

GUJARAT TECHNOLOGICAL UNIVERSITY
BE- Ist /IInd SEMESTER-EXAMINATION – MAY/JUNE - 2012

Subject code: 110013

Date: 08/06/2012

Subject Name: Engineering graphics

Time: 10:30 am – 01:30 pm

Total Marks: 70

Instructions:

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Each question carry equal marks

- Q.1** (a) Following figure 1 shows the pictorial view of the object .Draw the sectional Front view , Top view and and left hand side view using first angle method of projection. **12**

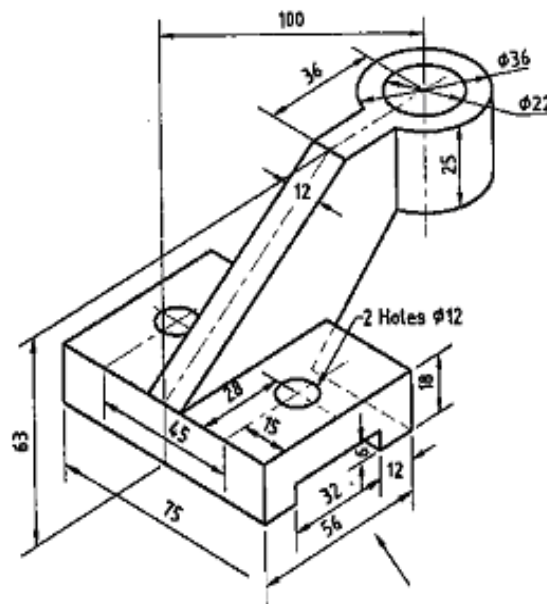


figure 1

- (b) Fill in the blanks **02**
- 1) When the cutting plane is perpendicular to the axis and cuts all the generators of a cone , the section obtained is an -----
 - 2) When the axis of a solid is parallel to both H.P. and V.P. , the view will show the true shape and size of the base.

- Q.2** (a) In an offset slider crank chain OBA as shown in Fig. 2, the crank OB is 300 mm long and the connecting rod BA is 1000 mm long. Slider A slides in a horizontal guide 150 mm below the horizontal axis from O. Draw the loci of points P and Q where the point P is a point on the connecting rod BA, 250 mm from B and the point Q is the end point of PQ, a rod attached at right angle to connecting rod AB at P.

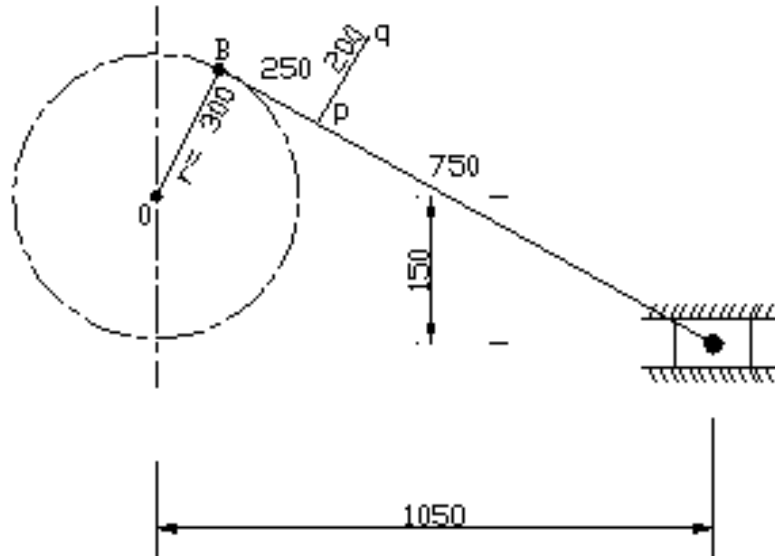
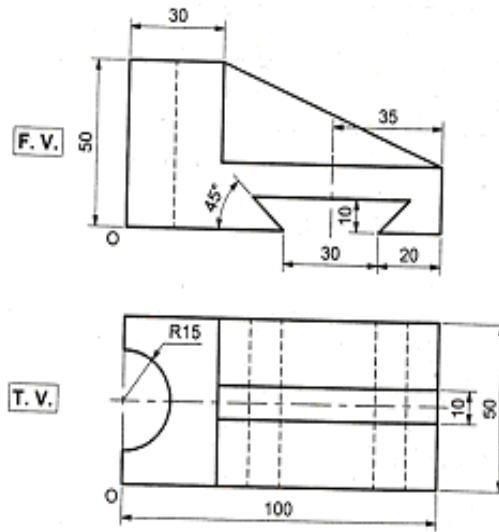


Figure 2

- (b) On map of Ahmedabad city 1 cm represents 1 Km. Construct a plain scale to measure the distance between Gujarat Technological University and Lal Darwaja which is 6 Km. Also indicate on scale, the distance between Geeta mandir and Kankariya lake which is 3 Km and 7 hectameters. **04**
- Q.3** (a) Two points A and B are 50mm apart. Draw the curve traced out by a point P moving in such a way that the difference between its distances from A & B is always constant and equal to 20mm. **07**
- (b) A pentagonal pyramid of base edge 30 mm and height 60 mm rests on the HP such that one of its edge of base is parallel to and nearer to the VP. The pyramid is cut by a plane inclined 40° to the HP at 35 mm on axis from base of the pyramid. Draw the lateral development of the truncated pyramid. **07**
- Q.4** (a) Construct an Archimedean spiral of one and half convolutions given the greatest and shortest radii as 84mm and the 00 mm respectively. Draw the tangent and normal at point 60 mm away from the pole. **07**
- (b) A semi circular thin plate of 60 mm diameter rests on H.P. on its diameter, which is inclined at 45° to V.P. and the surface is inclined at 30° to the H.P. Draw the projections of the plate. **07**
- Q.5** (a) A straight line AB 80 mm long is inclined at 30° to the HP and at 45° to the VP. Its mid point C is in the VP and 18 mm above the HP, while its end A is in the third quadrant, and the end B is in the first quadrant. Draw its projections. **07**
- (b) A regular pentagon of 30mm side has one side parallel to the V.P. and making an angle of 40° with the H.P. the plane surface of the pentagon make 35° the V.P. Draw its projections. **07**
- Q. 6** (a) ABCD is tetrahedron of 60 mm long edge. The edge AB is in the H.P. The edge CD is inclined at an angle of 30° to the H.P. and 45° to the V.P. Draw the projections of the tetrahedron. **07**

- (b) A hexagonal pyramid is resting on one of its triangular face with axis remaining parallel to V.P. It is cut A.V.P. making 30° with V.P. passing through a point on the axis 33 mm from the apex. Draw plan, sectional elevation and the true shape of section. Take side of base 30 mm and height 75 mm. **07**

- Q.7** (a) Draw the isometric view from the following orthographic views. **10**



- (b) Prepare the isometric scale to measure the 120 mm long line. **04**
