## Question Paper Code : 57410

**B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016**

**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 Marks)

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



(ALL DIMENSIONS ARE IN mm)

Fig. 1

2. (a) The end P of a line PQ, 70 mm long is 15 mm above the HP and 20 mm in front of the VP. Q is 40 mm above the HP. The top view of the line is inclined at 45° to the VP. Draw the projections of the line and find its true inclination with the VP and the HP.

**OR**

(b) A Rectangular plate measuring 70 × 40 mm has one of its shorter edges in the VP inclined at 40° to the HP. Draw its top view if its front view is a square of side 40 mm. Draw its projections and also find the true inclination of the plate with the VP.

3. (a) A pentagonal pyramid of base side 30 mm and axis length 60 mm is resting on HP on one of its base corner such that the slant edge containing the resting corner is perpendicular to HP and parallel to VP. Draw its projections.

**OR**

(b) Draw the projections of a cylinder of diameter 50 mm and axis length 70 mm when it is lying on the ground with its axis inclined at 45° to the VP and parallel to the ground.

4. (a) A cone of base diameter 40 mm and axis length 50 mm is resting on HP on its base with its axis perpendicular to HP. It is cut by a plane inclined at 45° to HP and perpendicular to VP and bisecting the axis of the cone. Draw the sectional plan, elevation and true shape of the section.

**OR**

(b) A hexagonal prism of base side 30 mm and axis length 65 mm is resting on HP on its base with two of its rectangular face is parallel to VP. A circular hole of diameter 40 mm is drilled completely through the prism such that the axis of the hole is perpendicular to VP and bisects the axis of the prism. Draw the development of the lateral surface of the prism showing the shape of the holes formed on it.

5.  (a)  A cylinder of 50 mm diameter and 60 mm height stands on HP. A section plane perpendicular to VP inclined at 55° to HP cuts the cylinder and passing through a point on the axis at a height of 45 mm above the base. Draw the isometric projection of the truncated portion of the cylinder such that the cut surface is clearly visible to the observer.

**OR**

(b)  A square pyramid, side of base 40 mm and height 60 mm rests with its base on the ground such that one of its base side is parallel to and 15 mm behind the picture plane. The station point is 90 mm in front of PP, 80 mm above the ground plane and lies in a central plane 40 mm to the right of the centre of the pyramid. Draw the perspective projection of the square pyramid.

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