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Question Paper Code : 54010

B.E./B.Tech. DEGREE EXAMINATION, JANUARY 2018

First Semester

Civil Engineering

GE 8152 – ENGINEERING GRAPHICS

(Common to all Branches)

(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

Answer any one question from each unit.

First angle projection to be followed.

(5×20=100 Marks)

1. a) A circle of diameter 50 mm rolls along the inside of another circle of diameter 200 mm without slipping. Draw the path traced by a point on the smaller circle. Draw a tangent and a normal at a point on the curve.

OR

- b) Make free-hand sketches of front, top and left side views of the object shown in figure 1.

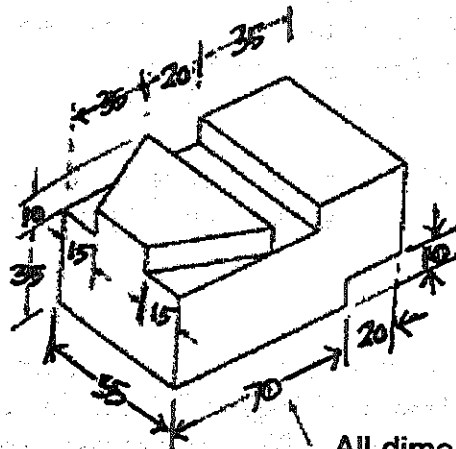


Figure -1

All dimensions are in mm



2. a) A straight line ST has its end S, 10 mm in front of the VP and nearer to it. The mid point m of the line is 50 mm in front of the VP and 40 mm above the HP. The front and top views measure 100 mm and 120 mm respectively. Draw the projections of the line. Also find its true length and true inclinations with the reference planes.

OR

- b) A hexagonal plate of side 20 mm rests on the HP on one of its sides inclined at 45° to the VP. The surface of the plate makes an angle of 30° with the HP. Draw the front and top views of the plate.
3. a) A hexagonal prism of base side 30 mm and axis length 60 mm rests on the HP on one of its base edges with its axis inclined at 60° to the HP and parallel to the VP. Draw its front and top views.

OR

- b) A pentagonal pyramid of base edge 25 mm and axis length 60 mm rest on one base side on HP such that the highest base corner is 20 mm above HP. Its axis is parallel to the VP. Draw its top and front views.
4. a) A right circular cone of base diameter 50 mm and axis length 60 mm rests on its base on the HP. It is cut by a plane perpendicular to the HP and inclined at 60° to the VP. The shortest distance between the cutting plane and the top view of the axis is 8 mm. Draw the top view, sectional front view and the true shape of the section.

OR

- b) A hexagonal pyramid of base of side 25 mm and altitude 50 mm is resting vertically on its base on the ground with two of the sides of the base perpendicular to the VP. It is cut by a plane perpendicular to the VP and inclined at 40° to the HP. The plane bisects the axis of the pyramid. Draw the development of the lateral surfaces of the pyramid.
5. a) Draw the isometric view of a frustum of a cone of height 30 mm, base diameter 34 mm, top diameter 20 mm when it is centrally placed over a square slab of side 50 mm and thickness 10 mm.

OR

- b) A rectangular Prism $40 \times 30 \times 15$ mm rest on the ground on one of its ends with one of the longest edges touching the PP and the shortest edges receding to the left at an angle of 40° to the PP. The nearest vertical edge is 15 mm to the left of the station point which is at a distance of 55 mm in front of the PP and 30 mm above the ground. Draw the perspective view of the prism.