

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E. Sem-I & II Remedial Examination Nov/ Dec. 2010****Subject Code: 110013****Subject Name: Engineering Graphics****Date: 09-12-2010****Time: 10:30am-1:30pm****Total Marks: 70**

Instructions:

1. Attempt all questions.
2. Figures to the right indicate the full marks of the question.
3. Assume missing data or dimension and mention it clearly.
4. Show all the necessary dimensions in the solution.
5. Take suitable scale whenever required and mention it clearly.
6. Retain all construction lines required for the solution.
7. Figures drawn in the question paper are not to the scale.
8. Dimensions shown in the figure are in mm.

Q.1 An elliptical plane with major axis 70 mm and minor axis 50 mm is inclined to H.P. such that the top view of the plane is a circle. Draw the projections of the plane when the major axis is inclined at 30° to the V.P. Find the inclination of the plane with the H.P. Use the concentric circle method to draw the top view of the plane in the initial stage. **14**

Q.2 (a) The link AB hinged at A is 120 mm long. It swings in clockwise direction for 45° from its vertical position of rest and then returns to the initial position through anticlockwise swing. Points P and Q are on the link at a distance of 120 mm and 60 mm from the hinge respectively. During clockwise swing of the link the point P moves 60 mm upward while the point Q remains steady. During anticlockwise swing of the link the point P remains steady while the point Q moves 60 mm downward. Draw the loci of the points P and Q. Assume the motion of link and the movement of points to be uniform. **07**

(b) A string is kept tight while unwinding it from a square prism which is resting with its base on the H.P. Trace the path of the end point of the string, if 100 mm long string can be unwound in one turn. Name the path traced by the end point of the string. **07**

OR

(b) A wheel rolls over the horizontal straight line path and covers 1980 mm distance in one rotation. Draw the path traced by the point P which is initially at the point of contact between the wheel and the horizontal straight line. Name the path traced by the point P. **07**

Q.3 The line AB has end A in front of V.P. and 30 mm above H.P, while end B is in V.P. and 20 mm below H.P. The line is inclined at 30° to the V.P. and the apparent angle in elevation is 30° . Draw the projections of the line AB. Find the true length, the elevation length and the plan length of the line. Measure the inclination of the line with the H.P. **14**

OR

Q.3 A cylinder having base diameter 50 mm and the axis length 80 mm is resting with its base on the H.P. It is cut from the mid point of axis by the A.I.P. inclined at 30° . Draw the complete development of the lower portion of the cylinder. **14**

Q.4 A circular cone is of 60 mm base diameter and 80 mm long generator. It is resting on the H.P. with one of the points of its base on it and the apex 55 mm above it. Draw the projection of the cone when the plan of the axis is inclined at 45° to the V.P. Measure the inclination of the cone with the H.P. **14**

OR

Q.4 A hexagonal pyramid of the base side 30 mm and axis length 70 mm is resting on H.P. with its base on it and one of the sides of the base parallel to V.P. The axis of the pyramid is 40 mm away from the V.P. The pyramid is cut by the A.V.P. inclined at 30° . The cutting plane is 15 mm away from the axis and nearer to the observer. Draw the top view, sectional front view and the true shape of the section. **14**

Q.5 Refer the object shown in **FIGURE-1**. Draw the following views using the first angle projection method. Use the unidirectional system of the dimensioning. **14**

- (i) Sectional Front View
- (ii) Top View
- (iii) Right Hand Side View

OR

Q.5 The orthographic views of an object using the first angle projection method are shown in the **FIGURE-2**. Draw the isometric projection. **14**

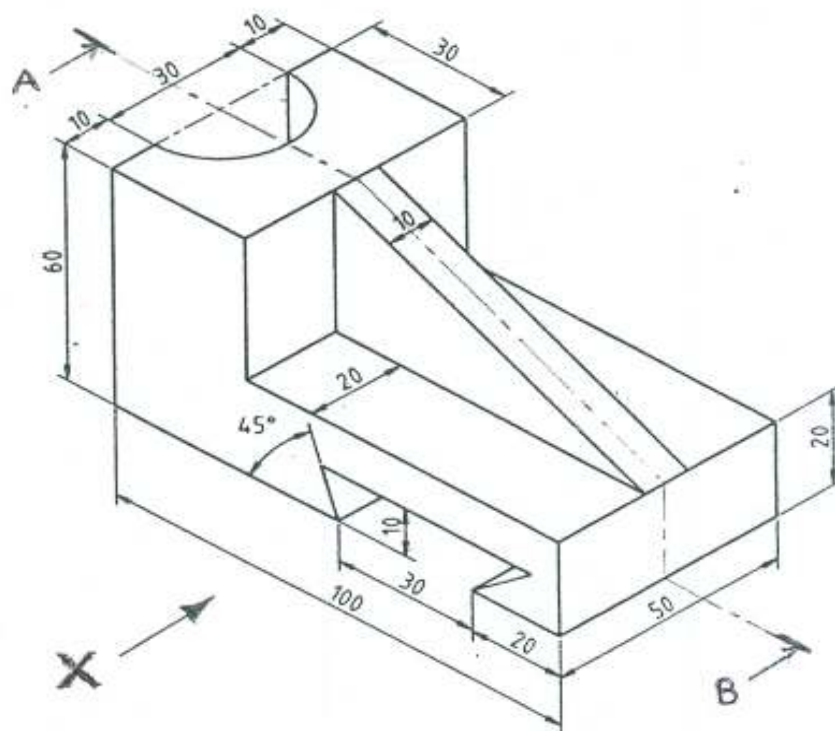


FIGURE - 1

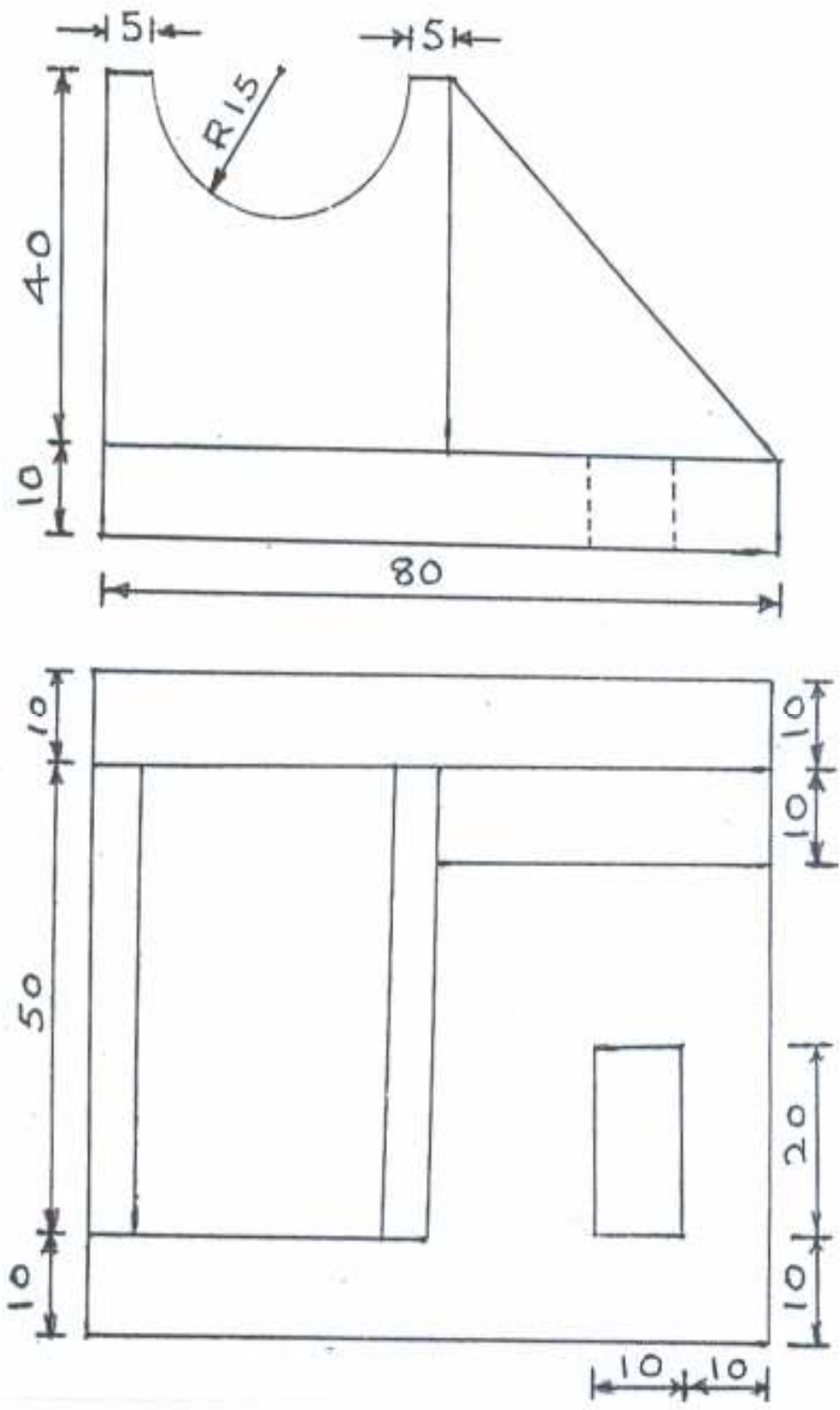


FIGURE - 2