	UNIT-V			
9	Draw the following views of the object shown pictorially in Fig. i) Front view ii) Top view iii) Side view from the right	L3	CO4	14 M

	OR			
10	Draw the following views of the block shown pictorially in Fig. i) Front view ii) Top view iii) Side view from the right.	L3	CO4	14 M

Code: 23ES1203

I B.Tech - II Semester – Regular / Supplementary Examinations
MAY 2025

ENGINEERING GRAPHICS
(COMPUTER SCIENCE & ENGINEERING)

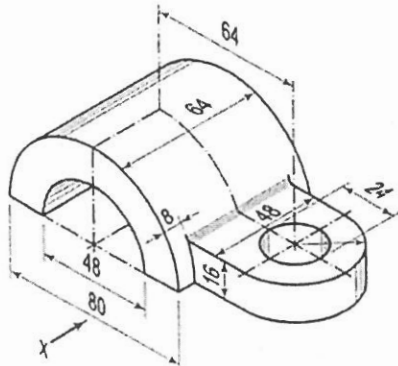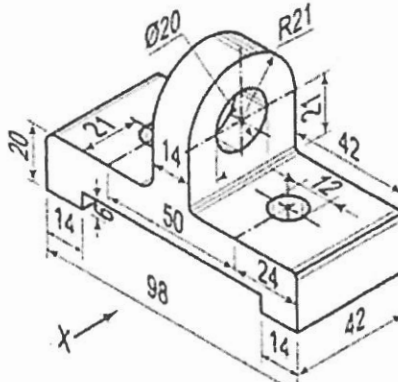Duration: 3 hours   Max. Marks: 70

Note: 1. This paper contains questions from 5 units of Syllabus. Each unit carries 14 marks and have an internal choice of Questions.
2. All parts of Question must be answered in one place.
BL – Blooms Level   CO – Course Outcome

		BL	CO	Max. Marks
	UNIT-I			
1	The area of a field is 50,000 sq m. The length and the breadth of the field, on the map is 10 cm and 8 cm respectively. Construct a diagonal scale which can read up to one metre. Mark the length of 235 metre on the scale. What is the R.F. of the scale?	L3	CO1	14 M
	OR			
2	A circle of 60 mm diameter rolls along a straight line without slipping. Draw the curve traced out by a point P on the circumference, for one complete revolution of the circle. Name the curve. Draw a tangent to the curve at a point on it 45 mm from the line.	L3	CO1	14 M

UNIT-II

3	a)	Two points A and B are in the H.P. The point A is 40 mm in front of the V.P., while B is behind the V.P. The distance between their projectors is 70 mm and the line joining their top views makes an angle of 45° with xy. Find the distance of the point B from the V.P.	L3	CO2	7 M
	b)	A point 40 mm above xy line is the plan-view of two points P and Q. The elevation of P is 50 mm above the H.P. while that of the point Q is 25 mm below the H.P. Draw the projections of the points and state their position with reference to the principal planes and the quadrant in which they lie.	L3	CO2	7 M

OR

4	A line AB, 80 mm long is inclined at 30° to the H.P. Its end A is 15 mm above the H.P. and 25 mm in front of the V.P. Its front view measures 65 mm. Draw the top view of AB and determine its inclination with the V.P.	L3	CO2	14 M

UNIT-III

5	Draw the projections of a regular hexagon of 25 mm side, having one of its sides in the H.P. and inclined at 60° to the V.P., and its surface making an angle of 45° with the H.P.	L3	CO2	14 M

OR

6	A hexagonal pyramid, base 30 mm side and axis 55 mm long, has an edge of its base on the ground. Its axis is inclined at 30° to the ground and parallel to the V.P. Draw its projections.	L3	CO2	14 M

UNIT-IV

7	A cube of 40 mm long edges is resting on the H.P. on one of its faces with a vertical face inclined at 30° to the V.P. It is cut by a section plane parallel to the V.P. and 12 mm away from the axis and further away from the V.P. Draw its sectional front view and the top view	L3	CO2	14 M

OR

8	Draw the development of the lateral surface of the part P of the cylinder, the front view of which is shown in Fig.	L3	CO3	14 M

I B.Tech II Semester Regular Examinations-May-2025
Engineering Graphics (CSE)
Scheme of Evaluation

UNIT-I

1. Construction of Scale – **8 Marks**
   Length of Scale (LOS)–**2 Marks**
   RF of the scale- **2marks**
   Indicating Points–**2 Marks**

2. Construction of Cycloid–**10 Marks**
   Tangent and Normal–**2 Marks**
   Dimensioning–**2 Marks**

UNIT-II

3a) Drawing the projections–**2 Marks**
   Finding the distance of the point B from the V.P–**3 Marks**
   Dimensioning–**2 Marks**

3b) Drawing the projections–2 Marks
   Stating their position with reference to the principal planes and the quadrants in which
   they lie –3 Marks
   Dimensioning–2 Marks

4. Drawing the line with true inclination with HP–**4 Marks**
   Drawing the line with true inclination with VP–**4 Marks**
   Drawing the final projections–**4 Marks**
   Dimensioning–**2 Marks**

UNIT-III

5. Drawing initial positions–**4 Marks**
   Drawing first stage projections–**4 Marks**
   Drawing second stage projections–**4 Marks**
   Dimensioning–**2 Marks**

6. Drawing first stage projections–**6 Marks**
   Drawing second stage projections–**6 Marks**
   Dimensioning–**2 Marks**

UNIT-IV

7. Drawing sectional front view–**6 Marks**
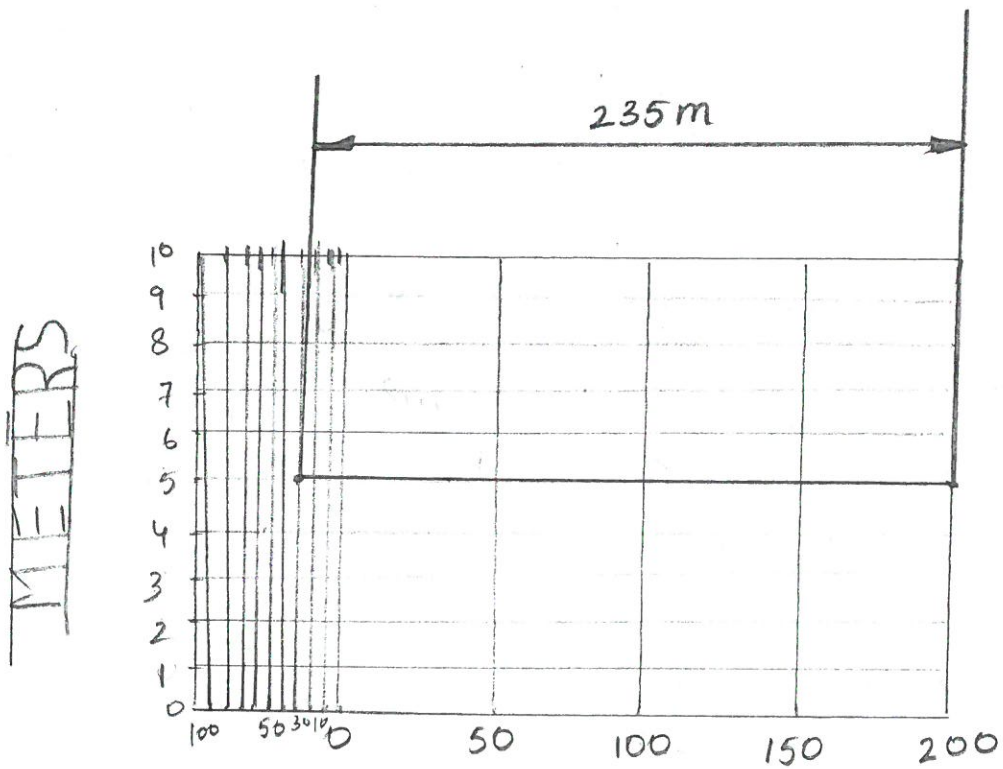   Drawing sectional top view–**6 Marks**
   Dimensioning–**2 Marks**

8. Drawing initial positions–**4 Marks**
   Development–**8 Marks**
   Dimensioning–**2 Marks**

UNIT-V

9. Front View–**5 Marks**
   Top View–**4 Marks**
   Side View–**3 Marks**
   Dimensioning–**2 Marks**

10. Front View–**5 Marks**
    Top View–**4 Marks**
    Side View–**3 Marks**
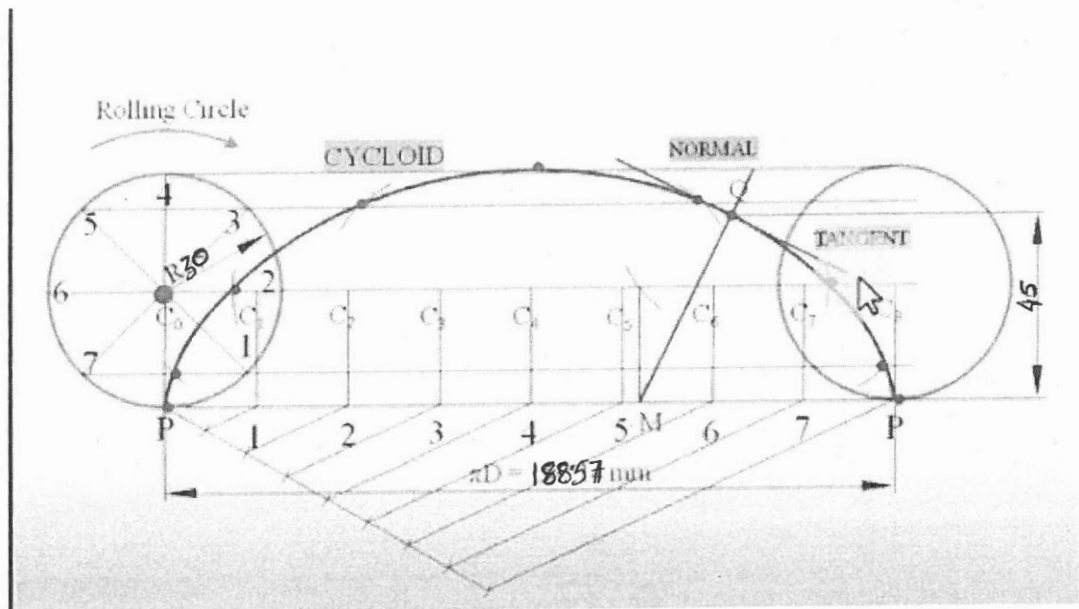   Dimensioning–**2 Marks**

UNIT-1

① Diagonal Scale:

Given, area of the field = 50,000 sq.m.

(e) 50,000 m² = 80 cm² (Length × Breadth)

$\qquad\qquad\downarrow\qquad\qquad\qquad\qquad\downarrow\qquad\qquad$ 10cm   8cm.

$\qquad$(Actual Area)$\qquad$(Drawing area)

$$\Rightarrow \quad 1m^2 = \frac{\cancel{80}}{\cancel{50000}} \underset{625}{} cm^2$$

$$1m^2 = \frac{1}{625} cm^2$$

$$R.F = \frac{\sqrt{\frac{1}{625} cm^2}}{\sqrt{1 m^2}}$$

$$= \frac{\frac{1}{25} cm}{1 m} \Rightarrow \boxed{\frac{1}{2500} = RF}$$

Length of Scale = R.F × max.distance to be measured.

$$= \frac{1}{2500} \times 250m \text{ (assumed)} \begin{bmatrix} \text{Since we} \\ \text{have to} \\ \text{show 235m} \\ \text{on the scale} \end{bmatrix}$$

$$= \frac{1}{2500} \times 250 \times 1000 \, mm$$

$$= 100 \, mm$$

$$= 10 \, cm$$

$$\therefore \boxed{\begin{array}{c} \text{Length of Scale} = 10cm. \\ R.F = \frac{1}{2500} \end{array}}$$

235m

METERS

10
9
8
7
6
5
4
3
2
1
0

100 50 30 10 0   50   100   150   200

METERS

METERS

② Cycloid
d = 60 mm
πD = 188.57 .

2. A circle of 60 mm diameter rolls the longest straight line without slipping. Draw the curve traced out by a point P on the circumference for one complete revolution of the circle name the curve draw a tangent to the curve at a point on it 45 mm from the line.   [14M]

③

3a) Given,   a' in H.P
            b' in H.P
            a = 40 ↓
      Distance b/w projectos = 70mm.
            φ = 45°
            b = ? (find the distance from V.P).

bb' = 30mm

40

45°

70

X ——— a' ——— b' ——— Y (with a, b marked)

3b)

P'

P, q

50

40

25

X ——— q' ——— Y
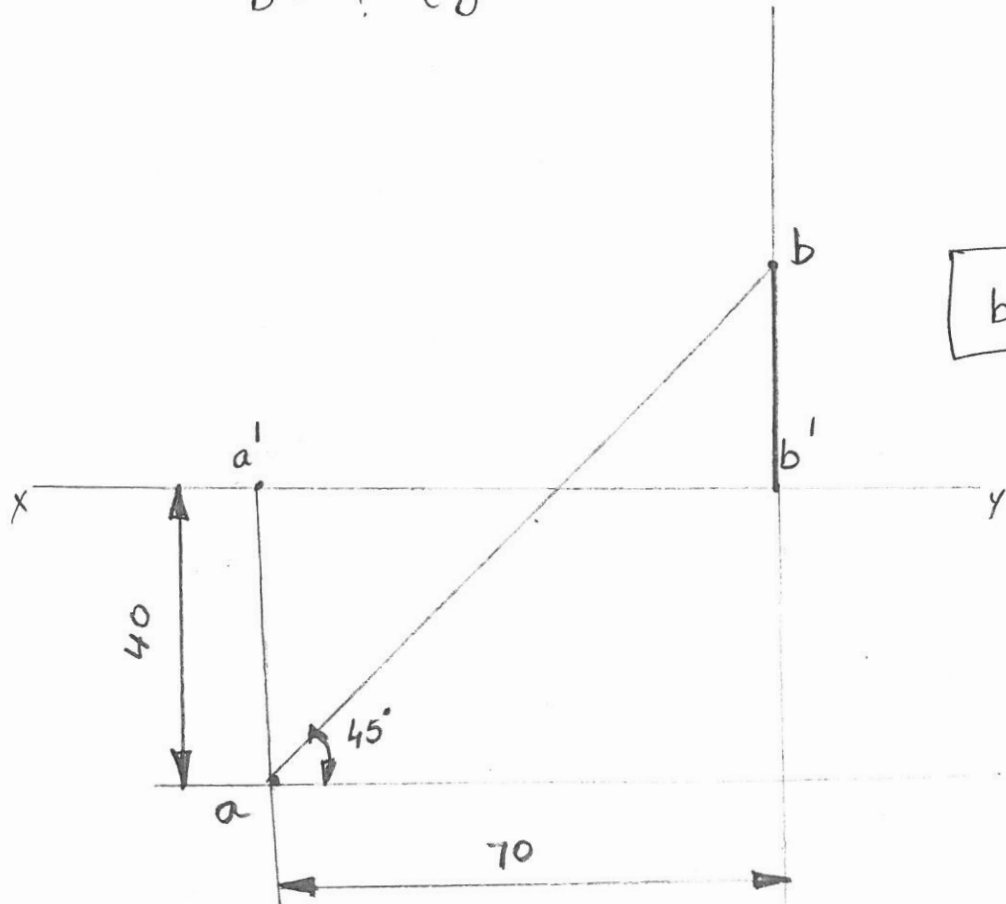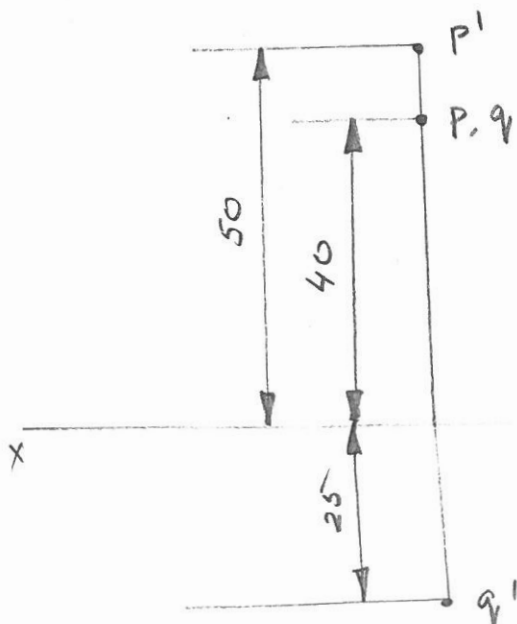
* P, 50mm above H.P &
  40mm behind V.P
  [IInd Quadeant]

* Q, 25mm below H.P &
  40mm behind V.P
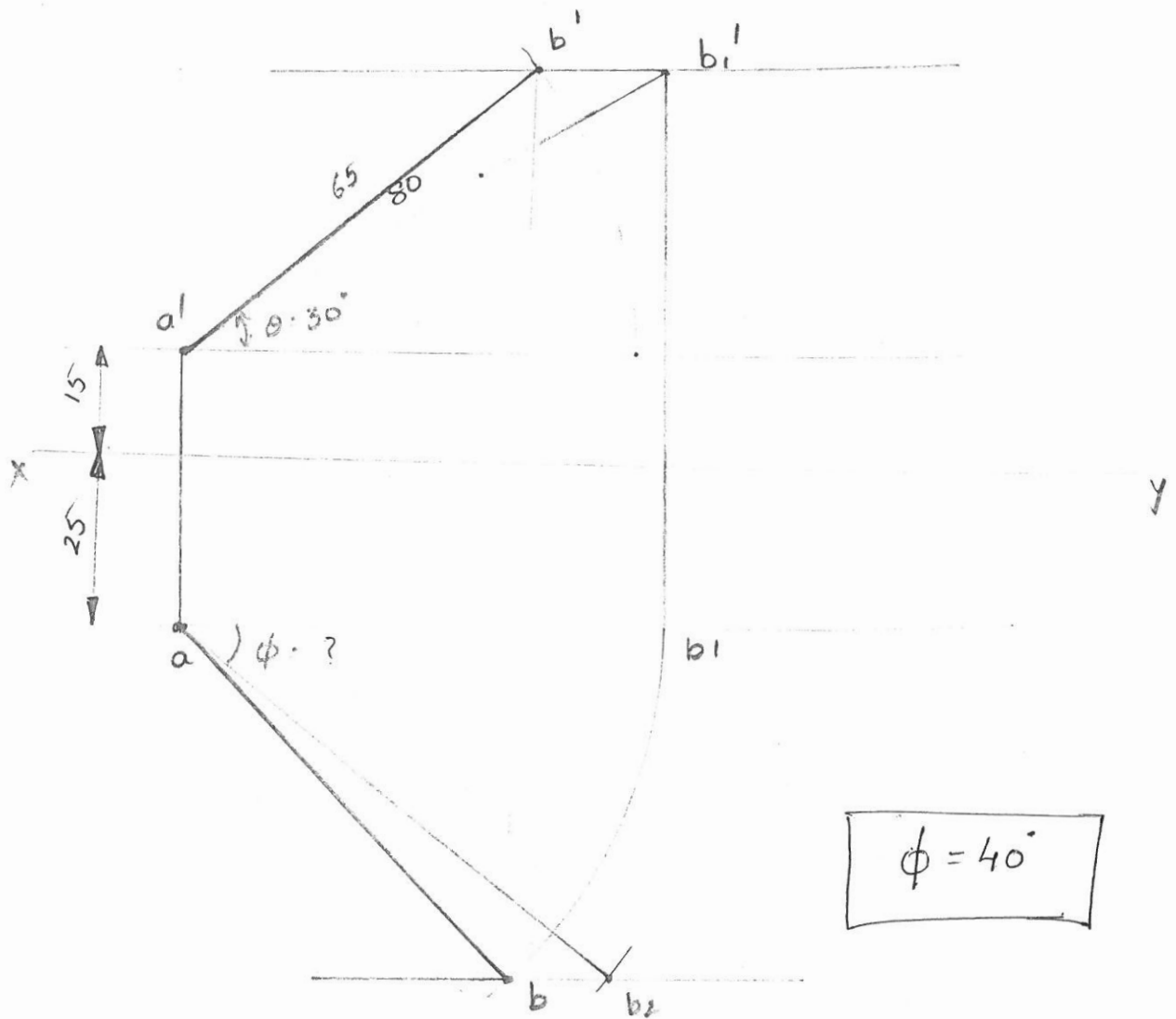 [IIIrd Quadeant]

④

Given data,
$$T.L = 80mm$$
$$\theta = 30°$$
$$a' = 15 \uparrow$$
$$a = 25 \downarrow$$
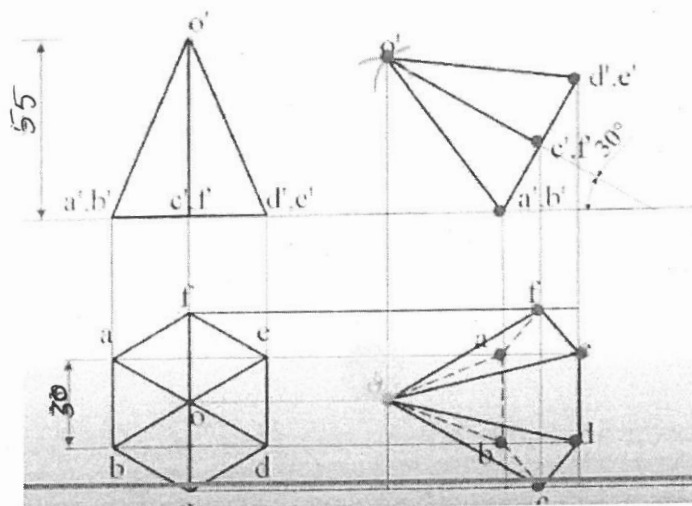
Front view length $(a'b') = 65mm$.
$$\phi = ?$$

$\phi = 40°$

5. Draw the projections of a regular hexagon of 25 mm side, having one of its sides in the H.P. and inclined at 60° to the V.P., and its surface making an angle of 45° with the H.P. [14M]
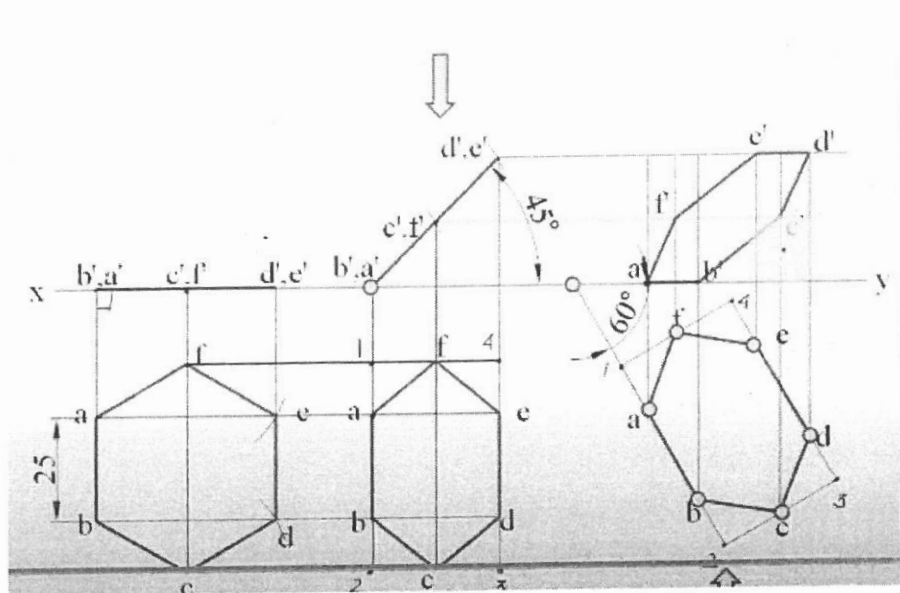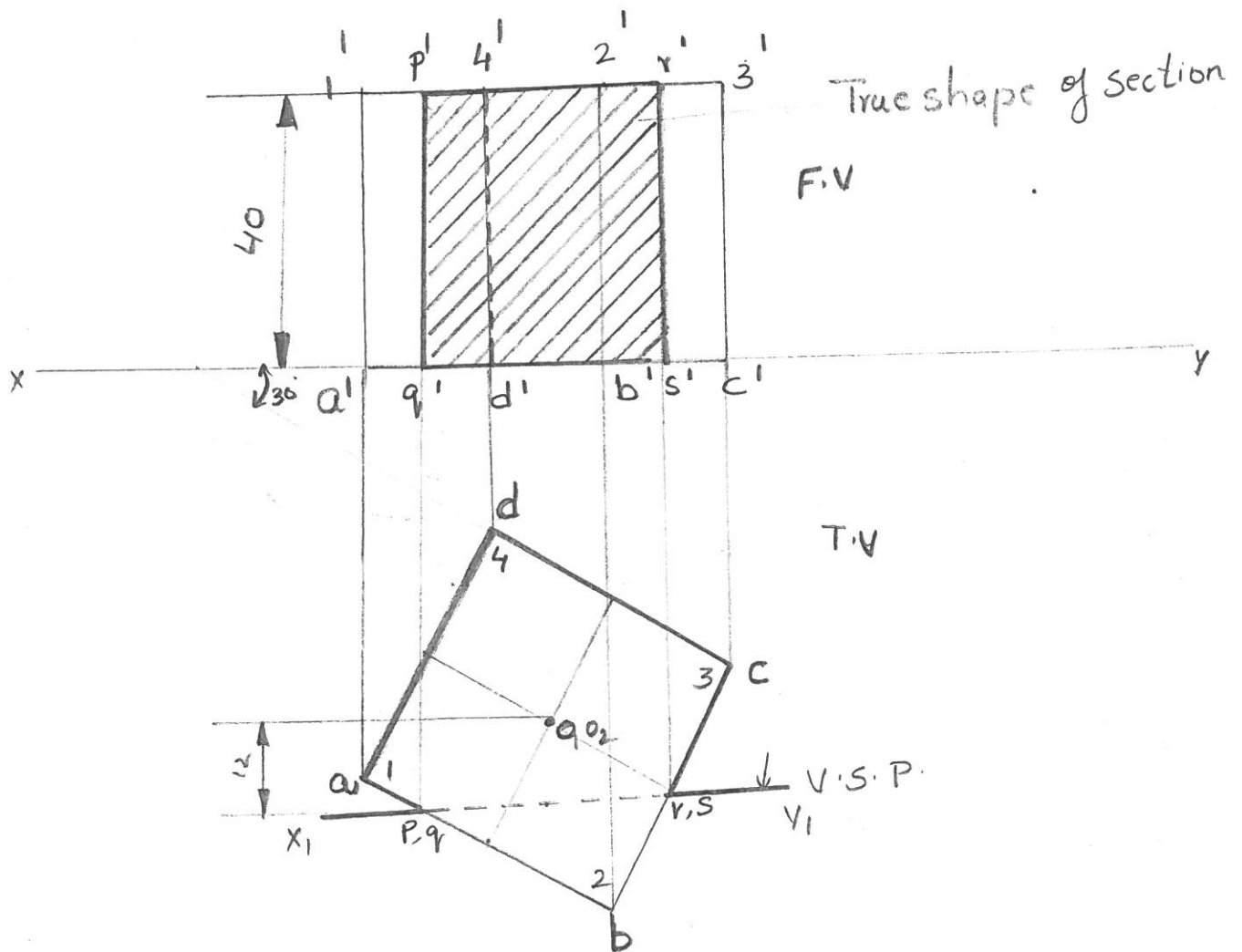

6. A hexagonal pyramid, base 30 mm side and axis 55 mm long, has an edge of its base on the ground. Its axis is inclined at 30° to the ground and parallel to the V.P. Draw its projections. [14M]
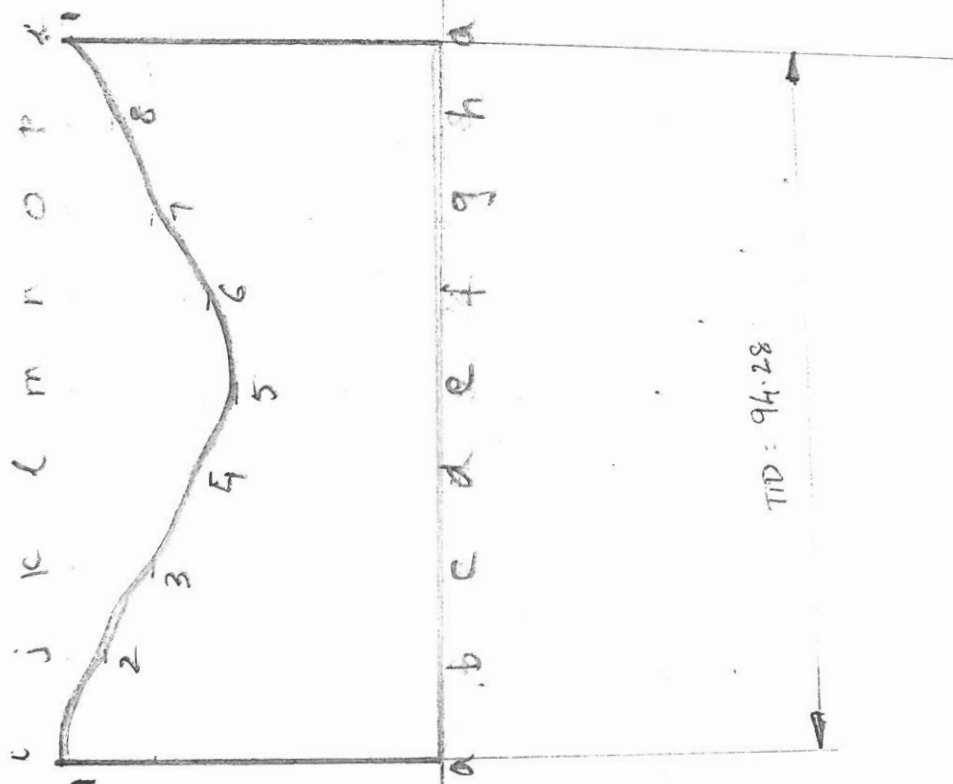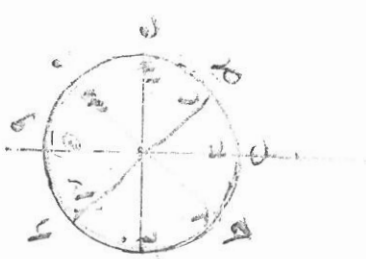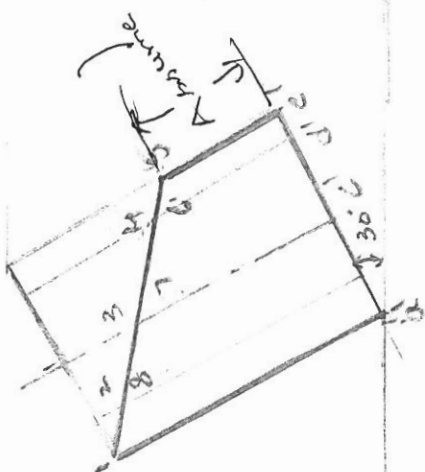
UNIT-IV

⑦ A cube of 40mm long edges is resting on the H.P on one of its faces with a vertical face inclined at 30° to the V.P. It is cut by a section plane parallel to the V.P and 12mm away from the axis and further away from the V.P. Draw its sectional front view and the top view.
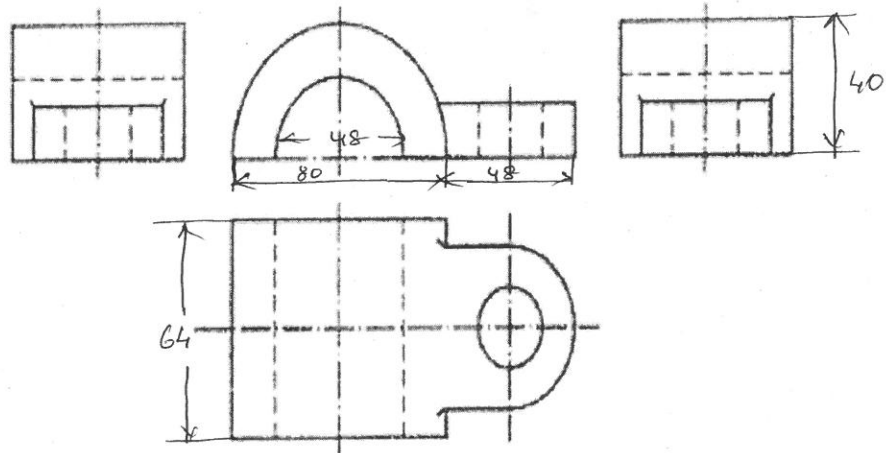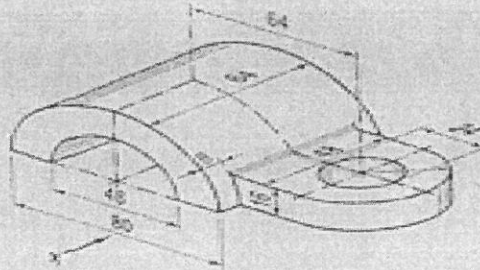

True shape of section

F.V

T.V

(8)

9. Draw the following views of the object shown pictorially in Fig.

i) Front view   ii) Top view

iii) Side view from the right

10 Draw the following views of the block shown pictorially in Fig.
    i) Front view   ii) Top view
    iii) Side view from the right.

R.S.V

x_1

F.V

y_1