Question Paper Code : 11737

B.E./B.Tech. DEGREE EXAMINATION, JANUARY 2013

First Semester

(Common to all Branches)

GE 2111/ME 15 — ENGINEERING GRAPHICS

(Regulation 2008/2010)

Time : Three hours | Maximum : 100 marks

Answer ALL questions | (5 × 20 = 100)

1. (a) Construct a hyperbola when the distance between the focus and the directrix is 40mm and the eccentricity is 4/3. Draw a tangent and normal at any point on the hyperbola.

Or

(b) Draw the involute of a circle of 40 mm diameter. Also draw a tangent and normal to the curve at a point 95 mm from the centre of the circle.

2. (a) The top view of a 75 mm long line AB measures 65 mm while the length of its front view is 50 mm. Its one end A is in H.P. and 12mm in front of the V.P. Draw the projections of AB and determine its inclinations with the H.P. and the V.P.

Or

(b) Draw the projections of a regular hexagon of 25 mm side having one of its sides in the H.P. and inclined at 60° to the V.P., and its surface making an angle of 45° with the H.P.

3. (a) A hexagonal prism side of base 25 mm and axis 60 mm long, lies with one of its rectangular faces on the H.P., such that the axis is inclined at 45° to the V.P. Draw the projections.

Or

(b) A pentagonal prism, side of base 25 mm and axis 50 mm long, rests with one of its shorter edges on H.P. such that the base containing that edge makes an angle of 30° to H.P. and its axis is parallel to V.P. Draw its projections.

4. (a) A hexagonal pyramid base 30 mm side and axis 70 mm long is resting on its slant edge of the face on the horizontal plane. A section plane perpendicular to the V.P., inclined to the H.P. passes through the highest corner of the base and intersecting the axis at 25 mm from the base. Draw the projections of the solid and determine the inclination of the section plane with the H.P.

Or

(b) A cone of base 50 mm diameter and axis 60 mm long, is resting on its base on H.P. It is cut by a section plane, perpendicular to V.P. and parallel to an extreme generator and passing through a point on the axis at a distance of 20 mm from the apex. Draw the development of the retained solid.

5. (a) A pentagonal pyramid, with edge of base 40 mm and axis 70 mm long, is resting on its base on H.P. One of the base edges of the pyramid is perpendicular to V.P. A section plane, perpendicular to V.P. and inclined to H.P. at 30° , passes through the axis, at a height of 30 mm from the base. Draw the isometric projection of the truncated pyramid.

Or

(b) A rectangular lamina of size 30 mm × 50 mm rests on the ground with one edge on PP and the remaining portion behind PP. The station point is 60 mm above GP and 30 mm in front of PP and lies on a central plane 35 mm to the left of the nearest edge of the lamina. Draw the perspective view of the lamina.
