Reg. No. :

Question Paper Code : 25111

B.E./B.Tech. DEGREE EXAMINATION, DECEMBER/JANUARY 2019.

First Semester

Civil Engineering

GE 8152 — ENGINEERING GRAPHICS

(Common to All Branches)

(Regulations 2017)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

(5 × 20 = 100)

1. (a) Draw locus of a point on the periphery of a circle having diameter of 50 mm, which rolls on straight line path. Name the curve and draw a tangent and normal to the curve at any point Q on it.

Or

(b) Sketch by free hand the front view, the top view, and the right side view of the object shown in Figure 1. Assume proportional dimensions in mm.
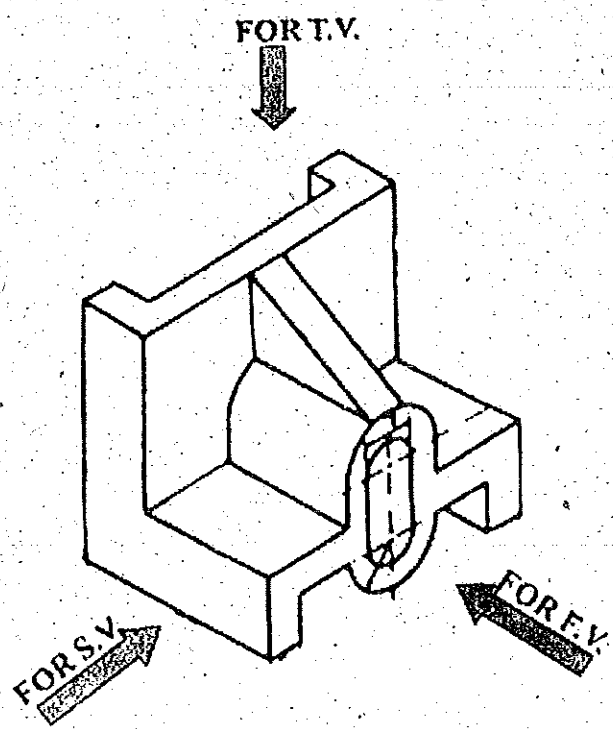

Figure 1

2. (a) A line a'b' is 50° inclined to xy and measures 55 mm long, while its top view is inclined at 60° to xy line. The end A of the line is 15 mm above HP and 20 mm in front of VP. Draw the projections of the line and find its true length and true inclinations with HP and VP. Also show its traces.

Or

(b) A rectangular lamina 40 × 70 mm size is standing on one of its corner with the sides equally inclined to HP. The surface of the lamina is inclined to VP at an angle of 30° to VP. The diagonal passing through the resting corner makes an angle of 55° with HP. Draw the projections of the rectangular lamina.

3. (a) A tetrahedron of 25 mm long edges is resting on one of its edges with a face containing that edge is perpendicular to HP and inclined at 30° to the V.P. Draw its projections.

Or

(b) A hexagonal pyramid having a base with a 30 mm side and an 80 mm long axis, is freely suspended from one of the corners of the base. Draw its projections when its axis is parallel to the V.P.

4. (a) A right circular cone of base diameter 60 mm and height 75 mm is resting on its base on the HP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP bisecting the axis of the cone. Draw the sectional top view and true shape of the section when the top half of the sectioned solid is removed.

Or

(b) A square prism of base edge 50 mm sides and axis 70 mm long s standing on its base with its faces equally inclined to the VP. It is cut by a section plane inclined at 45° to HP and passing through the intersection of the top surface and the face of the solid. Draw the development of the lateral surfaces of the lower portion of the truncated solid.

5. (a) An inverted frustum of a cone of base diameter 40 mm and top diameter 20 mm and 30 mm long axis is placed centrally over a cylinder of 70 mm diameter and 40 mm height. Draw the isometric projection of the combined solid.

Or

(b) A square pyramid of base edge 40 mm and altitude 50 mm, rests with its base on the ground plane such that all the edges of the base are equally inclined to the PP. One of the corners of the base is touching the PP. The station point is 60 mm in front of the PP, 80 mm above the ground plane and lies in a central plane which passes through the axis of the pyramid. Draw the perspective projection.

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