Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-I/II Examination June-July-2011

Subject code: 110013 **Subject Name: Engineering Graphics**

Date:13/07/11 **Total Marks: 70** **Time:10:30am to 1:30pm**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Retain all construction lines and show the required dimensions.**
5. **Take suitable scale whenever required and mention it clearly.**
6. **Figures drawn in the question paper are not to the scale.**

Q.1 **Fig.-1** shows pictorial view of an object. Draw the following views using first angle projection method. **14**
(1) Sectional Elevation from X (2) Top view (3) Right hand side view.

Q.2 **(a)** Draw an ellipse having major axis 120 mm and minor axis 80 mm. Use Arc of circle method. **07**

(b) A circle of 50 mm diameter rolls along a straight line without slipping. Draw the curve traced out by the point P on the periphery of the circle. Take the initial position the point at the bottom on vertical centre line of the circle. Name the curve and also draw tangent and normal to the curve at suitable point on the curve. **07**

OR

(b) A circular disc of diameter 90 mm rotates about its centre in clockwise direction. While the disc completes one revolution, an insect walks across the diameter of the disc from one end to the other end and come back to the original point on the diameter of the disc. Plot the locus of path of insect, assuming both the rotation of disc and movement of the insect as uniform. **07**

Q.3 **(a)** A straight line AB is inclined to the H.P. by 30^0 and to the V.P. by 60^0, if true length of line is 100 mm find lengths of plan and elevation of the line and draw the projections. **07**

(b) A square plate PQRS of side 35 mm is resting on corner P with diagonal PR making 30^0 with H.P. and diagonal QS inclined to V.P. by 60^0 and parallel to H.P. Draw the projections of the square plate. **07**

OR

Q.3 **(a)** The distance between end projectors of a straight line CD is 65 mm. The point C is 30 mm above H.P. and 25 mm behind V.P. The point D is 40 mm above H.P. and 20 mm in front V.P. Draw the projections of straight line CD. Through which principal plane the straight line will pass and what will be the distance of the point of intersection of line from the other principal plane? **07**

(b) A hexagonal plate is resting on one of its side on H.P. The side on which it rests makes an angle of 45^0 with V.P. and the plate makes an angle of 30^0 with H.P. Draw the projections of the plate. **07**

Q.4 A frustum of a cone, having base diameter 60 mm, top base diameter 25 mm and axis 45 mm, is resting on one of its generators on H.P. The axes of the frustum makes and angle of 30^0 with V.P. Draw the projections of the solid. **14**

OR

Q.4 A cylinder, diameter of base 75 mm and axis 84 mm is resting on one of its generator on the H.P. with its axis remaining parallel to V.P. It is cut by an A.V.P. inclined to the V.P. by 45^0 and passing through the midpoint of the axis of the cylinder. Draw sectional elevation, sectional end view and plan showing the cutting plane. **14**

Q.5 Draw the plan and elevation of a cone resting on H.P. on its base. Show on them, the shortest path followed by an insect moving around the cone and returning to the same point. The insect starts from a point on the periphery of the base. Take base diameter of the cone 80 mm and height of axis 90 mm. **14**

OR

Q.5 **Figure 2**. shows elevation and plan of a bracket, draw isometric projection of the bracket and also draw the isometric scale. **14**

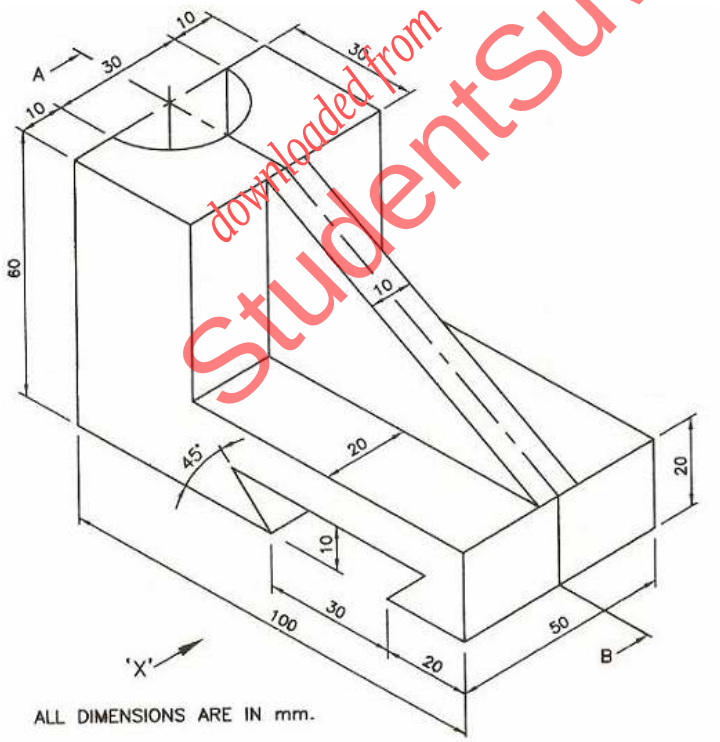

Figure 1. Question 1.

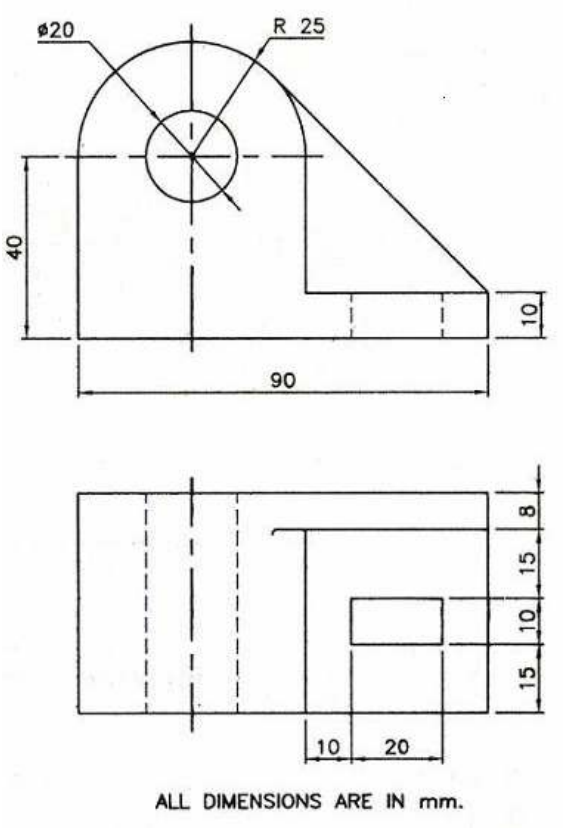

Figure2.Question5