Reg. No. :

Question Paper Code : 77158

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

First Semester

Mechanical Engineering

GE 6152 — ENGINEERING GRAPHICS

(Common to all Branches)

(Regulation 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

$(5 \times 20 = 100)$

1.   (a)   Draw the involute of a circle of diameter 40 mm. Also draw a tangent
            and normal to the curve at any point on the curve.

Or

(b)   Sketch free-hand the top, front and right side views of the object shown
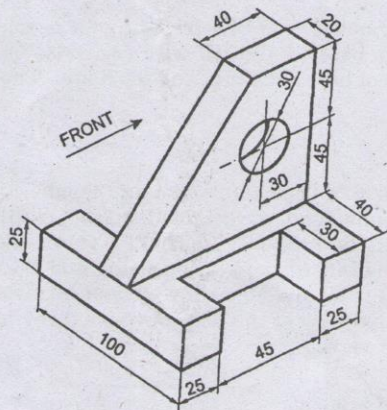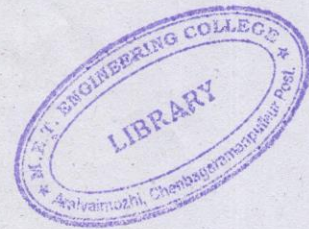   in Fig. 1(b)

Fig.1 (b)

2. (a) A line NS, 80 mm long has its end N, 10 mm above the HP and 15 mm in front of the VP. The other end S is 65 mm above the HP and 50 mm in front of the VP. Draw the projections of the line and find its true inclinations with the HP and VP.

Or

(b) A rectangular plate measuring 55×30 mm is resting on its shorter side on the HP inclined at 30° to the VP. Its surface is inclined at 60° to the HP. Draw its projections.

3. (a) A square prism of base side 35 mm and axis length 60 mm lies on the HP on one of its longer edges with its faces equally inclined to the HP. Draw its projections when its axis is inclined at 30° to the VP. Use change of position method.

Or

(b) Draw the projections of a hexagonal prism of base side 20 mm and axis length 50 mm when it rests on the ground on one of its base edges and the axis inclined at 35° 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) Draw the isometric view of a frustum of a hexagonal pyramid when it is resting on its base on the HP with two sides of the base parallel to the VP. The side of base is 20 mm and top 8 mm. The height of the frustum is 55 mm.

Or

(b) A square prism of base 25×25 mm and height 40 mm rests on the GP on one of its ends with a rectangular face receding away from the PP towards right making 60° with PP. The corner nearest to the PP is 40 mm to the left of the station point and 20 mm behind the PP. the Station point is 60 mm above the GP and 50 mm in front of the PP. Draw the perspective view of the prism by visual ray method. Use the top view and the front view.

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