Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER 1st / 2nd EXAMINATION (OLD SYLLABUS) – SUMMER - 2017

Subject Code: 110013 **Date:08/06/2017**

Subject Name: Engineering Graphics

Time: 2:30 PM to 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 construction lines
5. Lines, dimensions etc should be as per BIS-SP-46

Q.1 **(a)** Construct a plain scale of RF 1:100 to show meters and decimeters. Maximum measurement required is 10 meters. Indicate 7 meter and 8 decimeters on the scale 03

(b) Explain Aligned system and Unidirectional system for dimensioning with illustration 04

Q.2 **(a)** Draw the projection of point and state the quadrant. 07

1. Point A is 20 mm above HP and 10 mm behind VP
2. Point B is 30 mm below HP and 40 mm behind VP
3. Point C is 35 mm above HP and 35 mm in front of VP
4. Point D is 40 mm below HP and 20 mm in front of VP

(b) Inscribe an ellipse in a Parallelogram having sides 100 mm and 70 mm long. 07

OR

(b) A circle of 40 mm diameter rolls along a straight line without slipping, Trace the path of a point on the circumference of the rolling circle for one complete revolution. Name the curve 07

Q.3 **(a)** A straight line PQ is 60 mm long. Its end P is 30 mm above HP and 20 mm in front of VP. Line is inclined to HP and VP by 30˚ and 45˚ respectively. Assume line is in the first quadrant. Draw the projection of line. 07

(b) The top view and the front view of the line AB, measure 65 mm and 53 mm respectively. The line is inclined to HP and VP by 30˚ and 45˚ respectively. The end A Is on HP and 12 mm in front of VP. End D is in the first quadrant. Draw the projection of the line AB and find its true length. 07

OR

Q.3 **(a)** PQRS is a rhombus of diagonal PR=110 mm and QS=70 mm. Its corner P is in the HP and the plane is inclined to the HP such that the plan appears to be a square. Find its inclination with HP. The plan of diagonal PR makes an angle of 30˚ to the VP. Draw the projections of the plane. 07

	(b)	A semi-circular thin plate of 50 mm diameter, rest on the HP on its diameter which is inclined at 45˚ to the VP and surface is inclined at 30˚ to the HP. Draw the projection of the plate.	07
Q.4	**(a)**	A cylinder, diameter of base 50 mm and height 70 mm is having a point of its periphery of base in the VP with axis of cylinder inclined to VP by 45˚and parallel to HP. Draw its projection	07
	(b)	A right regular pentagonal prism with 30 mm side of base and 65 mm height rests on an edge of its base in the HP such that its axis is inclined to the HP at 45˚. Draw the projection of the solid.	07
		OR	
Q.4	**(a)**	A right circular cone 50 mm diameter and 65 mm length rests on its base on the HP. It is cut by the AIP inclined at 45˚ to the HP, at a distance of 36 mm from its base on its axis.Draw the sectional plan and elevation.	07
	(b)	A hexagonal pyramid of 30 mm side of base and 70 mm long axis rests with its base on the HP and one of the edges of the base is parallel to the VP. It is cut by a horizontal section plane at a distance of 30 mm above the base. Draw the front view and sectional top view.	07
Q.5	**(a)**	Distinguish between first angle orthographic projection and third angle orthographic projection	04
	(b)	Figure 1 shows a pictorial view of an object. Draw the sectional front view, top view and right hand side view as per first angle orthographic projection method.	10
		OR	
Q.5	**(a)**	Draw an isometric scale long enough to measure up to 100 mm	04
	(b)	Draw isometric drawing for the Figure 2	10

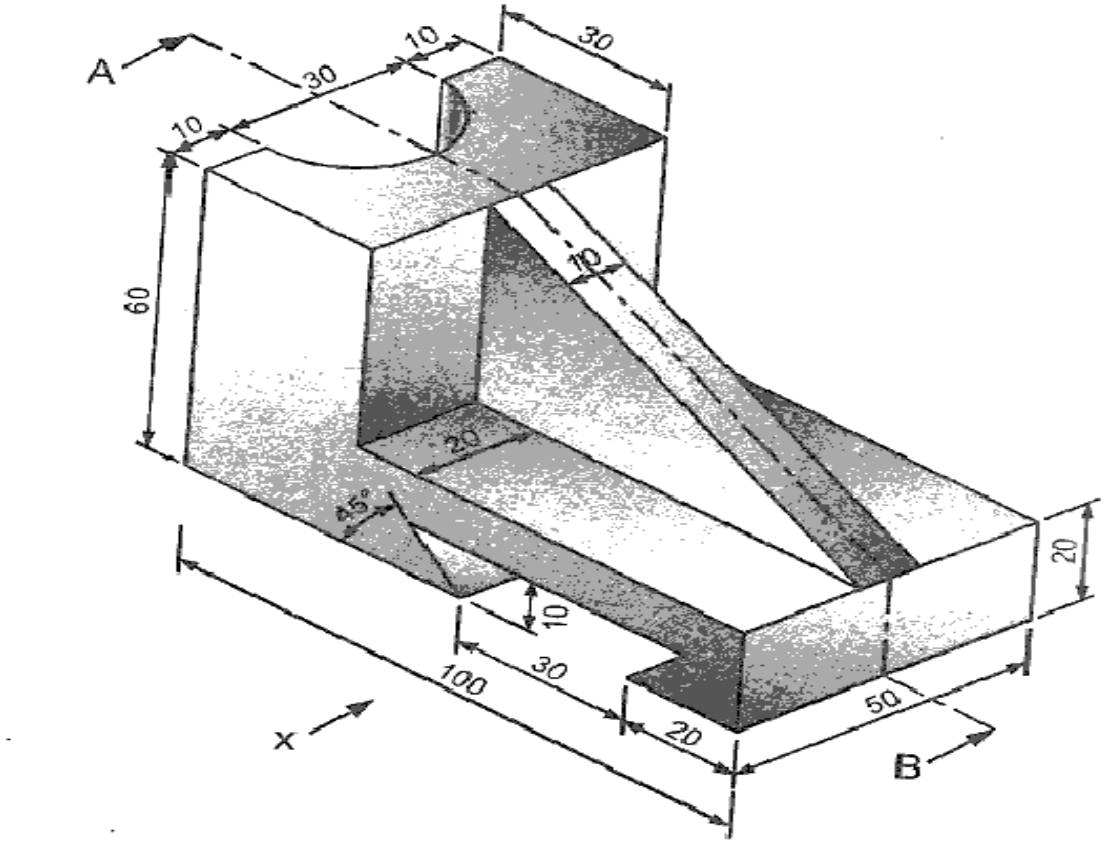

Figure 1 Q.5 (b)

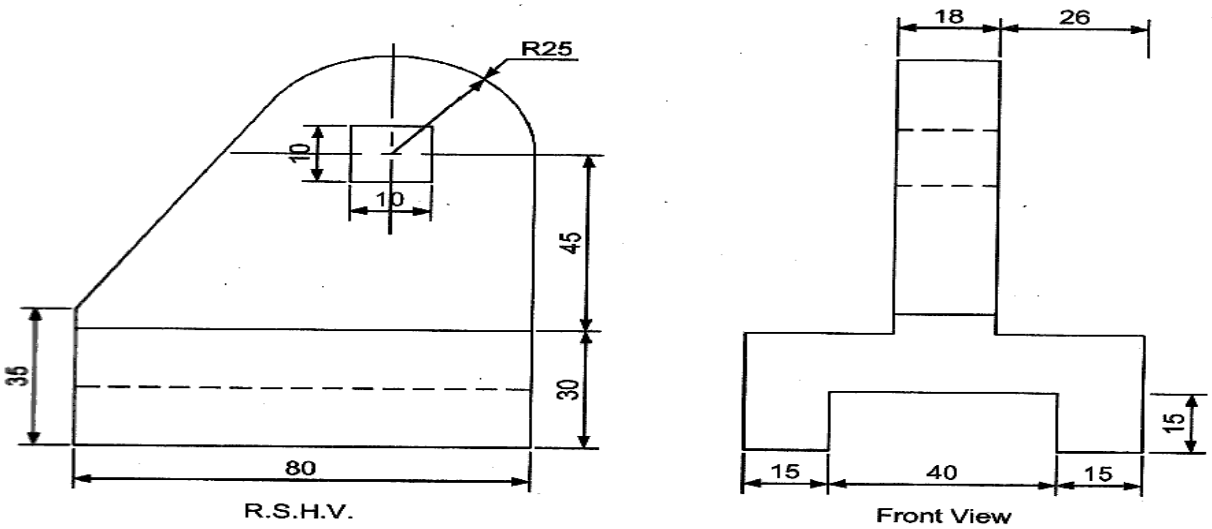

Figure 2 OR Q.5 (b)