

**B.TECH DEGREE EXAMINATION**

**First and Second Semester**

(Common to all branches)

ENGINEERING GRAPHICS

(Regular/ Supplementary)

Time: Three Hours

Maximum: 100Marks

*Answer one full question from each module*

*All questions carry equal marks*

*Retain all construction lines*

*Drawing sheets to be supplied*

Module 1

- 1 A garland hung on a statue has a span of 12cm and a dip of 8cm at the centre. Draw the shape of the garland assuming it to be parabolic. Also draw a tangent and normal at any point on this curve.

*Or*

- 2 The shortest radius vector in a logarithmic spiral is 35mm. The lengths of adjacent radius vectors enclosing 30 degrees are in the ratio 8:7. Construct the curve for 1.5 convolutions. Draw a tangent and normal to this curve at any point on it.

Module 2

- 3 The point A of a line AB is in HP and 60mm in front of VP. The point B is in VP and 40mm above HP. The distance between projectors is 70mm. Draw the projections of the line, find the true length, inclinations and locate its traces.

*Or*

- 4 A pentagonal lamina ABCDE of 40mm side is resting upon its edge AE on HP, so that the surface is inclined at 45 degrees to HP. The line joining the vertex C to the mid point F of the edge AE is inclined at 30 degrees to VP. Draw the projections of the lamina keeping the vertex C nearer to VP

Module 3

- 5 Draw the projections of a cube of 35 mm edge resting on the HP on one of its corners with a solid diagonal perpendicular to VP.

*Or*

- 6 A pentagonal pyramid side of base 30 mm and axis 90 mm long is resting on its base with one of its base edges parallel, nearer and 15 mm away from the VP. It is cut by a plane perpendicular to HP, inclined at 40 degrees to VP and 190 mm away from the axis. Draw the views and also obtain the true shape of the section.

Module 4

- 7 A cone base 60 mm diameter and axis 75mm long is resting on the ground on its base. It is cut by a plane perpendicular to VP and inclined at 30 degrees to HP intersecting the axis at a point 30 mm above the base. Draw the development of the lateral surface of the remaining portion of the cone. An insect moves from a point on the base edge to the diametrically opposite point on the same edge through a shortest path. Show the path in both views.

*Or*

- 8 A hemisphere of diameter 80 mm is resting on the ground with its flat surface facing upwards. A square pyramid having side of base 40 mm and axis 60 mm is resting on its base centrally on top of the hemisphere. Draw the isometric view of the combination of the solids.

Module 5

- 9 A vertical square prism of 50 mm side of base has its rectangular faces equally inclined to the VP. It is completely penetrated by another square prism 30 mm side of base with its axis parallel to both the planes. The axes of both the prisms intersect at 90 degrees. Draw the projections of the solid showing lines of intersection. Assume length of both prisms as 100 mm.

*Or*

- 10 Draw the perspective view of a square prism of base side 20 mm and height 35 mm resting on an end on the ground with a rectangular face parallel to the picture plane. The axis of the prism is 25 mm behind the picture plane and 25 mm to the right of the eye. The eye is 50 mm in front of the PP and 50 mm above the ground.