Question Paper Code : 60036

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2022.

Second Semester

Civil Engineering

GE 3251 – ENGINEERING GRAPHICS

(Common to All Branches)

(Regulations 2021)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

(5 × 20 = 100)

1. (a) Draw an involute of a circle of 50 mm diameter. Also, draw a tangent and
         normal line at any point on the curve.   (20)

Or

    (b) Draw a hyperbola whose distance of focus from directrix is 60 mm. The
         eccentricity is 3/2. Also draw a tangent and normal at any point P on
         the curve.   (20)

2. (a) A line AB measuring 75 mm long has one of its ends 50 mm in front of
         VP and 15 mm above HP. The top view of the line is 50 mm long. Draw
         and measure the front view. The other end is 15 mm in front of VP and is
         above HP. Determine the true inclinations and traces.   (20)

Or

    (b) Pentagonal lamina of edges 25 mm is resting on HP with one of its
         corners such that the plane surface makes an angle of 60° with HP. The
         two of the edges containing the corner on which the lamina rests make
         equal inclinations with HP. When the edge opposite to the corner makes
         an angle of 45° with VP and nearer to the observer. Draw the top and
         front views of the plane lamina in this position.   (20)

3. (a) A hexagonal pyramid of base side 25 mm and axis height 55 mm is resting on HP with one of its base corners, such that the axis is inclined at 45° to HP and parallel to VP. Draw its projections. (20)

Or

(b) A square pyramid of base 30 mm and height 60 mm is suspended by means of a string from one of its base corners with its axis parallel to VP. Draw its projections. (20)

4. (a) A pentagonal prism of base side 30 mm and axis length 60 mm is resting on HP on its base with a side of base is parallel to VP. It is cut by a plane inclined at 35° to HP and meets the axis at a distance 35 mm from the base. Draw the development of the lower portion of the prism. (20)

Or

(b) A cylinder of base diameter 50 mm and axis length 60 mm is resting on HP on one of its generators with its axis perpendicular to VP. It is cut by a plane inclined to 35° to VP and perpendicular to HP and is bisecting the axis of the cylinder. Draw its top view, sectional front view and true shape of section. (20)

5. (a) Draw the isometric projection of a frustum of square pyramid of shorter base edge 30 mm and longer base edge 50 mm with the axial height of 60 mm, kept on H.P on its longer end and two of its base edges are parallel to V.P. (20)

Or

(b) A rectangular prism 25 mm* 30 mm side and 50 mm long is lying on the ground plane on one of its rectangular faces in such a way that one of its end face is parallel to and 10 mm behind the picture plane. The central plane is 60 mm away from the axis of the prism towards the left. Draw the perspective view of the prism if the station point is located 55 mm in front of the picture plane and 40 mm above ground plane. The prism is resting on the ground plane on its 50 mm* 25 mm rectangular face. (20)