

Code No: **R231206**

**R23**

**SET - 1**

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM**

**I B. Tech II Semester Supplementary Examinations Dec-2025/ Jan -2026**

**ENGINEERING GRAPHICS**

**(Common to CSE, IT, CSE(DS), CSE(AI), CSE(CS), CSE(AI&ML), CSE(AI&DS), AI&DS, AI&ML)**

Time: 3 hours

Max. Marks: 70

Answer any **FIVE** Questions **ONE** Question from **Each unit**

All Questions Carry Equal Marks

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**UNIT-I**

1. Construct a hypo-cycloid, with rolling circle 50 diameter and directing circle 175 diameter. [14M]

(OR)

2. Draw the involute of a pentagon of side 30. Draw a tangent and normal to the curve at a distance of 90 from the centre of pentagon. [14M]

**UNIT-II**

3. a) A point A is 20 above HP and in the first quadrant. Its shortest distance from the reference line xy is 40. Draw the projections of the point and determine its distance from VP [7M]

- b) A line AB is on HP and its end A is 20 in front of VP. The line makes an angle of  $45^\circ$  with VP and its front view is 60 long. Draw the projections of the line and determine the true length [7M]

(OR)

4. Draw the projections of a rhombus having diagonals 120 and 50 long; the smaller diagonal being parallel to both the principal planes, while the other is inclined at  $30^\circ$  to HP [14M]

**UNIT-III**

5. A pentagonal pyramid, having a 30 mm edge of base and a 70 mm long axis, has an edge of its base on the HP. The axis is inclined at  $60^\circ$  to the HP and parallel to the VP. Draw its projections [14M]

(OR)

6. A cone having a 50 mm diameter and a 70 mm long axis, has a point of its base circle in the VP, such that the axis is inclined at  $45^\circ$  to the VP and parallel to the HP. Draw its projections [14M]

**UNIT-IV**

7. A square pyramid, base 50 mm side and axis 75 mm long, is resting on the H.P. on one of its triangular faces, the top view of the axis making an angle of  $30^\circ$  with the V.P. It is cut by a horizontal section plane, the V.T. of which intersects the axis at a point 6 mm from the base. Draw the front view, sectional top view and the development of the sectioned pyramid. [14M]

(OR)

8. A cylinder base 50 mm diameter, axis 60 mm long is resting with its base on H.P. it is cut by a section plane but by V.P and inclined at  $45^\circ$  to the H.P and intersecting the axis at a point 15 mm from the top of the axis. Draw its development. [14M]

# **UNIT-V**

9. Draw the Front view, Top view and Side view of the given object shown in Figure.1. [14M]

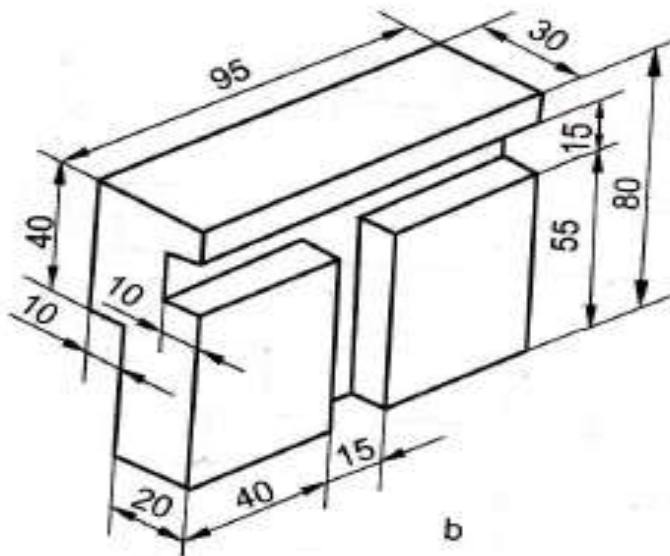


Figure:1

(OR)

10. Draw the isometric view from the given orthographic projections of the object shown in Figure.2. [14M]

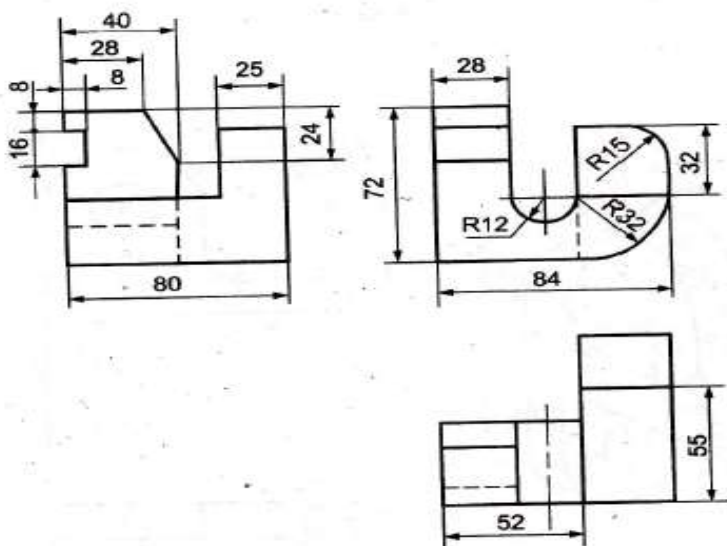


Figure:2

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