

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BE –SEMESTER 1&2(NEW SYLLABUS)EXAMINATION- WINTER 2018**

**Subject Code: 3110013****Date: 16-01-2019****Subject Name: ENGINEERING GRAPHICS & DESIGN****Time: 10:30 am to 01:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		Marks
<b>Q.1</b>	(a) For 100 cm of a line compare size of drawing length on basis of full scale, reducing scale & enlarged scale.	<b>03</b>
	(b) Prepare isometric scale to measure 40mm and 74mm.	<b>04</b>
	(c) Point P of a straight line PQ is 25mm above H.P. and point Q is 65 mm in-front of V.P. The line makes an angle of $30^\circ$ with H.P. and its plan is at $45^\circ$ to the XY line. Draw the projections of the line if the plan length is 70mm. Also find the true length of the line and the angle made by the line with V.P.	<b>07</b>
<b>Q.2</b>	(a) List two applications of an ellipse, parabola and Hyperbola.	<b>03</b>
	(b) For the cuboid 50 x 30 x 20, draw all six orthographic views using 3 <sup>rd</sup> angle projection method.	<b>04</b>
	(c) A point P moves towards another point O, 90 mm from it, and reaches it during 1.5 revolutions around it in clockwise direction. Its movement towards O is uniform with its movement around it. Draw the curve traced out by the point P and name it.	<b>07</b>
	<b>OR</b>	
	(c) A fixed point is 54 mm away from a fixed straight line. Draw the locus of a point P moving in such a way that the ratio of its distance from the fixed straight line is 5:4. Name the curve.	<b>07</b>
<b>Q.3</b>	(a) Draw projection of following points (i) Point R is 10 mm behind V.P. & 20 mm above H.P. (ii) Point S is in H.P. & 22 mm in front of V.P. (iii) Point T is 15 mm in front of V.P & 25 mm below H.P.	<b>03</b>
	(b) A line AB, 75mm long, is parallel to VP and inclined to the HP, by an angle $45^\circ$ . Point A is 30mm below HP and 20mm in front of VP. Point B is in the first quadrant. Draw the projections of the straight line AB.	<b>04</b>
	(c) A line PQ, 100 mm long, is inclined at $30^\circ$ to the HP and $45^\circ$ to the VP. Its mid-point M is in the VP and 20mm above the HP. Draw its projections, when its end P is in the first quadrant and Q is in the third quadrant.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	(a) Draw Projections of the following lines. (i) Line MN 50mm is in 1 <sup>st</sup> quadrant and parallels both H.P. & V.P. (ii) Line PQ 35mm is in 3 <sup>rd</sup> quadrant and remains perpendicular to V.P. and parallel to H.P.	<b>03</b>
	(b) A square plate PQRS, edge 25mm, is in space with one of its corners in VP. Surface of the plate makes $50^\circ$ with VP and it is perpendicular to HP. Draw its projections.	<b>04</b>
	(c) The distance between the end projectors of a straight line PQ is 60mm. The line makes $30^\circ$ and $45^\circ$ angles with HP and VP, respectively. The	<b>07</b>

end P is 30mm below HP and 50mm in front of the VP. Draw its projections when end Q is in third quadrant. Find TL of the line.

- Q.4** (a) Define apparent shape and true shape with diagram. **03**  
 (b) Draw the development of pentagonal prism of side 30mm and height 60mm, when one of the edges of the base is perpendicular to VP. **04**  
 (c) An isosceles triangular plate ABC has its base 45mm and altitude 60mm. **07**  
 It is so placed that the front view is seen as an equilateral triangle of 45mm side and (i) base is inclined at  $45^\circ$  to HP (ii) side is inclined at  $45^\circ$  to HP. Draw its plan when its corner A is on HP.

**OR**

- Q.4** (a) Define right solid, oblique solid and regular solid. **03**  
 (b) A cone, diameter of base 55mm and height 60mm, is resting on HP on one of its generators with axis parallel to VP. Draw the projections of cone. **04**  
 (c) A semicircular plate of 80mm diameter has its straight edge in the VP and inclined at  $45^\circ$  to the HP. The surface of the plate makes an angle of  $30^\circ$  with the VP. Draw its projections. **07**
- Q.5** (a) Why chamfer is done on work piece. Write the steps to create chamfer in AUTOCAD. **03**  
 (b) List and explain different methods to draw circle in AUTOCAD. **04**  
 (c) Draw the (i) Front view (ii) Right hand side view and (iii) Top view of Fig. 02 in first angle projection method. Consider length as 50mm in direction of X. **07**

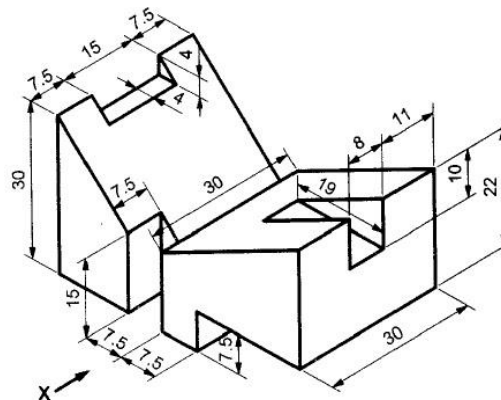


Fig.02

**OR**

- Q.5** (a) Write difference between line, polyline and its uses in AUTOCAD. **03**  
 (b) List and explain different methods to draw rectangle in AUTOCAD. **04**  
 (c) Draw isometric view of the Fig.03 given below. **07**

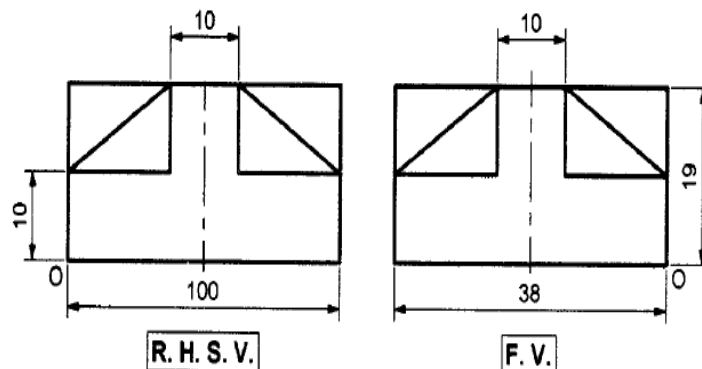


Fig.03

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