P P SAVANI UNIVERSITY

Second Semester of B. Tech. Examination

December 2022

SEME1040 Concept of Engineering Drawing

06.12.2022, Tuesday **Time: 1:00 p.m. To 3:30 p.m.** **Maximum Marks: 60**

Instructions:

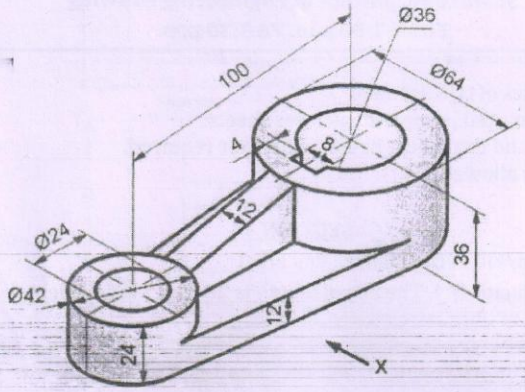
1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

SECTION – I

Q - 1	MCQ/Short Question/Fill in the Blanks (Any Five)		**[05]**	**CO**	**BTL**
(i)	The representative factor is 4. The actual length is 20 mm. Find the length of the drawing.			**3**	**1**
	a) 5 cm	b) 0.2 mm			
	c) 8 cm	d) 5 mm			
(ii)	The 2nd quadrant is in which position?			**1**	**1**
	a) Below H.P, behind V.P	b) Above H.P, behind V.P			
	c) Above H.P, in-front of V.P	d) Below H.P, in-front of V.P			
(iii)	Which of the following is a conic section?			**3**	**1**
	a) Rectangle	b) Triangle			
	c) Square	d) Circle			
(iv)	If the distance from the focus is 4 mm and the distance from the directrix is 1 mm then what is the name of the conic section?			**2**	**3**
	a) Parabola	b) Hyperbola			
	c) Ellipse	d) Circle			
(v)	In 1st angle projection the _____ lies between _____ and _____			**1**	**1**
	a) object, projection plane, observer	b) projection plane, object, observer			
	c) reference line, side view, front view	d) reference line, left side view, right side view			
(vi)	If eccentricity of ellipse is 3/7, how many divisions will the line joining the directrix and the focus have in directrix-focus method?			**2**	**2**
	e) 10	f) 7			
	g) 3	h) 5			
(vii)	Dashed lines are used to show			**1**	**2**
	a) Center & Center Axis	b) Projection			
	c) Hidden Faces	d) Outer Edge			
Q - 2 (a)	A thin rod PR of 140 mm length rotates about a point Q on it, 40 mm from the end P. A point S located on PR at 40 mm distance from end R moves along the rod and reaches point P during the period in which the rod completes one revolution. Draw the locus of point S if both the motions are uniform. Name the curve. Draw a tangent and a normal at any convenient point on the curve.		**[06]**	**2**	**5**
Q - 2 (b)	Construct an ellipse by rectangle method, given major and minor axes as 55 mm and 30 mm respectively.		**[04]**	**2**	**5**
	OR				
Q - 2 (a)	Draw epicycloid of a 40 mm diameter circle, which rolls outside on another		**[06]**	**2**	**5**

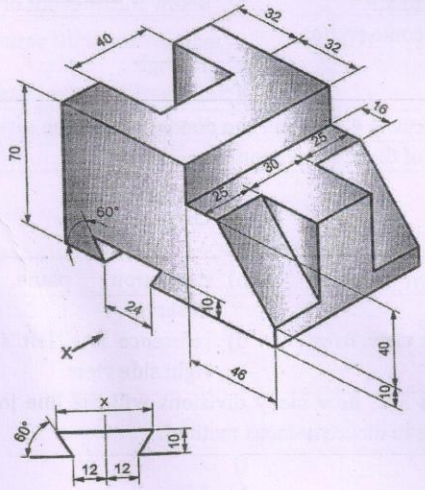
circle of 150 mm diameter for one revolution clockwise.

~~Q - 2 (b)~~	~~Explain the differences between cycloid, Involute and spiral~~	~~[04]~~	~~2~~	~~2~~
Q - 3	Using First angle projection method draw Front View, Top View and Right hand Side view looking from X direction of figure	[10]	4	5



OR

Q - 3	Draw elevation and plan of figure according to first angle projection method.	[10]	4	5



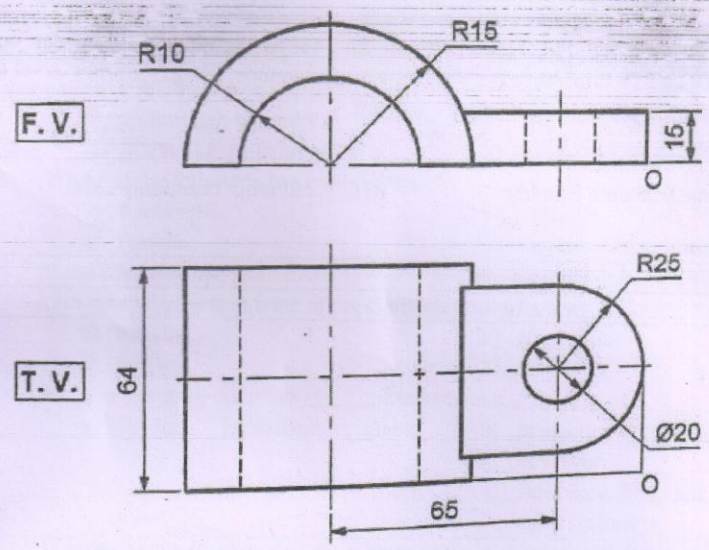
Q - 4	Attempt any one/two.	[05]		
(i)	Draw a scale 1 cm = 1m to read decimeters, to measure maximum distance of 8 m. Show on it a distance of 6 m and 8 dm.		2	2
(ii)	Differentiate between First angle and Third angle projection method.		1	3

SECTION – II

Q - 1	State the position of each of the following points with respect to the HP and the VP as well as the quadrant in which the point is located, if their projections are as follows.	[05]	5	4

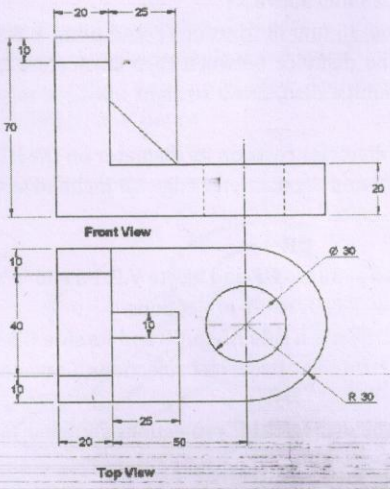
Point	Front View	Top View
A	20 mm above XY	25 mm above XY
B	25 mm below XY	20 mm above XY
C	15 mm above XY	20 mm below XY
D	25 mm below XY	20 mm below XY

	E on XY 25 mm above XY			
Q - 2 (a)	Point A is 25 mm above HP and 35 mm in front of VP and point B is in the HP and 45 mm behind the VP. The distance between their projectors is 55 mm. Draw the projections of the points. Also, draw straight lines joining their top and front views.	[03]	3	5
Q - 2 (b)	A semicircular plate of 40 mm diameter rests on its diameter on the HP with the surface inclined at 30° to the HP and the diameter edge AB inclined at 45° to the VP. Draw the projections of the plate.	[07]	3	5
	OR			
Q - 2 (a)	A line AB 75 mm long is inclined at 30° to HP and 45° to V.P. Its end 'A' is 15 mm above H.P. and 15 mm in front of V.P. Draw its projections.	[03]	3	5
Q - 2 (b)	A regular hexagon lamina ABCDEF has a side AB in VP and its side DE 45 mm in front of the VP and inclined to HP at 30°. Draw its projections. Consider the size of the lamina as 50 mm.	[07]	3	5
Q - 3 (a)	Draw the isometric view from the orthographic projections shown in figure	[10]	5	5



OR

Q - 3 (a)	Draw the isometric view from the orthographic projections shown in following figures.	[10]	5	5



Q - 4 A line PQ 80 mm long, is inclined at 30⁰ to the HP and 45⁰ to the VP. Its mid-point M is in the VP and 15 mm above the HP. Draw its projections, when its end P is in the first quadrant and Q is in the third quadrant. **[05] 3 5**

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CO : Course Outcome Number BTL : Blooms Taxonomy Level

Level of Bloom's Revised Taxonomy in Assessment

1: Remember	2: Understand	3: Apply
4: Analyze	5: Evaluate	6: Create