Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code : 70645

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2021.

First Semester

Civil Engineering

GE 6152 – ENGINEERING GRAPHICS

(Common to all Branches)

(Regulations 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

(5 × 20 = 100)

1. (a)   Draw an ellipse when the eccentricity is 2/3 and the distance of the focus
          from the directrix is equal to 50 mm- Also draw a normal and tangent to
          a point on the ellipse which is at a distance of 70 mm from the directrix.

Or

   (b)   Draw the following views of the component shown in Fig. 1 by free hand
         sketching:

         (i)   Front view

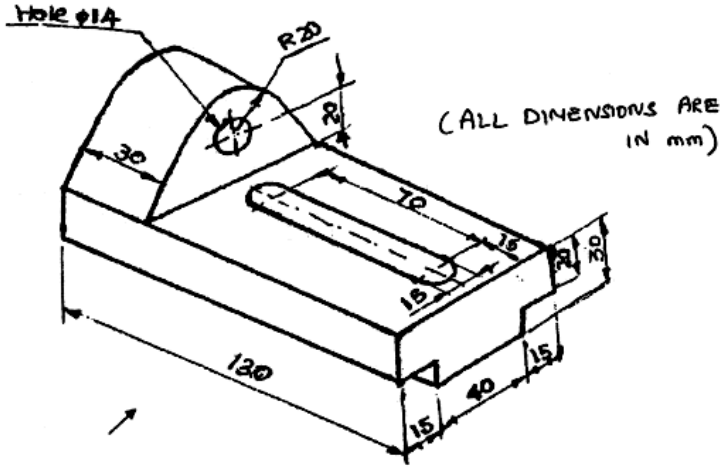   (ii)   Top view and

         (iii) Right side view

Fig.1

2. (a) The top view of a 80 mm long line AB measures 65 mm, while the length of its front view is 55 mm. Its one end A in the H.P. and 12 mm in front of the V.P. Draw the projections of AB and determine its inclinations with the H.P. and V.P. (20)

Or

(b) A pentagonal lamina of 30 mm side rests on the H.P. on one of its corners with its surface inclined at 30° to the H.P. Draw its projections when the side opposite to the resting corner is 45° inclined to V.P. (20)

3. (a) A hexagonal pyramid of base edge 40 mm and altitude 80 mm rests on one of its base edges on the HP with its axis inclined at 30° to the HP and parallel to the V.P. Draw its top and front views using change of position method.

Or

(b) Draw the projections of a pentagonal pyramid of base side 30 mm and altitude 60 mm when it rests on the ground on one of its base edges with the axis inclined at 30° to the ground and parallel to the VP. Use change of reference line method.

4. (a) A square pyramid of base side 25 mm and altitude 40 mm rests on the HP on its base with the base edges equally inclined to the VP. It is cut by a plane perpendicular to the VP and inclined at 30° to the HP meeting the axis at 21 mm above the HP, Draw the sectional top view and the true shape of the section.

Or

(b) A cylinder of diameter 40 mm and height 50 mm is resting vertically on one of its end 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.

5. (a) A pentagonal pyramid base 25 mm and height 65 mm stands with its base on HP and edge of the base parallel to VP and nearer to it. A section plane cuts the pyramid at 30° inclined to HP and passes through a point on the axis at a distance of 20 mm from the apex. Draw the isometric view of the truncated pyramid.

Or

(b) A hexagonal prism of base side 25 mm and height 50 mm lies with its base on the GP such that one of its rectangular faces is inclined at 30° to the PP and the vertical edge nearer to the PP is 15 mm behind it. The station point is 45 mm in front of the picture plane 70 mm above the GP and lies in the central plane which is 15mm to the left of the vertical edge nearer to the picture plane Draw the perspective projection of the prism.

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