P P SAVANI UNIVERSITY

Second Semester of B. Tech. Examination

May 2019

SEME1010 Engineering Graphics

16.05.2019, Thursday **Time: 12:30 p.m. To 03:00 p.m.** **Maximum Marks: 60**

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q – 1 Answer the Following (Any Five). **[05]**

(i) In the orthographic projections, F.V. is projected on _____.
a) H.P. b) V.P. c) XY d) GL

(ii) A cone base diameter 40 mm and axis 60 mm is cut by a plane parallel to the base then the true shape will be _____.
a)Parabola b) Circle c) Isosceles Triangle d) Regular Triangle

(iii) In first angle projection method, the left hand side view is placed on _____.
a) above elevation b) right side of elevation
c) below elevation d) left side of elevation

(iv) The eccentricity of which of the following curve is greater than one?
a) Ellipse b) Hyperbola c) Parabola d) None of above

(v) A hexagon is placed parallel to vertical plane, which of the following projection is true?
a) Front view-line, top view- hexagon
b) Front view- hexagon, top view- line
c) Front view –line, top view-line
d) Top view- hexagon, side view- line

(vi) Which is the line used for visible outlines?
a) Continuous thin b) Continuous thick
c) Chain thin line d) Short zigzag thin

(Vii) The dotted lines represents _____
a) Hidden Line b) Projection Line c) Centre Line d) Hatching Line

Q - 2 (a) Construct an ellipse when the distance of focus from the directrix is equal to 50 mm and eccentricity is 2/3. **[05]**

Q - 2 (b) Draw the involute of a circle 60 mm diameter. **[05]**

OR

Q - 2 (a) A circle of 40 mm diameter rolls along a straight line without slipping. Draw the curve traced out by a point P on the circumference, for one complete revolution of the circle. Name the curve. **[05]**

Q - 2 (b) Construct diagonal scale of R.F. 1:20 showing divisions of 0.01 m and capable of measuring 3 metre. Mark a distance of 2.37m on it. **[05]**

Q - 3 (a) A rectangular plane ABCD with side AB = 30 mm and BC = 50 mm is resting on HP on its smaller side AB. Draw the projections of a plane when its surface makes an angle of 45^0 with the HP and side AB which is on the HP is inclined at 45^0 to the VP. **[07]**

Q - 3 (b) The top view of 75 mm long line AB measures 65mm, while the length of its in front view is 50 mm. its one end A is in the HP and 12 mm in front of the VP. Draw the projection of line AB and find its inclination with the HP and VP. **[05]**

OR

Q - 3 (a) A semicircular plate of 80 mm diameter has its straight edge in the VP and inclined at 45⁰ to the HP. The surface of the plane makes 30⁰ with the VP. Draw its projections. **[07]**

Q - 3 (b) Draw the projections of a line PQ when its end P is 20 mm above the HP and 10 mm in front of the VP its end Q is 55 mm above HP and 60 mm in front of VP and the distance between projectors of P and Q (measured parallel to XY line) is 45 mm. Find TL and other inclination. **[05]**

Q - 4 Draw the projection of following points by keeping 20 mm distance between projectors. **[03]**
(Attempt any Three):

a) Point A is 25mm above HP and 20mm in front of VP.
b) Point B is 25mm below HP and 15mm behind VP.
c) Point C on HP and 20mm in front of VP.
d) Point D in VP and 25mm below HP.

SECTION – II

Q - 1 A square prism, side of base 30 mm and height 45 mm is resting on HP on one of the edge of the base. The edge on which is rest on the HP makes 45° with VP. The rectangular face, containing the edge on which it rests on HP, makes 60° with HP. Draw the projection of the prism when base is away from the observer or nearer to VP. **[10]**

OR

Q - 1 A square pyramid, base 40 mm side and axis 65 mm long, has its base on the HP and all edges of the base equally inclined to the VP. It is cut by a section plane perpendicular to the VP inclined at 45° to the HP and bisecting the axis. Draw its section top view and true shape of the section. **[10]**

Q - 2 Draw the isometric view from the orthographic projections shown in following figure 1. **[10]**

OR

Q - 2 Figure 2 shows the front view and top view of object. Draw the isometric view. **[10]**

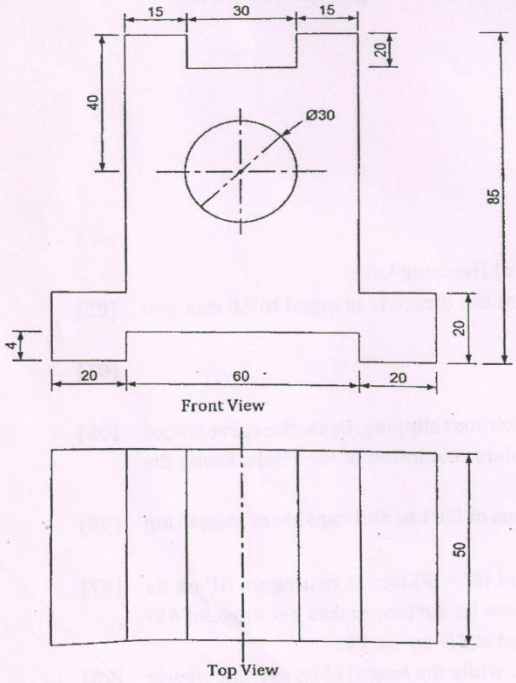


Figure1

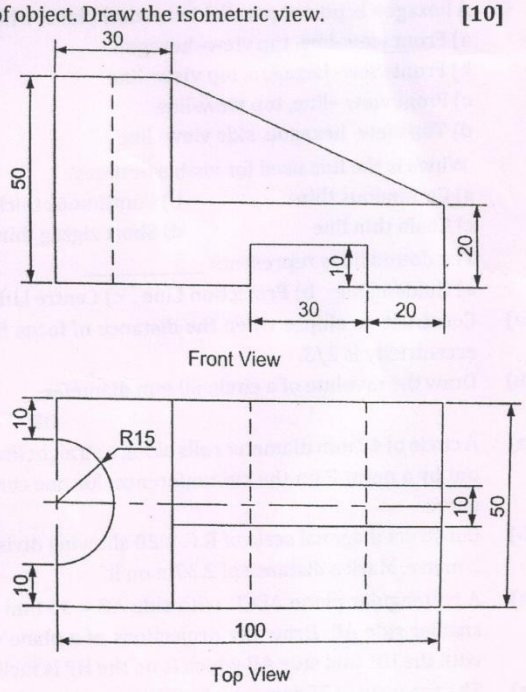
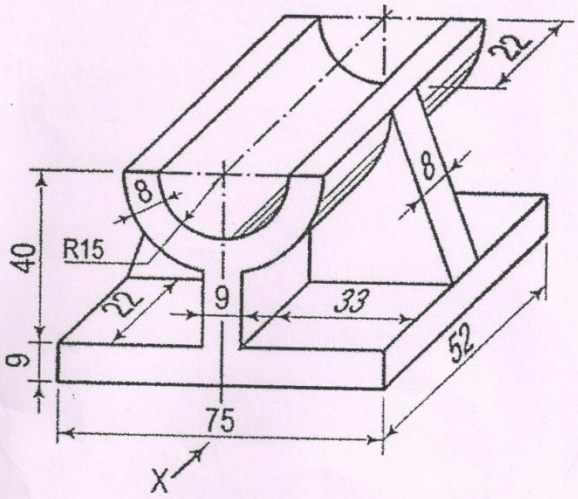


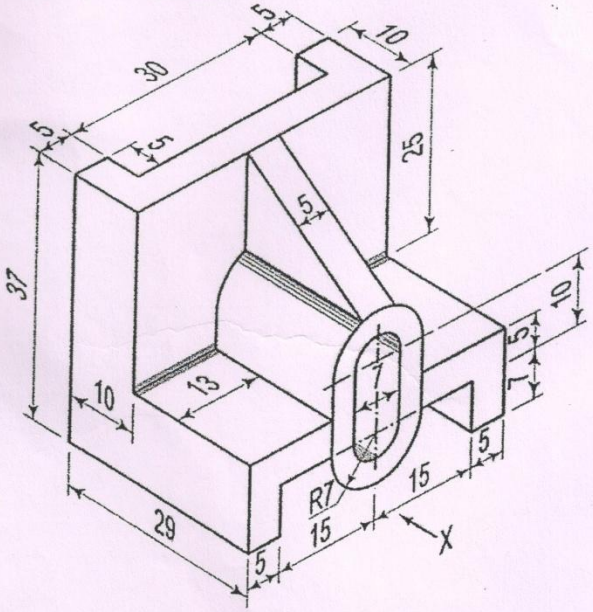
Figure 2

Q - 3 Draw the following views using First angle projection method: **[10]**
(a) Front view (b) Top view (c) RHSV



OR

Q - 3 Draw the following views using Third angle projection method: **[10]**
(a) Front view (b) Top view (c) RHSV



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