

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2009.

First Semester

Civil Engineering

GE 2111 — ENGINEERING GRAPHICS

(Common to all branches of B.E./B.Tech)

(Regulation 2008)

Time : Three hours Maximum : 100 marks

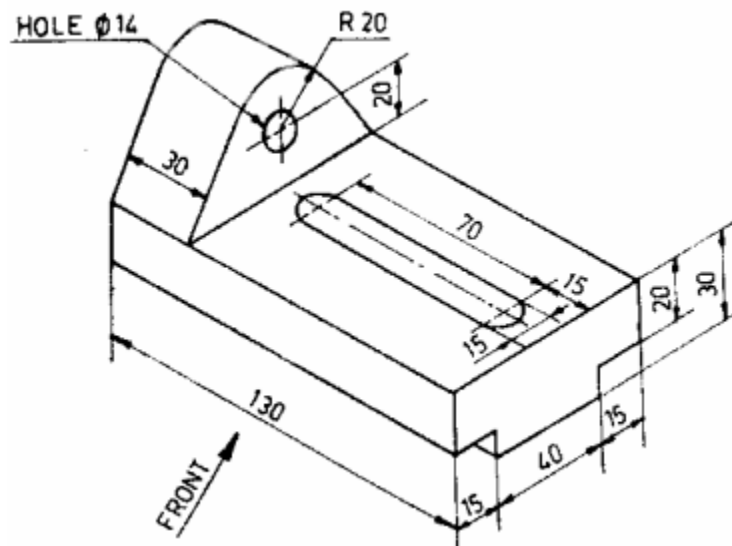
Answer ALL questions.

(5 × 20 = 100)

1. (a) Draw the involute of a circle of diameter 40 mm and draw the tangent and the normal to the involute at any point on the curve. (20)

Or

(b) Draw the front, top and right side views of the object shown in below. (20)



2. (a) A line PF, 65 mm has its end P, 15 mm above the HP and 15 mm in front of the VP. It is inclined at 55° to the HP and 35° to the VP. Draw its projections. (20)

Or

(b) A pentagon of side 30 mm rests on the ground on one of its corners with the sides containing the corner being equally inclined to the ground. The side opposite to the corner on which it rests is inclined at 30° to the VP and is parallel to the HP. The surface of the pentagon makes 50° with the ground. Draw the top and front views of the pentagon. (20)

3. (a) A tetrahedron of edges 30 mm rests on one of its edges on the VP. That edge is normal to the HP. One of the faces containing the resting edge is inclined at 30° to the VP. Draw the projections of the tetrahedron. (20)

Or

(b) A cone of base diameter 60 mm and altitude 80 mm rests on the HP with its axis inclined at 30° to the HP and parallel to the VP. Draw its front and top views. (20)

4. (a) A cube of side 40 mm is placed and cut by a plane in such a way that the true shape of the section is a regular hexagon. Draw the front and top views of the cube and determine the inclination of the cutting plane with the HP. (20)

Or

(b) A cylinder of diameter 40 mm and height 50 mm is resting vertically on one of its ends on the HP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP. The plane meets the axis at a point 30 mm from the base. Draw the development of the lateral surface of the lower portion of the truncated cylinder. (20)

5. (a) A hexagonal prism of base side 20 mm and height 40 mm has a square hole of side 16 mm at the centre. The axes of the square and hexagon

coincide. One of the faces of the square hole is parallel to the face of the hexagon. Draw the isometric projection of the prism with hole to full scale. (20)

Or

(b) A regular hexagonal pyramid of base edge 20 mm and height 35 mm rests on its base on the ground plane with one of its base edges touching the picture plane. The station point is 30 mm above the ground plane and 40 mm in front of the PP. The central plane is 30 mm to the right of the axis. Draw the perspective projection of the pyramid. (20)