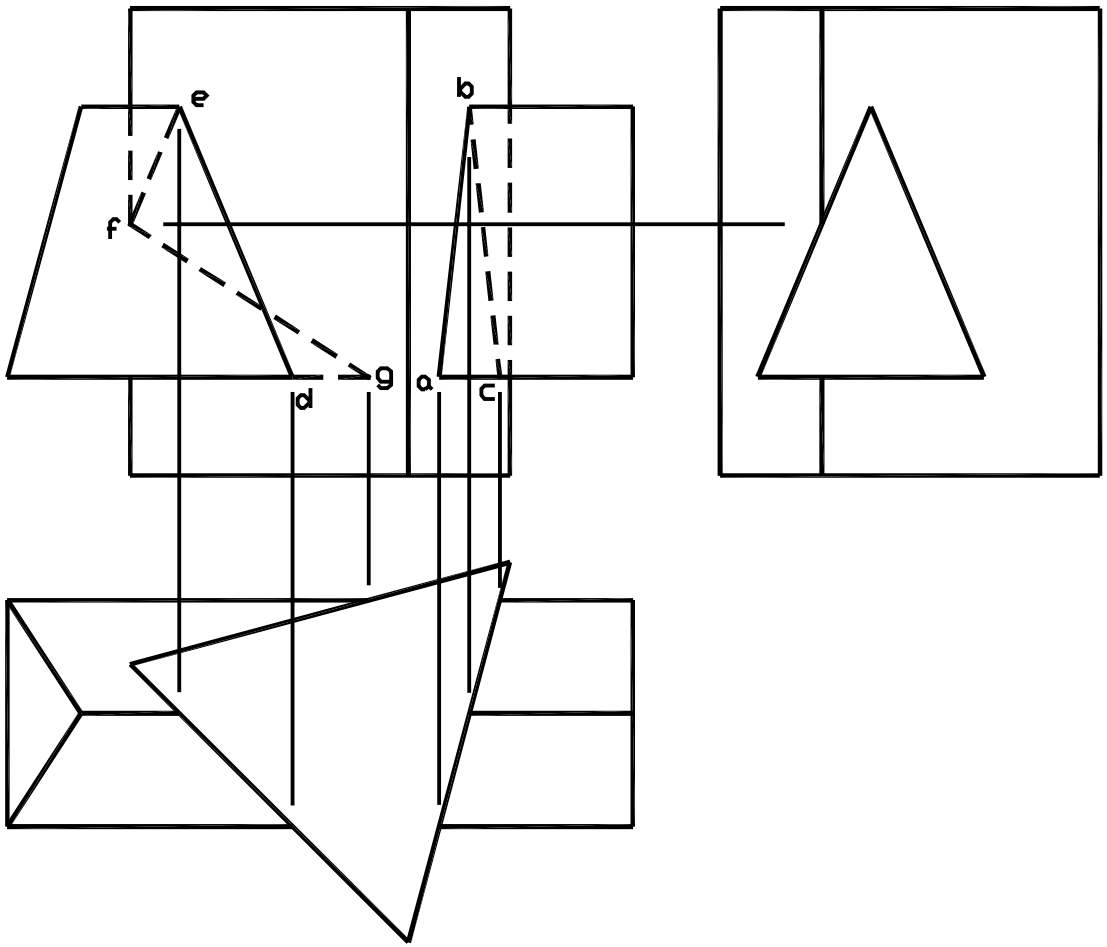


Fig. 7

TECHNICAL DRAWING PAPER 1 ORDINARY LEVEL
QUESTION 7
2003

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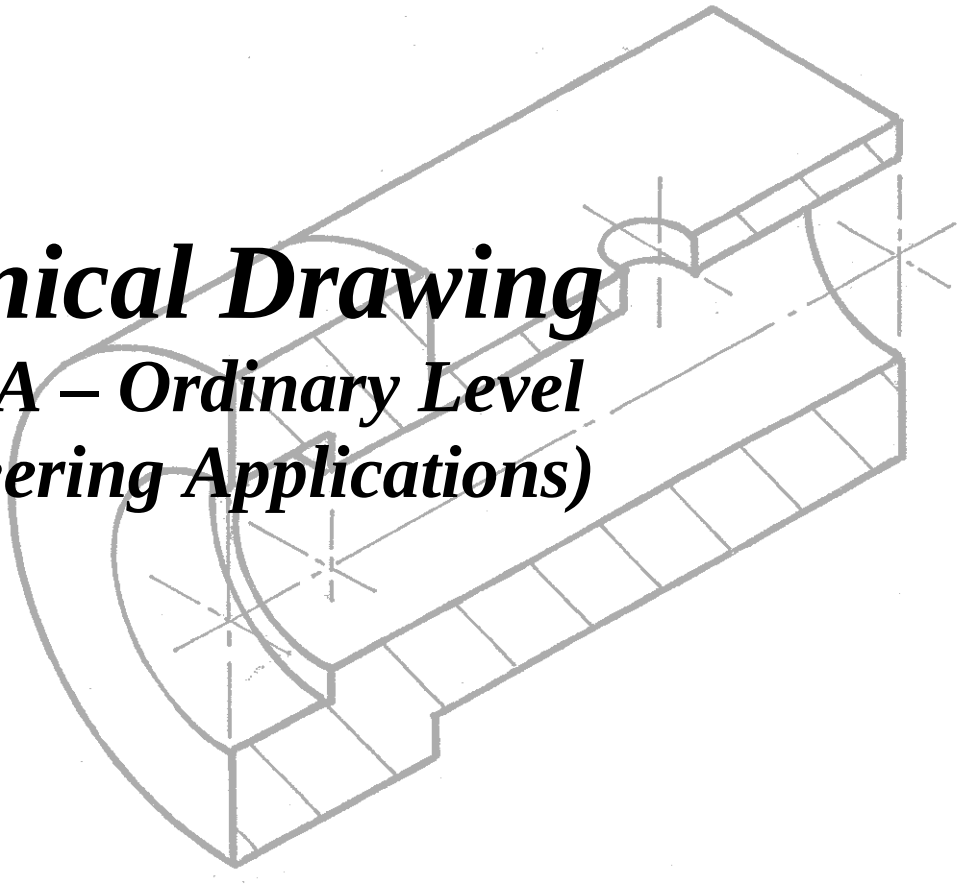


Technical Drawing

Paper 2A – Ordinary Level (Engineering Applications)

Marking Scheme & Sample Solutions

QUESTION 1 **100 MARKS**

CONCEPTS

A	**Assembly**	**5 marks**
B	**Sectional Elevation**	**45 marks**
C	**Plan**	**25 marks**
D	**Additional Requirements**	**25 marks**

1A ASSEMBLY 5 marks

(i)	Hinge to Body	1
(ii)	Jaw to Hinge	1
(iii)	Screw to Jaw	1
(iv)	Spindle to Hinge/Jaw	1
(v)	Circlip to Hinge	1

1B SECTIONAL ELEVATION

1. Body 14 marks

(i)	L/H Slot	2
(ii)	Section Base left side	2
(iii)	Location Slot	2
(iv)	Hinge Hole	2
(v)	Section Base right side	2
(vi)	Screw Step	2
(vii)	Slot R/H	2

2. Hinge 6 marks

(i)	Screw Thread Convention	2
(ii)	Rectangle Section	2
(iii)	Rectangle (Arm)	2

3. Jaw 8 marks

(i)	Location Step	2
(ii)	L/H Section	2
(iii)	R/H Section	2
(iv)	Rectangle Section (right)	2

4. Screw 10 marks

(i)	Knurled Head	2
(ii)	Chamfers	2
(iii)	Thread Convention	2
(iv)	Thread Length	2
(v)	Dome/Chamfer	2

5. Spindle 4 marks

(i)	Circle	2
(ii)	Hatched	2

6. Centre Lines 3 marks

(6 no.) 0.5 each

1C PLAN **25 marks**

1. Body 9 marks

(i)	L/Hand Step	1
(ii)	L/Hand Slot	1
(iii)	Location Slot	2
(iv)	Surface Area (Hinge)	2
(v)	Screw Bearing Area	1
(vi)	R/Hand Step	1
(vii)	R/Hand Slot	1

2. Hinge 4 marks

(i)	Rectangle Top	2
(ii)	Rectangle Bottom	2

3. Jaw 2 marks

(i)	Top Surface Area	2

4. Screw 2 marks

(i)	Outer Diameter	1
(ii)	Inner Diameter	1

5. Spindle 6 mark

(i)	Head - Rectangle	1
(ii)	Head – Chamfer	1
(iii)	Circlip	2
(iv)	Pin end – Rectangle	1
(v)	Chamfer	1

6. Centre Lines 2 marks

(5 no.)

1D ADDITIONAL REQUIREMENTS **25 marks**

(i)	First or third angle projection		4 marks
(ii)	Title		3 marks
	(a) Form	1	
	(b) Width and height	1	
	(c) Spacing	1	
(iii)	ISO Symbol		4 marks
	(correct 4 marks)		
	(incorrect 2 marks)		
(iv)	Dimensioning		4 marks
	(a) Projection Lines	1	
	(b) Dimension Lines	1	
	(c) Arrow Heads	1	
	(d) Figures	1	
(v)	Presentation		10 marks

Excellent	10
Very Good	8
Good	6
Fair	4
Poor	2

QUESTION 2

DEVELOPMENT **50 MARKS**

A.	**Completed Views**	14 marks
B.	**Elevation R**	4 marks
C.	**Development of Triangular Pipe**	12 marks
D.	**True Shape of Hole**	10 marks
E.	**Presentation**	10 marks

2A COMPLETED VIEWS 14 marks

(i)	Cylinder	2
(ii)	Triangular Pipe	2
(iii)	Elevation of Triangular Pipe	2
(iv)	Division of Sides	3
(v)	Projection of Divisions	3
(vi)	Curve of Intersection	2

2B ELEVATION R 4 marks

(i)	Cylinder	2
(ii)	Triangular Pipe	2

2C SURFACE DEVELOPMENT 12 marks

(i)	Square end of pipe	2
(ii)	True length of side	2
(iii)	Generator Distances	2
(iv)	Generator Heights	2
(v)	Semi-Circle	2
(vi)	Curve	2

2D TRUE SHAPE OF HOLE 10 Marks

(i)	Length of Hole (perpendicular height)	2
(ii)	Height of Points	2
(iii)	Distance apart of Points	2
(iv)	Side Curves	2
(v)	Base Line	2

2E PRESENTATION 10 marks

Excellent	10
Very good	8
Good	6
Fair	4
Poor	2

Note: Indexing to be taken account of under this heading

QUESTION 3 **50 marks**

3A. CAM PROFILE 30 Marks
3B. MECHANISM 20 Marks

3A CAM PROFILE **30 Marks**

(a) Cam Profile 15 marks
(b) Displacement Diagram 10 marks
(c) Presentation 5 marks

(a) Cam Profile 15 marks

(i)	Minimum radius	1
(ii)	Maximum radius	1
(iii)	Graduation in seconds	3
(iv)	0 - 0.25 secs. Uniform Velocity	2
(v)	0.25 - 0.5 secs. Dwell	2
(vi)	0.5 – 1 sec. Simple Harmonic Motion	2
(vii)	Direction of Rotation	1
(viii)	Drawing of Profile	3

(b) Displacement Diagram 10 marks

(i)	360^0 to correct times	3
(ii)	Lift / Travel	2
(iii)	0 - .25 secs. Uniform Velocity	1
(iv)	.25 - .5 secs. Dwell	1
(v)	.5 – 1 sec. Simple Harmonic Motion	1
(vi)	Drawing of curve	2

(c) Presentation 5 marks

(i)	Excellent	5
(ii)	Very Good	4
(iii)	Good	3
(iv)	Fair	2
(v)	Poor	1

Note: Indexing to be taken account of under this heading.

3B. MECHANISM **20 Marks**

(a)	Line Diagram	3 marks
(b)	Locus of A_1 (crank)	3 marks
(c)	Plotting Locus of end A (Link)	5 marks
(d)	Plotting Locus of End B (Link)	5 marks
(e)	Machine Guard	4 marks

(a) Line Diagram 3 marks

(i)	Crank OA1	1
(ii)	Link AB	1
(iii)	Fixed Pivot B1	1

(b) Locus of A1 3 marks

(i)	Circle	1
(ii)	Divisions	1
(ii)	Direction of Rotation	1

(c) Locus of Link End A 5 marks

(i)	Plotting of Points	3
(ii)	Drawing of Locus	2

(d) Locus of Link End B 5 marks

(i)	Plotting of Points	3
(ii)	Drawing of Locus	2

(e) Machine Guard 4 marks

(i)	Minimum clearance 15mm	1
(ii)	Drawing of guard	3
	Excellent 3	
	Good 2	
	Fair 1	

QUESTION 4 **50 MARKS**

A	**Dimensioned Drawing**	**36 Marks**
B	**Mechanism**	**8 Marks**
C	**Engineering Terms**	**6 Marks**

4A DIMENSIONED DRAWING **36 marks**

(a)	Shape Description	13 marks
(b)	Size Description	18 marks
(c)	Presentation	5 marks

(a) Shape Description 13 marks

(i)	Dome	1	
(ii)	Shaft diam/length	1	
(iii)	Thread Convention	2	
	Diam/length	1	
(iv)	Shaft diam/length	1	
(v)	Radius	1	
	Shaft diam/length	1	
(vi)	Control Knurl finish	2	
	Diam / length	1	
	Chamfers	2	

(b) Size Description **18 marks**

(i)	Dome Radius	2	
(ii)	Diameters x 4	4	
(iii)	Lengths x 5	5	
(iv)	Chamfers x 2	2	
(v)	Radius x 1	2	
(vi)	Screw Thread Designation	3	
	(a) Metric	1}	
	(b) Nominal diameter	1}	
	(c) Pitch	1}	

(c) Presentation 5 marks

(i)	Centre lines	2
(ii)	Dimensions	3

4B. MECHANISM 8 marks

(i)	Fig. 5 - Hand Drill	2
(ii)	Part 1- Handle	1
	Part 2 - Body/Housing	1
	Part 3 - Shaft	1
	Part 4 - Chuck	1
(iii)	Gearing Arrangement – Bevel Gears	2

4C ENGINEERING TERMS 6 marks

(i)	Blind Hole	2
(ii)	Bore	2
(iii)	Slot	2

QUESTION 5 SECTION A **50 Marks**

5A Isometric View 38 Marks
5B Structural Steel Sections 12 Marks

5A ISOMETRIC VIEW

(a) Correct View Point P 4 marks

(b) Sectioned View 14 marks

(a) Sectioned View

(i)	Top of cylinder	2
(ii)	Step	2
(iii)	Bottom of cylinder	2
(iv)	Step	2
(v)	Top of barrel	2
(vi)	Bottom of barrel	2
(vii)	Hole in top flat	2

(b) Unsectioned View 16 marks

(i)	Face P	2
(ii)	Counter bore	2
(iii)	Face of counter bore	2
(iv)	Small triangle (top)	2
(v)	Barrel bore	2
(vi)	Top of front cylinder	2
(vii)	Flat top	2
(viii)	Centre lines	2

(c) Presentation 4 marks

(i)	Excellent	4
(ii)	Very good	3
(iii)	Good	2
(iv)	Fair	1

5B STRUCTURAL STEEL SECTIONS 12 marks

(i)	Tee Section		4 marks
	(a)	Table	1
	(b)	Stalk	1
	(c)	Sketch	2
(ii)	Channel Section		4 marks
	(a)	Sides	1
	(b)	Flat	1
	(c)	Sketch	2
(iv)	Unequal Leg Angle		4 marks
	(a)	Short leg	1
	(b)	Long Leg	1
	(c)	Sketch	2

QUESTION 5 SECTION B 50 Marks

(a) Wire Frame Representation of 7.1 10 marks

(b) Four automatic Cad facilities 4 x 3 12 marks

(c) Most suitable snap resolution for fig. 7.2 4 marks

(d) Six commands to produce fig. 7.3 6 x 2 12 marks

(e) Explanation of commands 12 marks

(i) Trim 4

(ii) Mirror 4

(iii) Array 4

(a) Wire Frame Representation of fig. 7.1 10 marks

(i)	Frame of base	1
(ii)	Top of base	1
(iii)	Back of lug	2
(iv)	Face of lug	2
(v)	Cylinder	2
(vi)	Square hole	2

(b) Four Automatic Facilities of CAD 4 x 3 12 marks

(i)	Copies	2
(ii)	Colour	2
(iii)	Line Thickness	2
(iv)	Hatching	2
(v)	Tangents	2
(vi)	Fillets	2

(c) Most suitable snap resolution for fig. 7.2

0.5 4 marks

(d) Six commands to complete fig. 7.3 6 x 2 12 marks

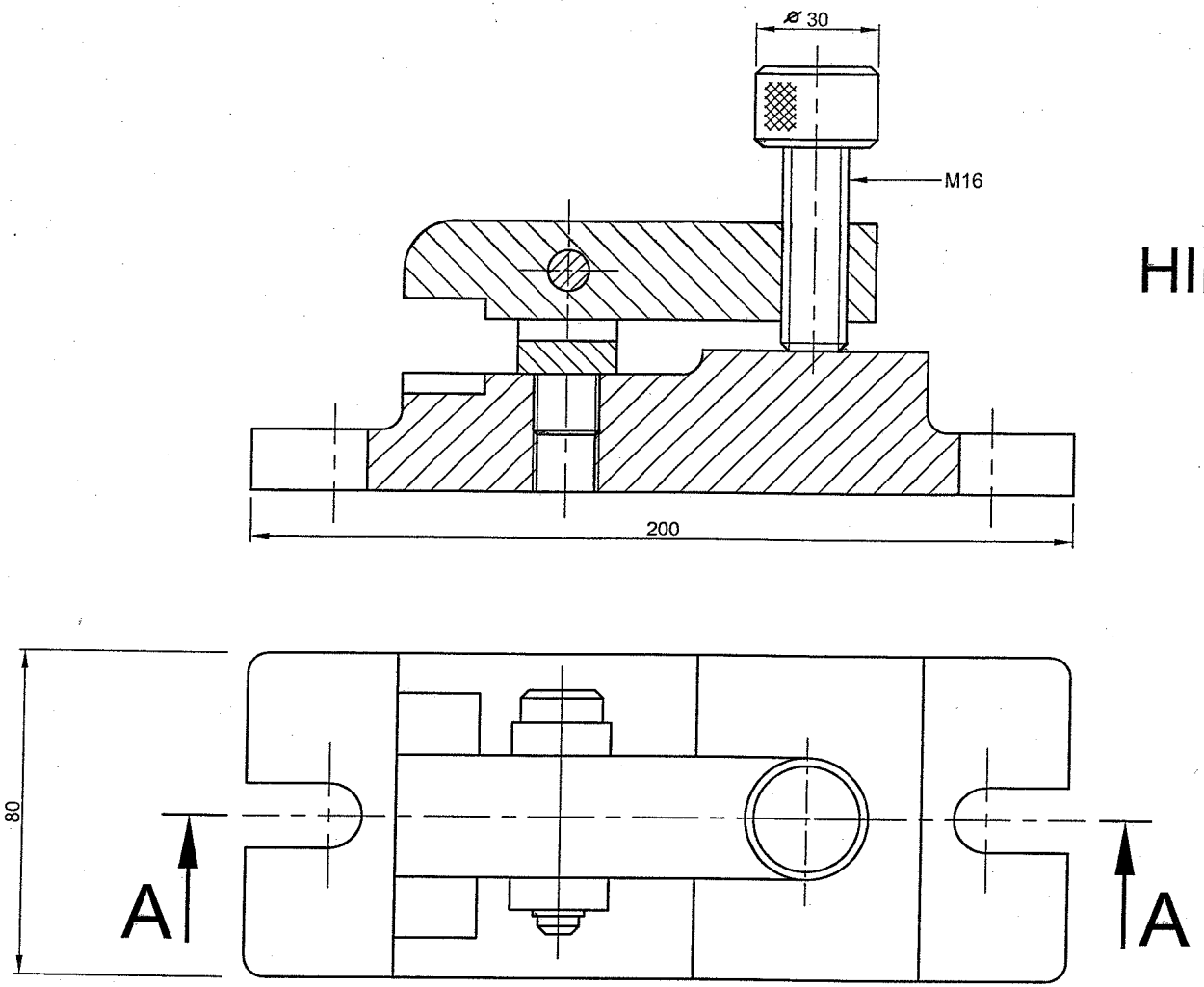
(i)	Linetype	2
(ii)	Cut	2
(iii)	Editing	2
(iv)	Edit	2
(v)	Centre Line	2
(vi)	Radius etc. etc.	2

(e) Commands Explanation 3 x 4 12 marks

(i) Trim: Objects maybe trimmed so they end at a cutting edge defined by one or more other objects fig. (i)

(ii) Mirror: Is the capability to create the reverse image of a feature about a chosen line of symmetry fig. (ii)

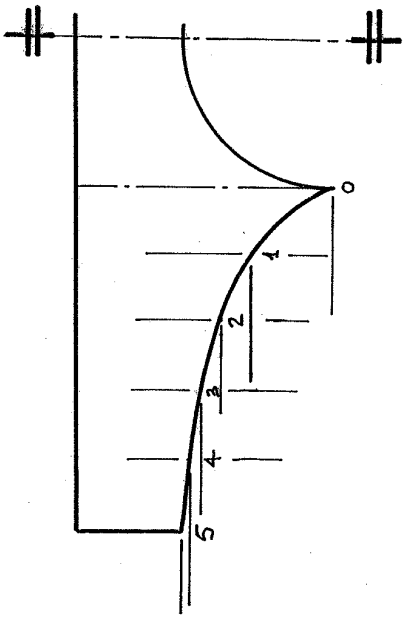
(iii) Array: The array command allows you to make multiple copies of selected objects in a rectangular or polar pattern Fig. (iii)



HINGE CLAMP

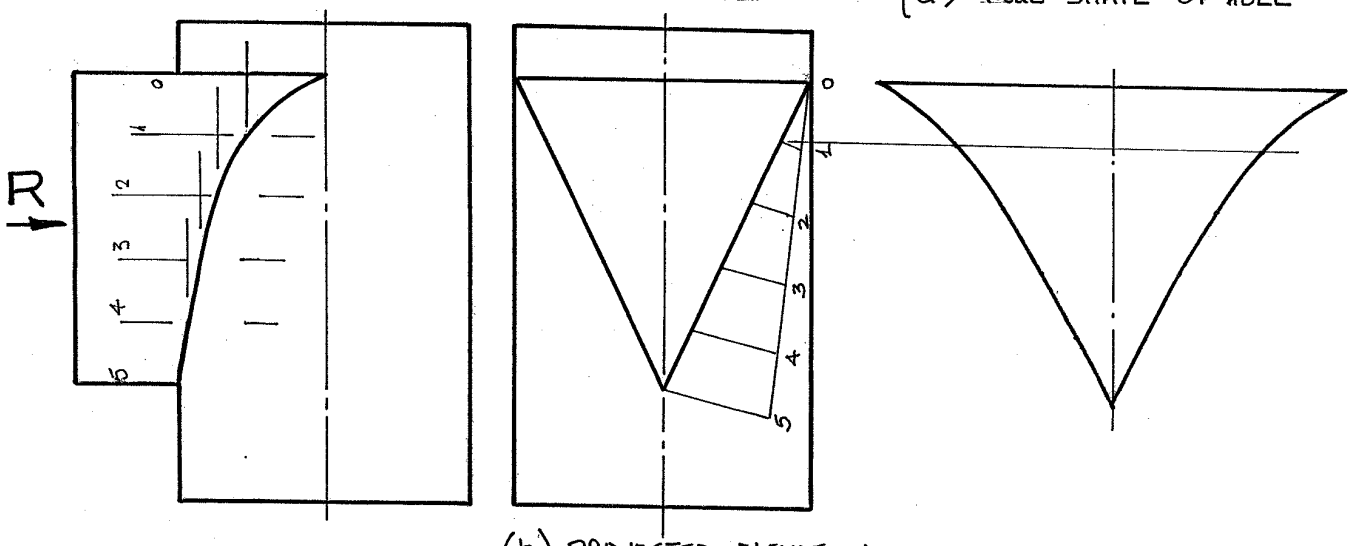
FIG. 1. FÍOR 1./2003

PROJECTION
TEILGEAN

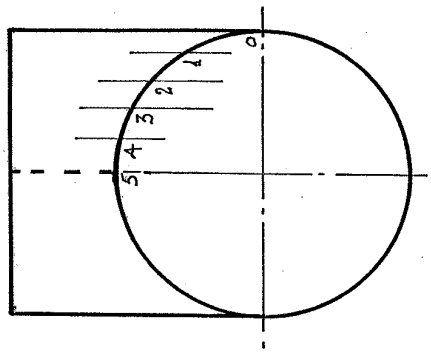


(c) SURFACE DEVELOPMENT OF TRIANGULAR PIPE

(d) TRUE SHAPE OF HOLE

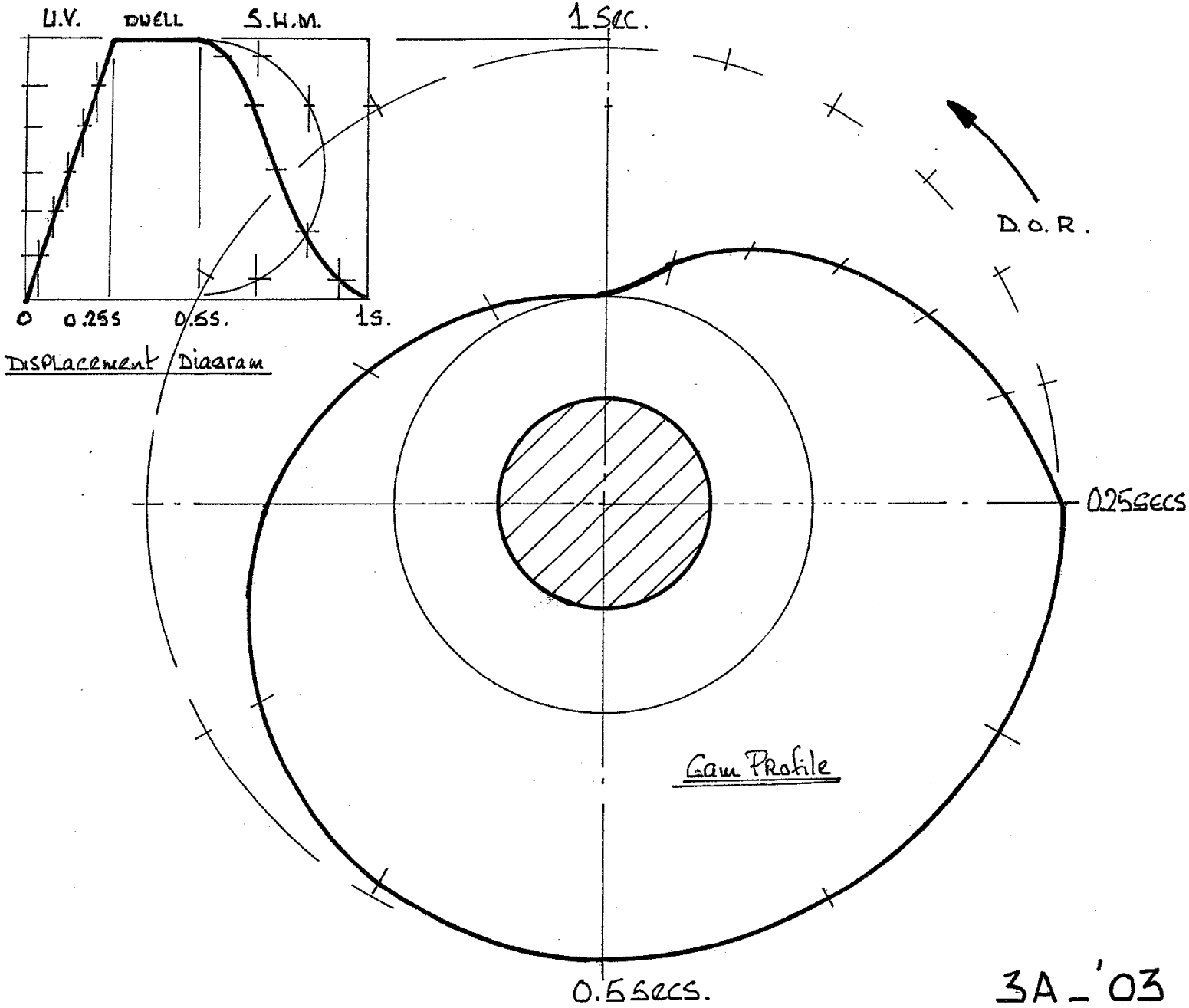


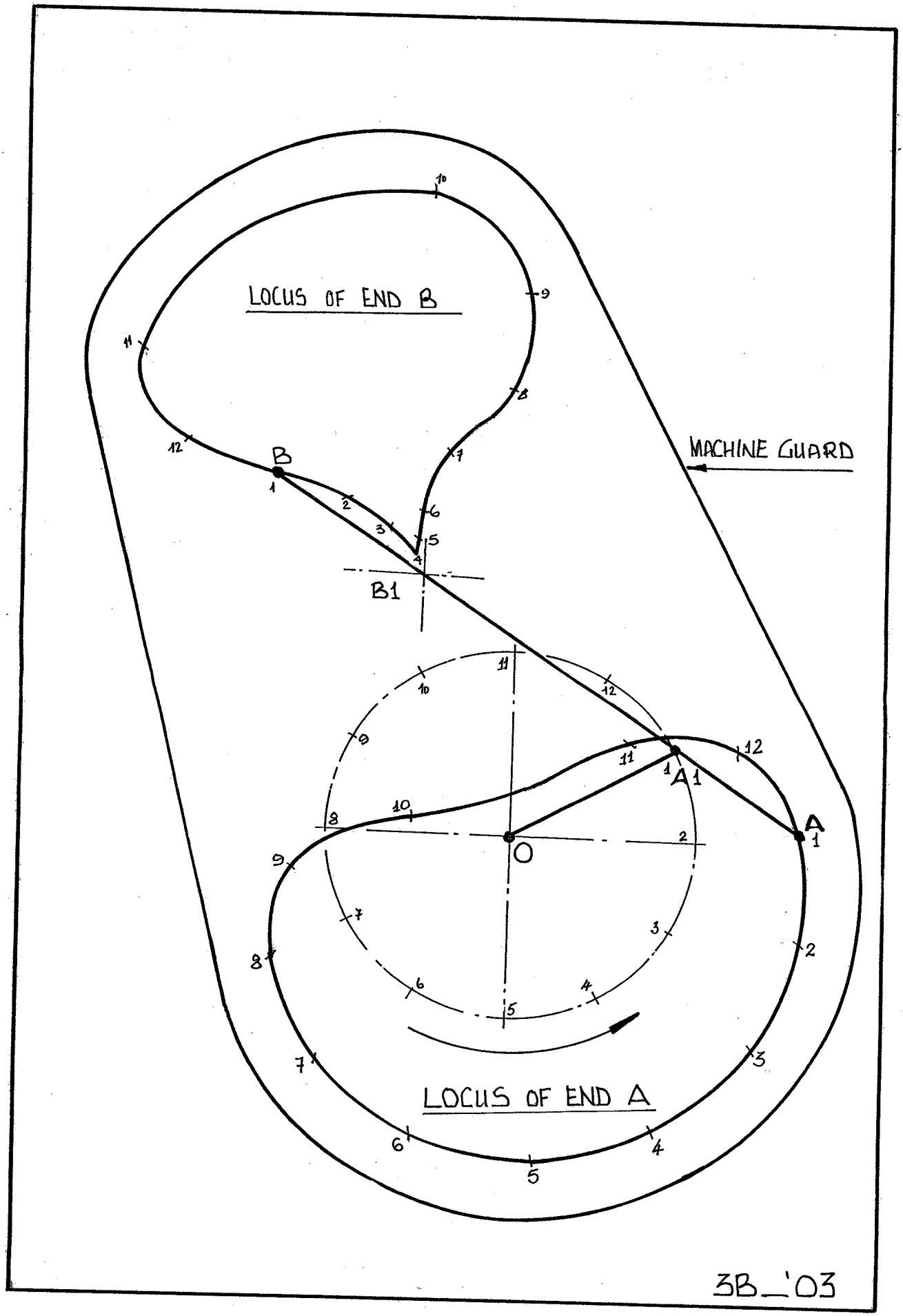
(b) PROJECTED ELEVATION



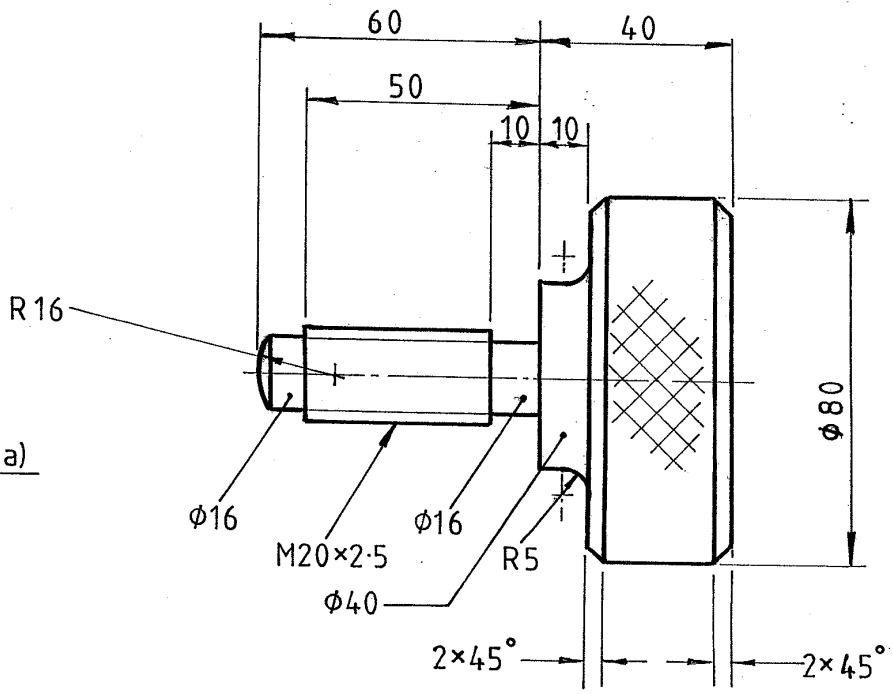
(a) GIVEN VIEWS

2_'03


U.V.
DWELL
S.H.M.
1 Sec.
D.O.R.
0
0.25s
0.5s.
1s.
Displacement Diagram
0.25secs
Cam Profile
0.5secs.
3A_'03


LOCUS OF END B
MACHINE GUARD
B
B1
A
A1
O
LOCUS OF END A
3B_'03

4A_'03



4 (a)

4B_03

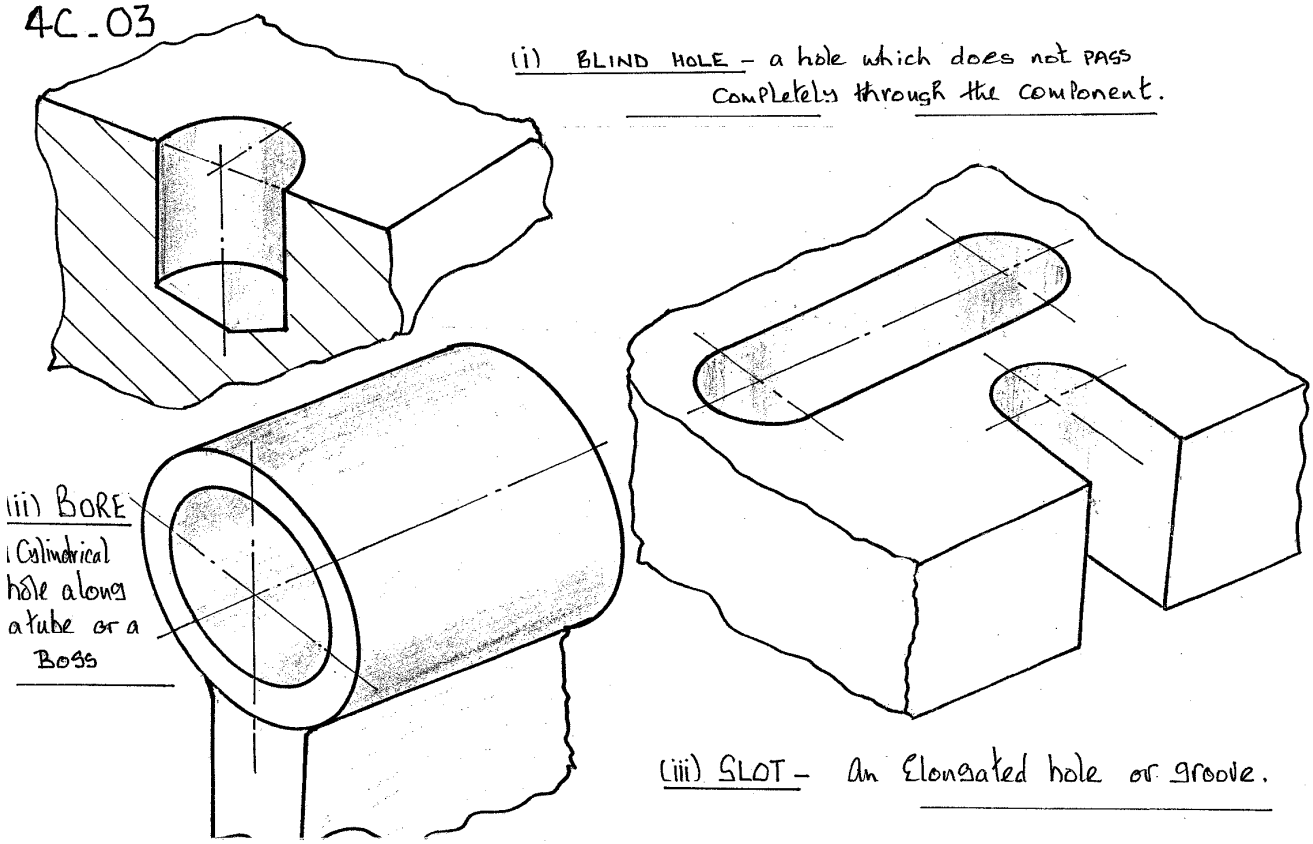
(i) MECHANISM ____ Hand DRILL

(ii) 1 Handle 2 Body/Housing 3 Shaft 4 Chuck

(iii) Gearing arrangement ___ Bevel gears

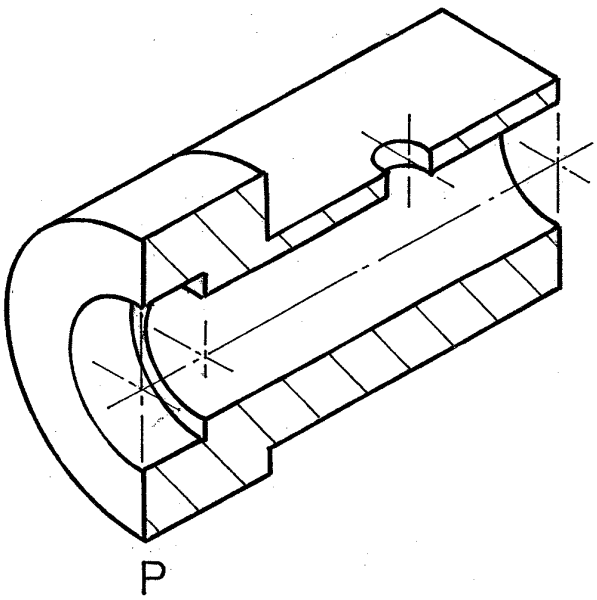
4C_03

(i) BLIND HOLE – a hole which does not PASS Completely through the component.



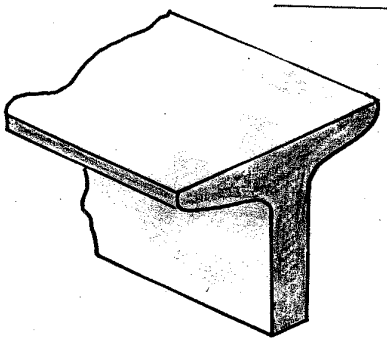
(iii) BORE
Cylindrical hole along a tube or a Boss

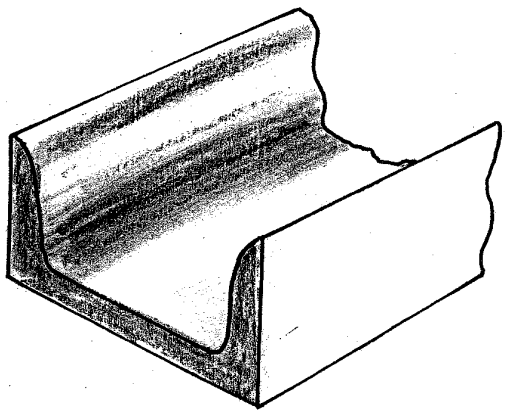
(iii) SLOT – An Elongated hole or groove.



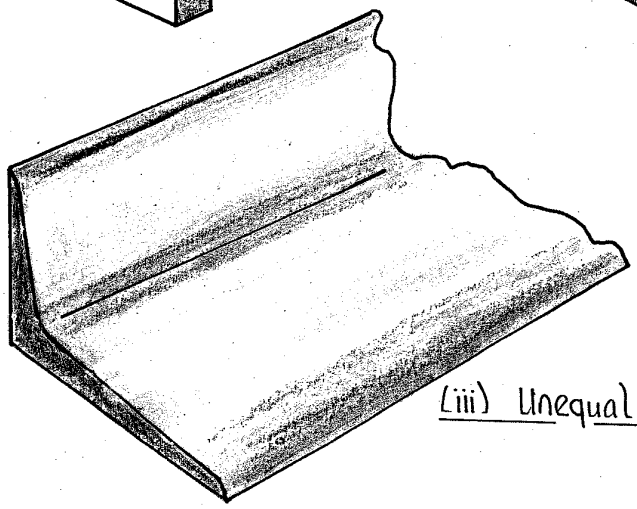
5A_'03

(i) Tee section





(ii) Channel section



(iii) Unequal leg angle

5B_'03

5/03 SECTION B

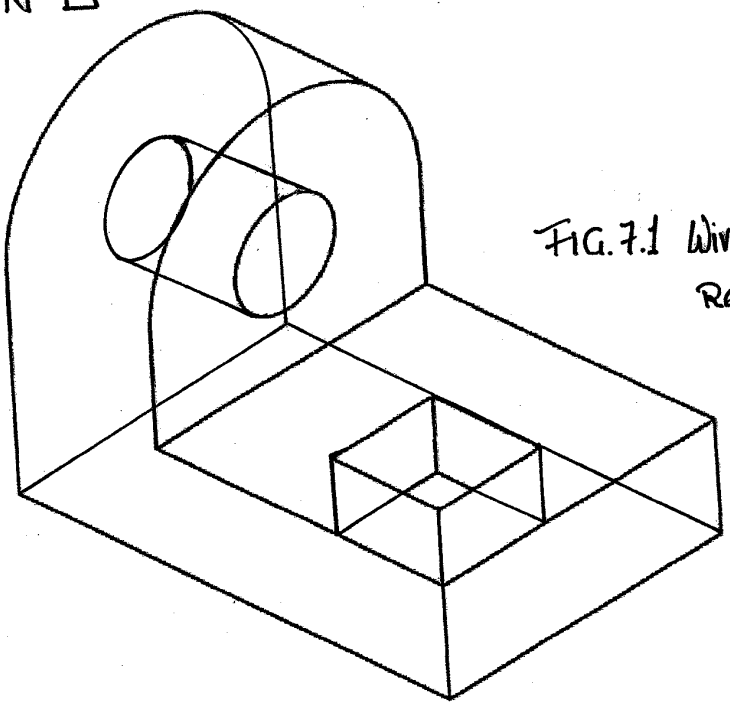
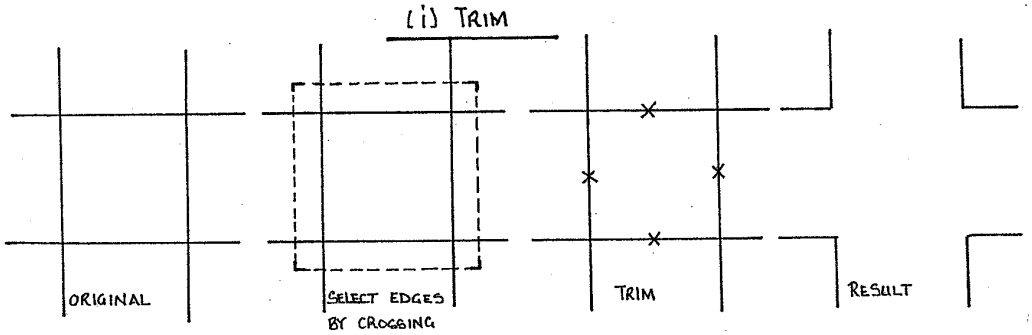
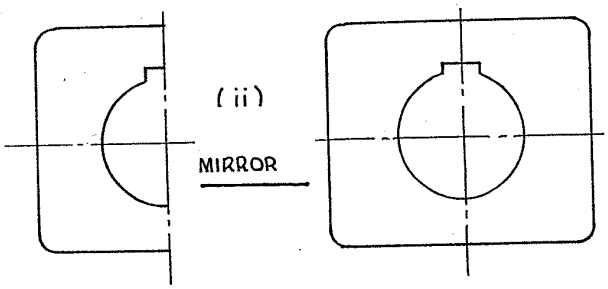
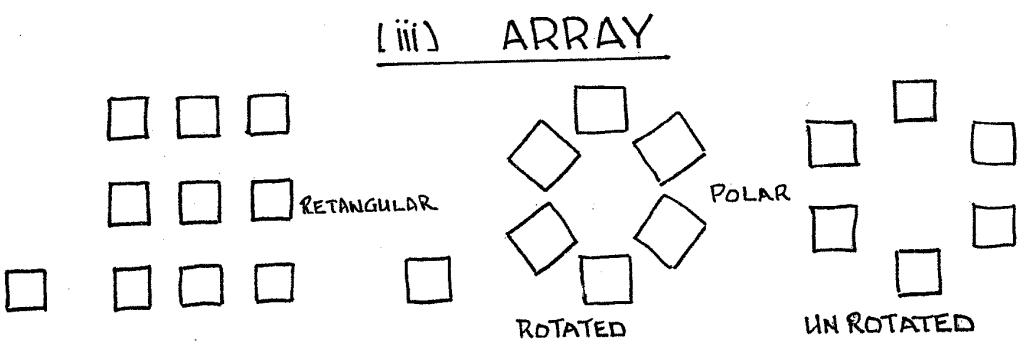


FIG. 7.1 Wire frame Representation







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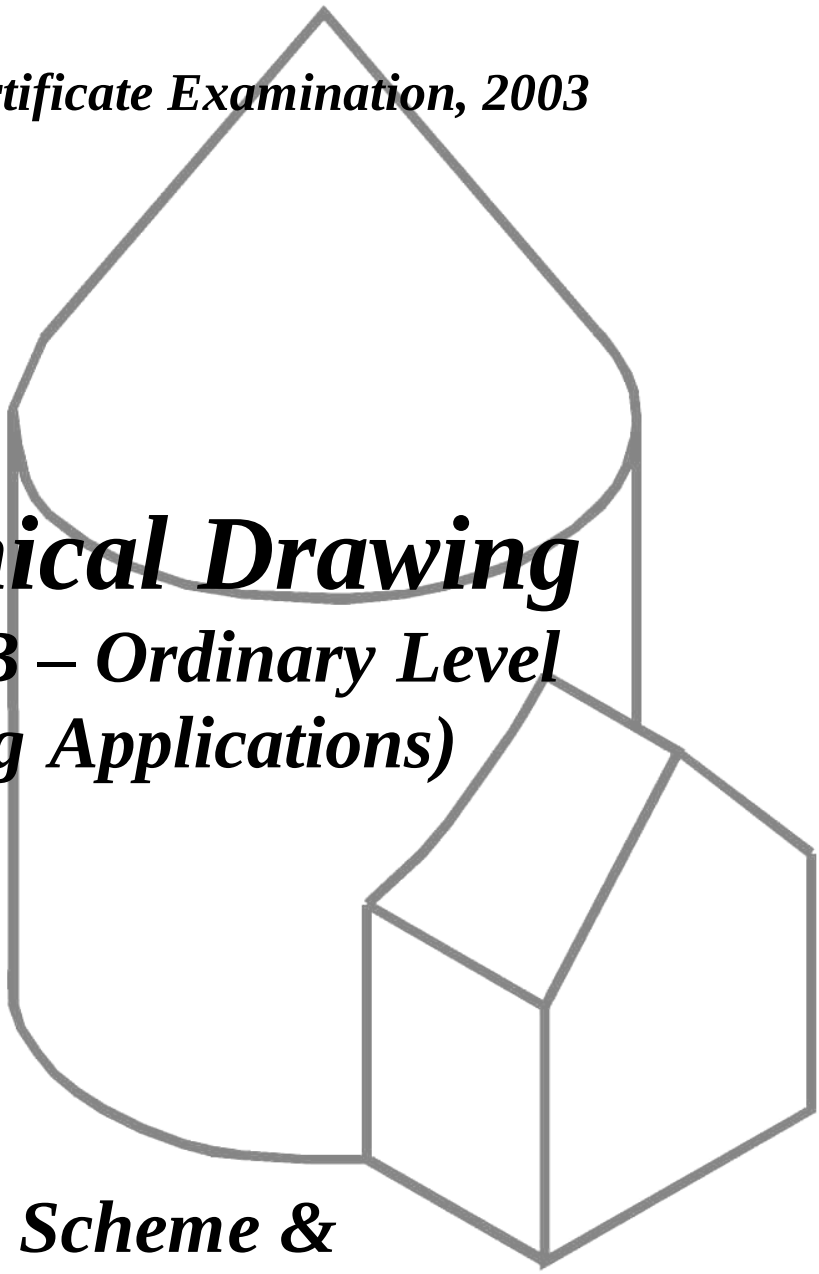
State Examinations Commission

Leaving Certificate Examination, 2003



Technical Drawing

Paper 2B – Ordinary Level (Building Applications)

Marking Scheme & Sample Solutions

	QUESTION 1	
		Marks
(1)	Draw the given views (2,2)	4
(2)	Position spectator, P.P., V. P.1 and V.P.2 in plan (1,2,2)	5
(3)	Ground line, horizon line and VP's in elevation (1,1,1,1)	4
(4)	Projection lines from S to plan	2
(5)	Perspective of base lines of block A (2,2)	4
(6)	Apply H1 for block A	1
(7)	Completion of block A (1,1,2)	4
(8)	Establish base of block B (height 2 or alternative)	2
(9)	Apply heights 3, 4, 6, and 5 (1,1,1,2)	5
(10)	Perspective of vertical lines on block B (5X1)	5
(11)	Perspective of horizontal lines to V.P.1 on block B (5X1)	5
(12)	Perspective of sloping lines on block B and complete (4,1)	5
(13)	Presentation	4
		Total 50

QUESTION 2

Point	Construction	Marks
(1)	Draw roof perimeter in plan	4
(2)	Draw surfaces D and E in elevation	4
(3)	Draw edge view of surface B and C, measure height, draw in elevation (2, 2, 1}	5
(4)	Construction to determine line of intersection between B and E in plan	2
(5)	Construction to determine line of intersection between C and D in plan	3
(6)	Construction to determine surface A in plan (5x1)	5
(7)	Complete plan and elevation (1,1)	2
(8)	**Development of surface E** Determine true widths (2,2)	4
(9)	Draw the development of surface E (5X1)	5
(10)	**Dihedral angle between surfaces A and C** True length of line of intersection (4x1)	4
(11)	Construction to determine dihedral angle (6x1)	6
(12)	Dihedral angle between surfaces A and C	2
(13)	Presentation	4
		Total 50

QUESTION 3		
Point	**Construction**	**Marks**
(1)	Draw the given plan and elevation	6
(2)	Lines at appropriate angles in plan and elevation (2,2)	4
(3)	Determine shadow cast by block A (4X2)	8
(4)	Determine shadow cast by vertical and horizontal edges of block B on the ground (3x2)	6
(5)	Shadow cast by curved surface of block B (2X3)	6
(6)	Shadow cast by sloping line of block B on the ground	3
(7)	Draw curve and identify shadow cast on the ground (1,2)	3
(8)	Shadow cast by vertical edge of block B on block A	2
(9)	Shadow cast by sloping lines of block B on block A (2X3)	6
(10)	Identify shadow cast on block A	2
(11)	Presentation	4
		Total 50

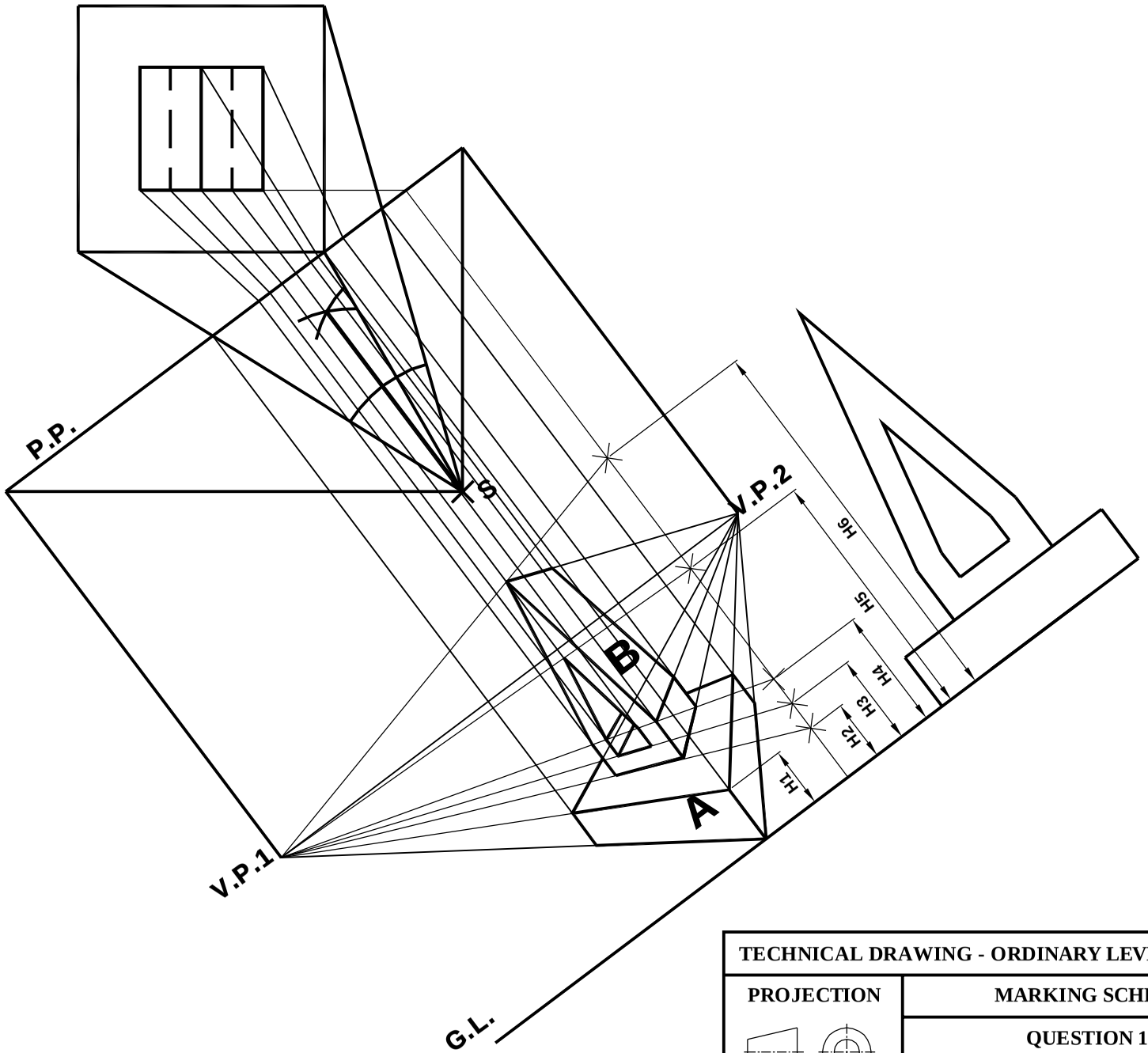
QUESTION 4		
Point	**Construction**	**Marks**
(1)	**<u>Plan and elevation</u>** Draw the given plan, including the elements (5,4)	9
(2)	Project outline elevation	8
(3)	Draw the elements in elevation (3,2,3)	8
(4)	**<u>Curvature</u>** Draw line CF in plan, project at right angles, XY line (1,2,2)	5
(5)	Method of determining heights for curvature	7
(6)	Measure heights in auxiliary elevation	5
(7)	Draw the curvature	4
(8)	Presentation	4
		Total 50

QUESTION 5		
Point	**Construction**	**Marks**
(1)	Draw the given plan	5
(2)	Grid on circle in plan and outline in isometric (4,6)	10
(3)	Draw circle in isometric	6
(4)	Complete cylinder in isometric (3,1,1)	5
(5)	Determine apex and draw cone in isometric (2,2)	4
(6)	Outline of entrance in isometric (1,2)	3
(7)	Vertical lines of entrance in isometric	3
(8)	Sloping lines of entrance in isometric	2
(9)	Curve of intersection in isometric (5x1)	5
(10)	Complete isometric	3
(11)	Presentation	4
		Total 50

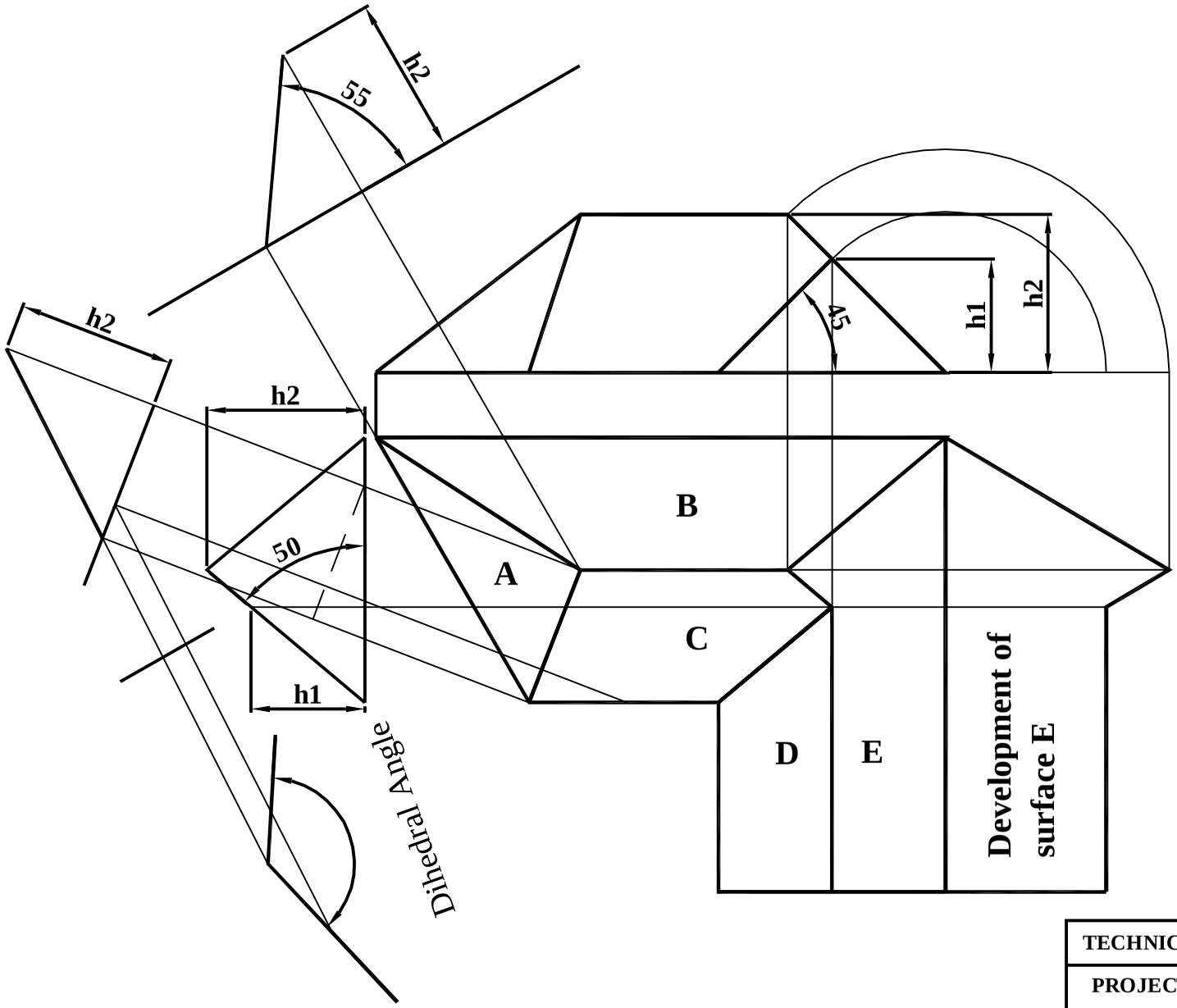
Question6		
Point	**Construction**	**Marks**
(1)	Outline plan, elevation and end elevation (3x2)	6
(2)	Construction for parabola in end elevation (2,2,2)	6
(3)	Draw parabolic curve in end elevation	5
(4)	Complete end elevation	2
(5)	C1, C2, C3 and C4 in plan and draw arcs (3,1) (4x1)	8
(6)	Establish C5 in elevation and draw curve (2,1)	3
(7)	Construction to determine curve of intersection in plan	4
(8)	Draw curve of intersection in plan	2
(9)	Construction to determine curves of intersection in elevation (3,3)	6
(10)	Draw curves in elevation (2,2)	4
(11)	Presentation	4
		Total 50

QUESTION 7

Point	Construction	Marks
(1)	Measure heights, draw horizontal section lines	6
(2)	Projections from intersections of line DE with contours to profile	6
(3)	Draw outline of profile	8
(4)	**Dip and Strike** Join points A, B and C in plan	3
(5)	Draw triangle in elevation	6
(6)	Horizontal line in elevation	2
(7)	Strike in plan	4
(8)	New XY line, viewing direction for dip	2
(9)	Determine dip	2
(10)	**Visibility** Join points G and H in plan	1
(11)	Set up XY line, projections of intersections from GH	2
(12)	Measure heights, draw profile	2
(13)	Draw object and determine visibility	2
(14)	Presentation	4
		Total 50



TECHNICAL DRAWING - ORDINARY LEVEL - PAPER 2B	
PROJECTION	MARKING SCHEME
	QUESTION 1
	SCALE: N/A / DATE: JUNE 2003



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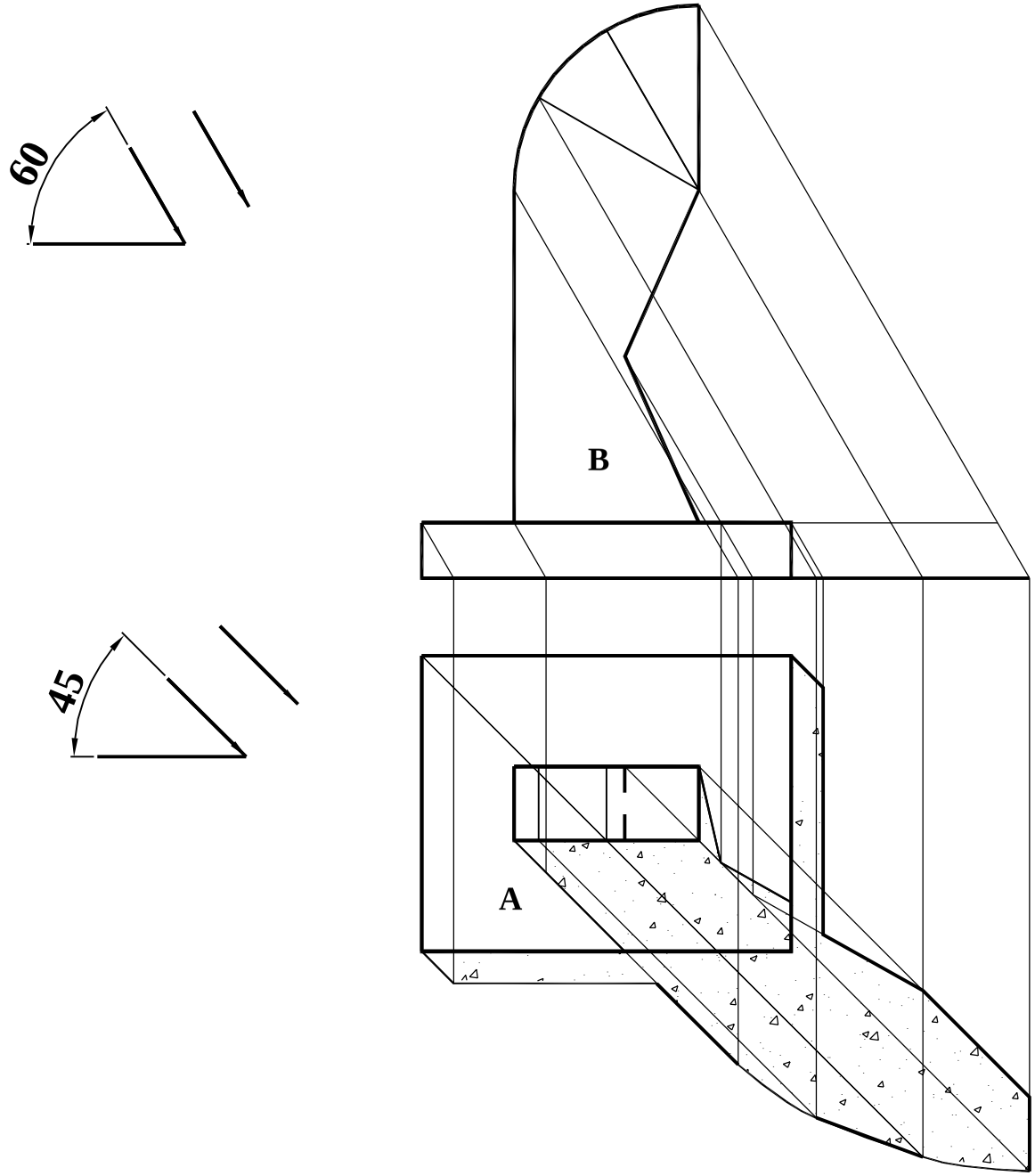
PROJECTION	MARKING SCHEME
	QUESTION 2
	SCALE: N/A / DATE: JUNE 2003



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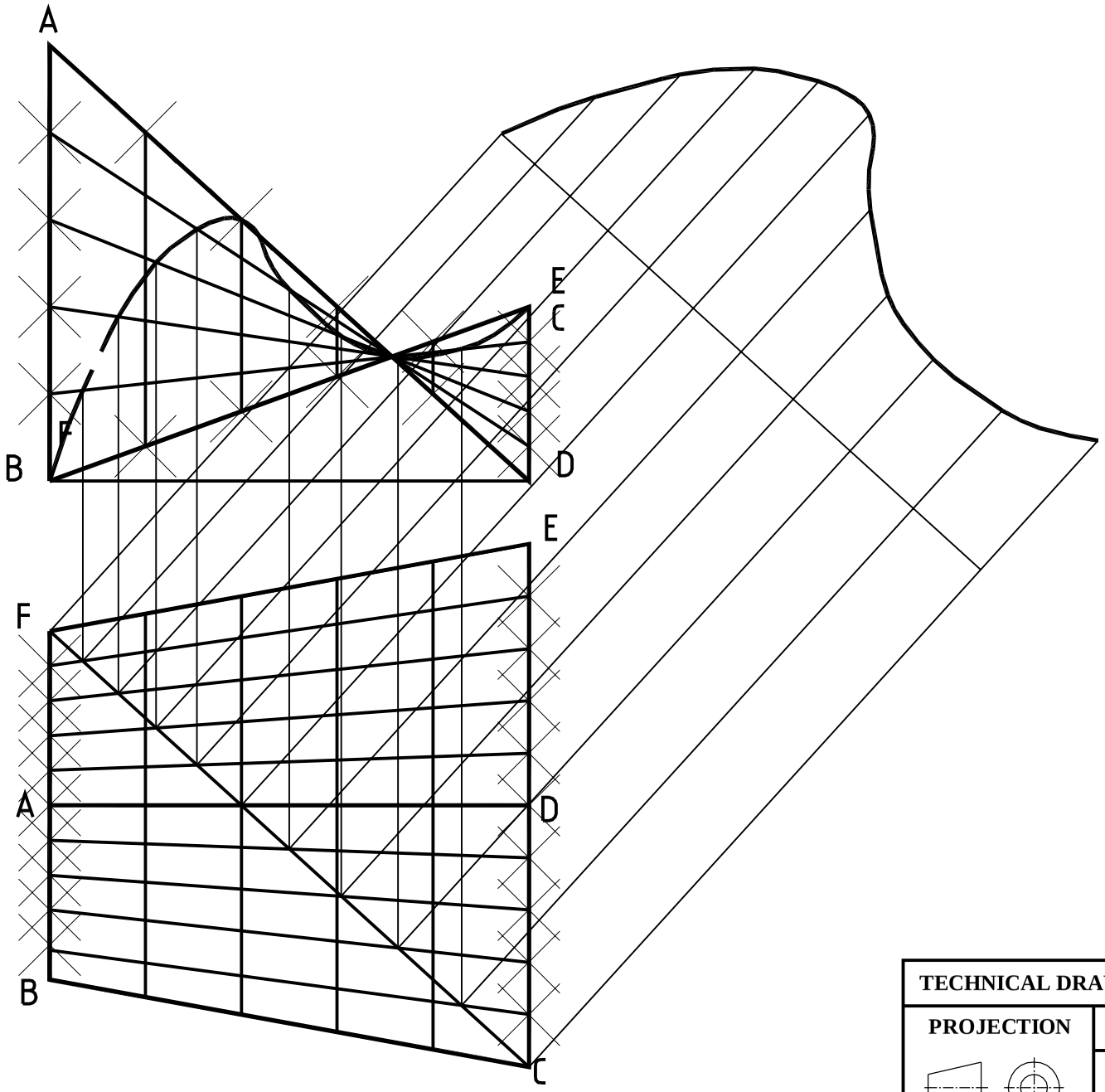
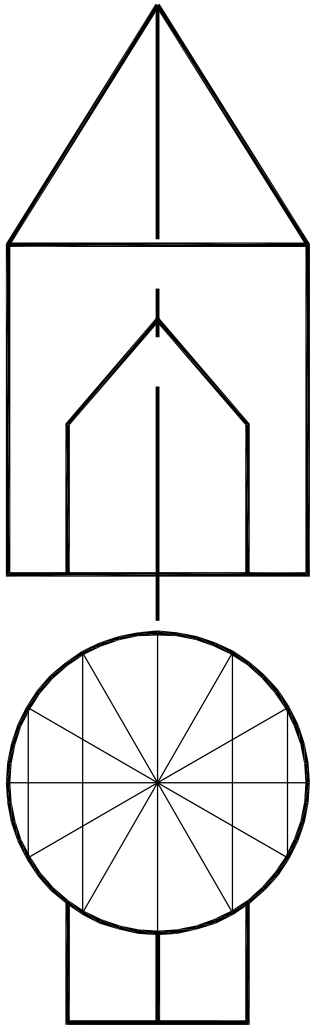
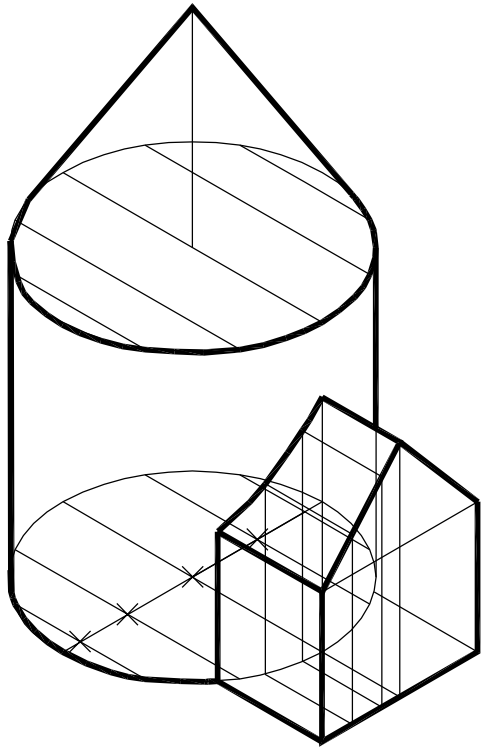
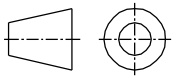
PROJECTION	MARKING SCHEME	
	QUESTION 3	
	SCALE: N/A	DATE: JUNE 2003



TECHNICAL DRAWING - ORDINARY LEVEL - PAPER 2B	
PROJECTION	MARKING SCHEME
	QUESTION 4
	SCALE: N/A / DATE: JUNE 2003





TECHNICAL DRAWING - ORDINARY LEVEL - PAPER 2B	
PROJECTION 	MARKING SCHEME
	QUESTION 5
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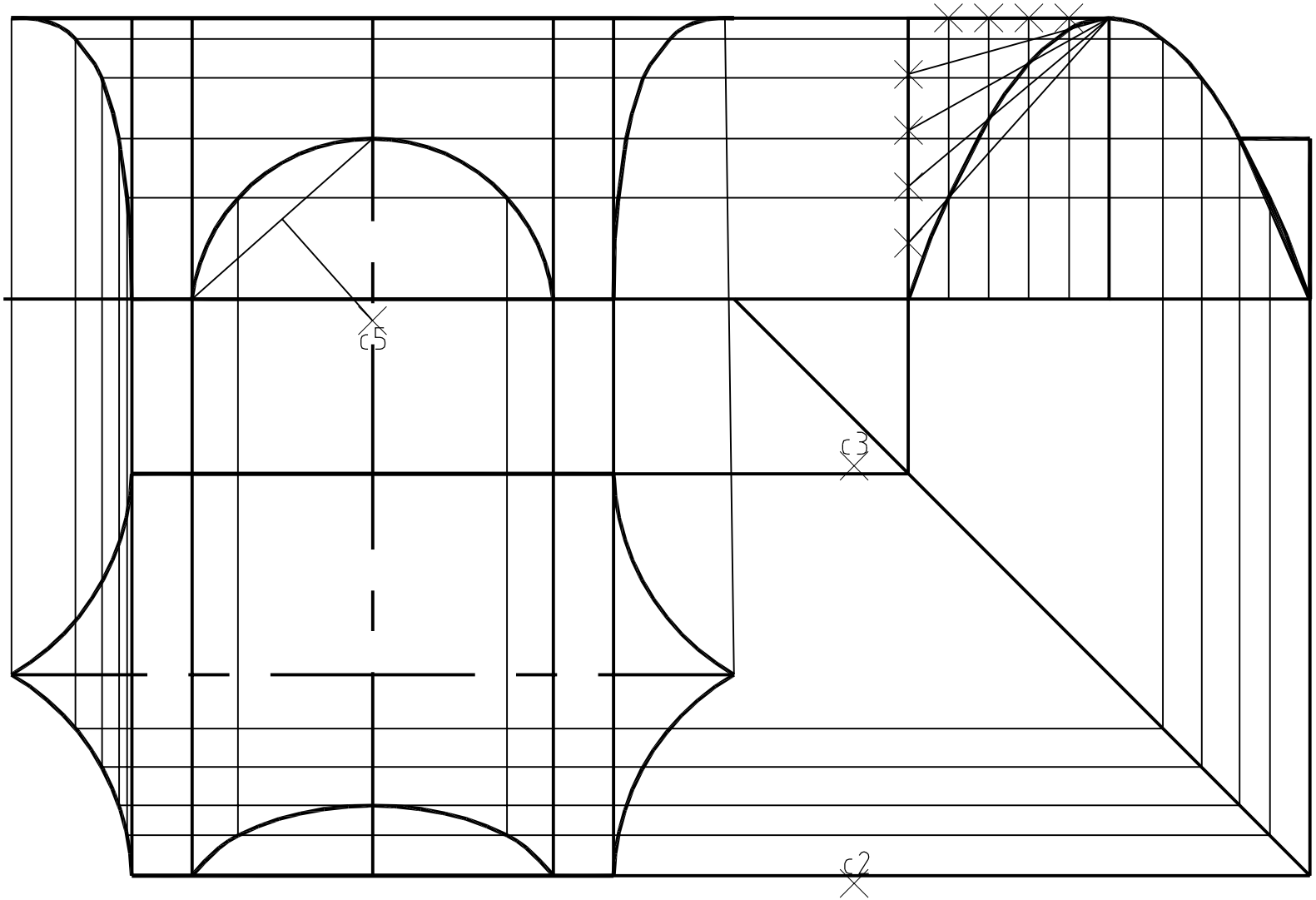

TECHNICAL DRAWING - ORDINARY LEVEL - PAPER 2B	
PROJECTION	MARKING SCHEME
	QUESTION 6
	SCALE: N/A / DATE: JUNE 2003

QUESTION 7