Enrolment No./Seat No_____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–I & II EXAMINATION – WINTER 2024

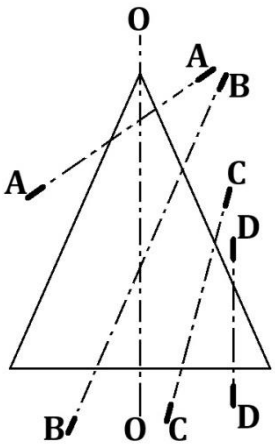
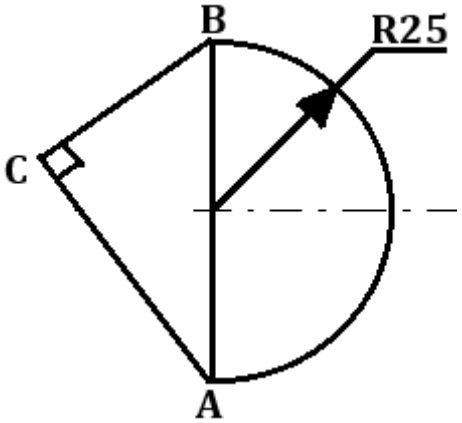
Subject Code:3110013 **Date:09-01-2025**

Subject Name:Engineering Graphics & Design

Time:10:30 AM TO 01:30 PM **Total Marks:70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			Marks
Q.1	**(a)**	Explain reducing scale. Give two practical applications of it.	**03**
	(b)	Draw symbol of following and right use of it. 1) Cutting Plane line 2) Dimension line 3) Break line 4) Section Line	**04**
	(c)	The distance between two trees on road is 876m. Show it on a scale of 1**:**6250. Also show distance of 653m distance between two vehicles parked on a side of the road.	**07**
Q.2	**(a)**	Define ellipse. What is eccentricity? What is the value of eccentricity for ellipse?	**03**
	(b)	 When we cut a cone using cutting planes as shown in figure, name the curves which are available as cut section of cone with particular cutting plane.	**04**
	(c)		**07**

Draw involute of a string unwound for the given figure from point C, where AC = 40 mm and BC = 30 mm

OR

(c) Draw an ellipse using concentric circle method. Given the distance between Foci is 90mm and length of major axis is 130mm. **07**

Q.3 **(a)** A circular plane of 50 mm diameter is perpendicular to HP and VP. The centre of plane is 30mm above HP and 35mm in-front of VP. Draw its projection. **03**

(b) A thin rectangular plate of side 40mm x 20mm has its shorter side in HP. Project its front view when its top view is a perfect square of 20mm side. **04**

(c) The top view of a 75mm long line AB measures 65mm, while its front view measures 50mm. It's one end A is in HP and12mm in front of VP. Draw the projections of AB and determine its inclination with HP and VP **07**

OR

Q.3 **(a)** Draw the projection of following points **03**

1. Point A is 20 mm above HP and 35 mm behind VP
2. Point B is 20 mm below HP and 35 mm in front of VP
3. Point C is in VP and 15 mm above HP

(b) A rhombus of 30mm and 50mm diagonal is resting on HP on one of its corner such that it appears a square of 30mm diagonals. Find its inclination with HP. **04**

(c) A pentagonal plane having edges 25 mm is placed on one of its corners on HP such that the surface makes an angle 30^o with HP and side opposite to that corner on which the plane rests inclined at 60^o to VP. Draw the top and front views of the plane. **07**

Q.4 **(a)** Define solid of revolution? Give three example of solid of revolution. **03**

(b) A hexagonal prism, edge of base 25 mm and axis 65 mm long, rests with its base on H.P such that one of its rectangular faces is parallel to V.P. It is cut by a plane perpendicular to V.P and parallel to HP and 30mm above HP. Draw the development of the lateral surface of the truncated prism. **04**

(c) Draw the top view and front view of a rectangular pyramid of sides of base 40 mm x 50 mm and height 70mm when it lies on one of its larger triangular faces on HP. The longer edge of the base of the triangular face lying on HP is inclined at 60^o to VP in the top view with the apex of the pyramid being nearer to VP. **07**

OR

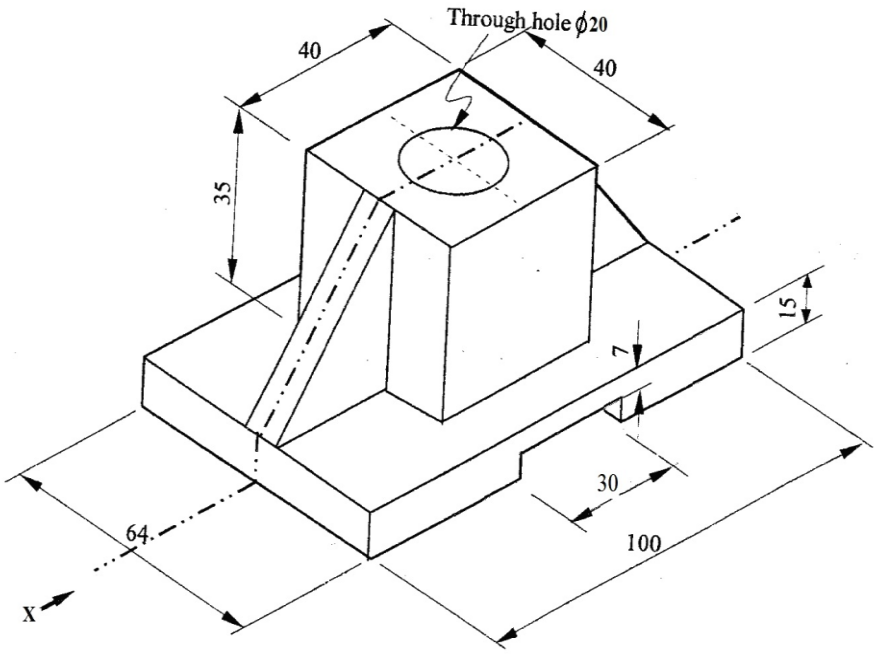
Q.4 **(a)** Differentiate between prism and pyramid. **03**

(b) Bisect one of the interior angle of regular pentagonal plane having sides of 30mm. **04**

(c) A square pyramid having 30mm edge of the base and axis of 70mm long and axis parallel to VP and inclined at 60^0 to HP. Draw projection of pyramid if one of the edge of its base inclined at 30^o to VP and apex is on HP and 40 mm away from VP. **07**

Q.5 **(a)** Draw isometric scale for the line of length 100mm. Mark 53mm on it. **04**

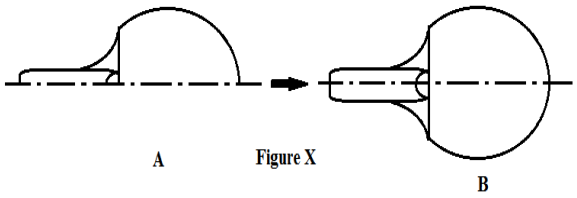
(b) Draw Front view, Top View and Right hand side view using 1st angle projection method. **10**



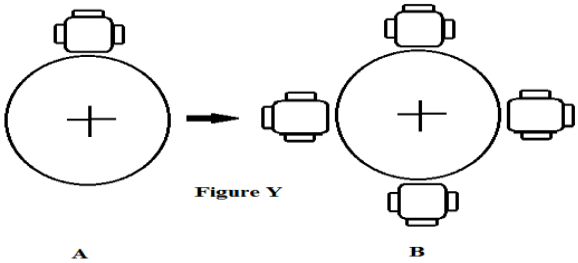
OR

Q.5 **(a)** Which AUTOCAD command can be used to create Part B from Part A for the following figures? **03**

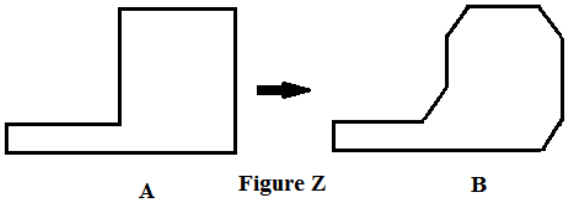
1)



2)

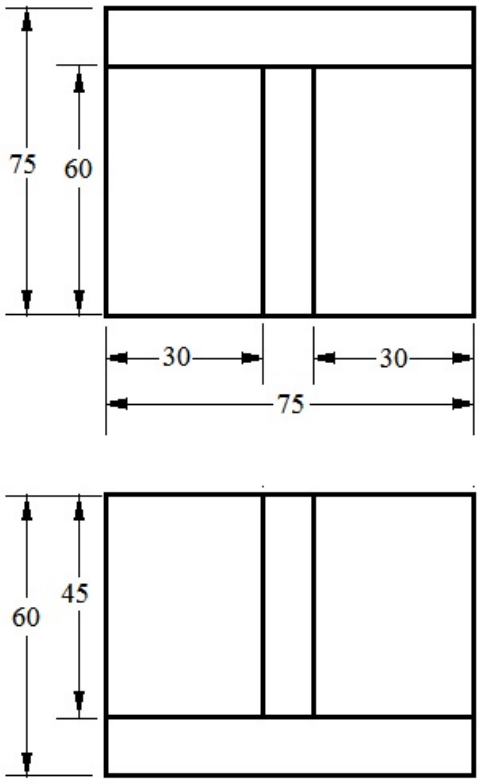


3)



(b) Advantages of AUTOCAD over conventional drawing. **04**

(c) Draw isometric drawing of the following views. **07**



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