

# GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. Sem-II Examination June- 2010

Subject code: 110013

Subject Name: Engineering Graphics

Date: 25 /06 /2010

Time: 02.30 pm – 05.30 pm

Total Marks: 70

## Instructions :

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

**Q.1** Fig. – 1 shows pictorial view of an object. Draw following views **14**  
(a) Sectional Elevation from – X (b) Plan and (c) Right hand side view

**Q.2 (a)** In a slider crank chain OBA as shown in **Figure – 2**, the crank OB is 350 mm long and the connecting rod BA is 1050 mm long. Plot the loci of point P and Q where point P is on the connecting rod 350 mm from B and point Q is on extension of C.R. BA and 450 mm from A. **07**

**(b)** The major axis and the minor axis of Ellipse are 125 mm and 75 mm. Construct half ellipse by Oblong method and another half by Concentric circle method. **07**

**OR**

**(b)** Draw a cycloid for a rolling circle, of 60 mm diameter rolling along a straight line without slipping. Take initial position of the tracing point at the bottom of the vertical centre line of the rolling circle. Draw tangent and normal to the curve at a point 35 mm above the directing line. **07**

**Q.3** Draw the projections of a regular Hexagonal plane of 30 mm side having one of its sides on the H.P. and inclined at 60 degree to V.P. and its surface making an angle of 45 degree with H.P. **14**

**OR**

**Q.3** Fig – 3 shows the elevation of cut Hexagonal Prism, cut by curved and flat cutting planes. Draw the complete development of the prism. **14**

**Q.4** A cone diameter of base 60 mm and height 90 mm is resting on H.P. on the point of periphery of the base. Axis of the cone makes 60 degree with the H.P. and 30 degree with the V. P. Draw the projections of the cone, when the apex is nearer to observer. **14**

**OR**

A square pyramid, base 45 mm side and axis 70 mm long has its base in H.P. and all edges of the base are equally inclined to V.P. It is cut by a section plane perpendicular to V.P. and inclined at 45 degree to the H.P. such that it bisects the axis. Draw its sectional top view, sectional side view and the true shape of the section.

Q.5 (a) Draw the projections of the following points on the same X– Y line.

- (1) A point 'A' 40 mm below H.P. and 40 mm in front of V.P.
- (2) A point 'B' 35 mm above H.P. and 45 mm in front of V.P.
- (3) A point 'C' on V.P. and 30 mm above H.P.
- (4) A point 'D' on H.P. and V.P. both.

(b) A line PQ has its end P 15 mm above H.P. and 10 mm in front of V.P. The end Q is 60 mm above H.P. The distance between the end projectors is 55 mm. The line is inclined to H.P. by 25 degree. Draw the projections and find its inclination with V.P. and true length of line PQ.

OR

Q.5 Figure - 4 shows two views of an object. Draw isometric projection using 14 isometric scale.

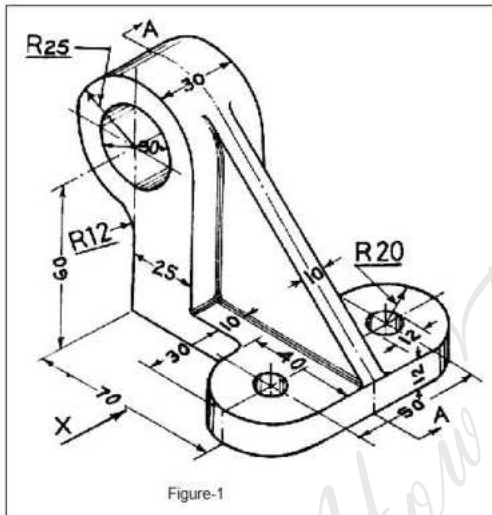


Figure-1

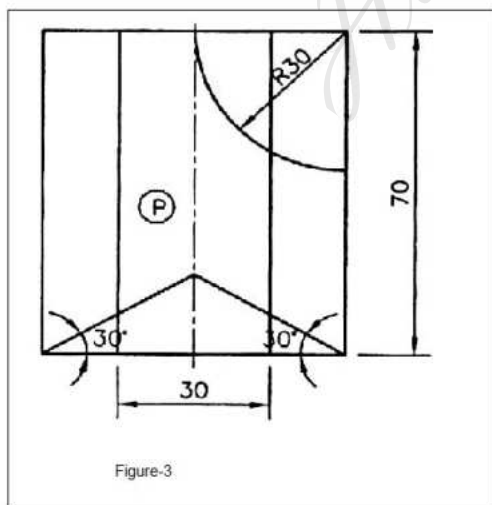


Figure-3

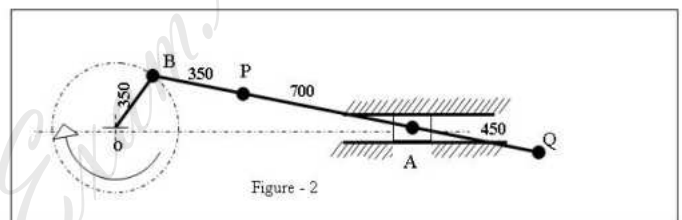


Figure - 2

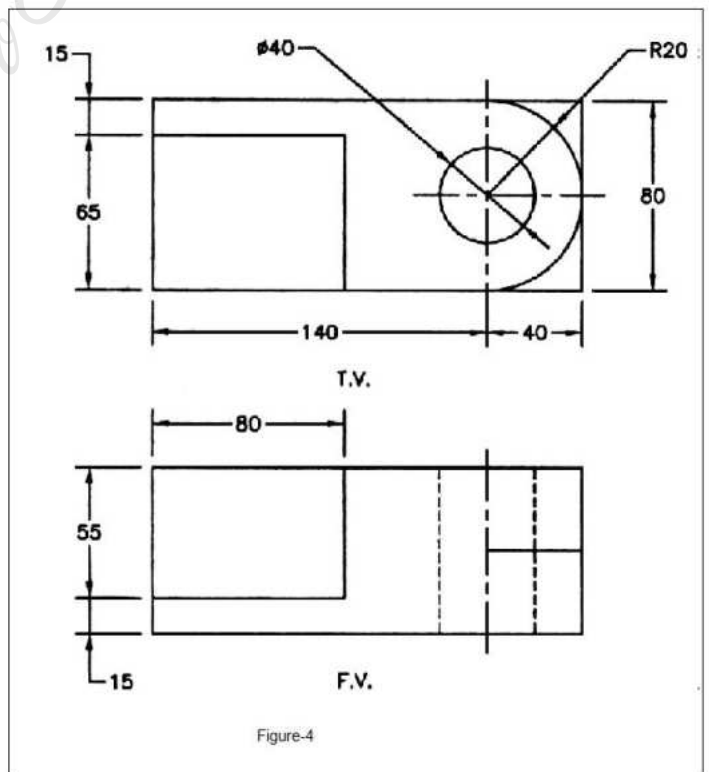


Figure-4