P P SAVANI UNIVERSITY

Second Semester of B. Tech. Examination

May 2019

SEME1040 Concept of Engineering Drawing

16.05.2019, Thursday **Time: 12:30 PM to 3:00 PM** **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 **Attempt Any Five** **[05]**

(i) Which one of the following is not a reduction Scale??
(a) 1:1 (b) 5/320 (c) 1:200 (d) 5:6

(ii) If the value of Eccentricity is not equal to 1 curve will be_____
(a) Ellipse or Circle (b) Parabola or Ellipse
(c) Parabola or Hyperbola (d) Ellipse or Hyperbola

(iii) A cylinder standing on the HP is cut by a vertical plane parallel to the axis and away from it. The shape of the section will be
(a) Rectangle (b) Circle (c) Ellipse (d) Hyperbola

(iv) A curved traced out by a point which moves uniformly both about the centre and at the same time away or towards the center is known as
(a) Involute (b) Cycloid (c) Archemedian spiral (d) None of above

(v) To draw the leader line, which type of the following line is used?
(a) Continuous thick line (b) Continuous thin wavy line
(c) Long chain thin line (d) Continuous thin line

(vi) A French curve is used to draw
(a) Circles (b) orthographic projections (c) Right circular cone (d) Smooth free form curve

(vii) Which type of line is a part of a dimension?
(a) Break lines (b) Phantom lines
(c) Extension lines (d) Cutting plane lines

Q - 2 (a) A ball was thrown from the boundary in cricket ground, reached a maximum height of 50 m and travels a horizontal distance of 100 m. Name and traces the path of ball. **[05]**

Q - 2 (b) A wheel of diameter 70 cm, rolls on a straight horizontal road. Draw the locus of a point P on the periphery of the wheel for one revolution of the wheel, if P is initially on the road. Name the curve. **[05]**

OR

Q - 2 (a) Draw an Archimedean spiral of 1.5 convolutions, the greatest and least radii being 100 mm and 10 mm respectively. Draw tangent and normal to the spiral at any point on the curve. **[05]**

Q - 2 (b) Draw an ellipse having major axis 140 mm and minor axis 90 mm by using concentric circle method. **[05]**

Q - 3 (a) A string is unwound from a circle of 56 mm diameter. Draw the locus of end of string P for unwounding the string's one turn. String is kept tight during unwounding. Draw tangent and normal to the curve at any point. **[05]**

Q - 3 (b) Construct a plain scale of R.F. = 1:40 to show meters and decimetres and long enough up to 10 meter. Indicate 7.4 m distance on scale. **[05]**

OR

Q - 3 (a) The distance between Surat and Bharuch is 100 km and it is represented on a certain map by a line 2.5 cm long. Find the R.F. of the scale of the map. Draw its diagonal scale showing single kilometer and long enough to measure upto 600 km. Indicate a distance of 573 km on this scale. **[05]**

Q - 3 (b) Construct the hyperbola if the distance between the focus from the directrix is 65 mm and the eccentricity is 3/2. Draw the tangent and the normal to the ehyperbola at given point. **[05]**

Q - 4 **Attempt any one.** **[05]**

(i) Differentiate in between unidirectional system and Aligned system of dimensioning.

(ii) Define the following curves.

(a) Archimedean Spiral (b) Logarithmic Spiral

(c) Epicycloid (d) Hypocycloid

SECTION – II

Q - 1 **Attempt Any Five** **[05]**

(i) In a third angle projection method, right hand side view of an object is drawn _____ front view.

(a) Left side of (b) Right side of (c) Rear side of (d) None of above

(ii) The object in orthographic projection may have _____ views

(a) 4 (b) 3 (c) 2 (d) 1

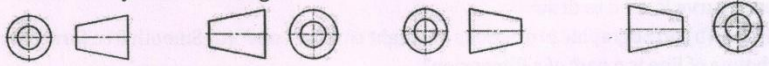
(iii) Fourth angle projection is not used because

a) Front view is above reference line and top view is below reference line
b) Top view is above reference line and front view is below reference line
c) Front view and top view both overlap on each other and below reference line
d) iv) Front view and top view both overlap on each other and above the reference line

(iv) In first angle projection _____ is between _____ and _____.

a) Object, Observer, Projection Plane
b) Projection Plane, Object, Observer,
c) Observer, Object, Projection Plane

(v) Which one is the Symbol of 3rd angle?

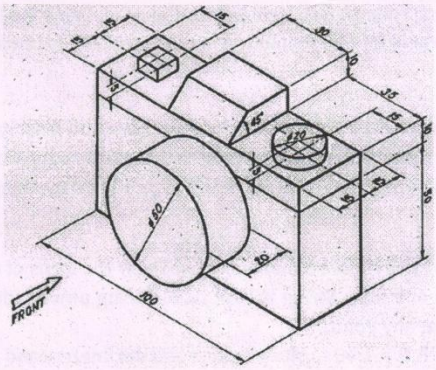


a) b) c) d)

(vi) What is isometric scale equation?

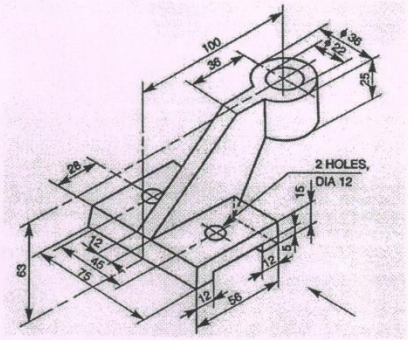
(vii) What is Plane of Projection?

Q - 2 (a) Using First angle projection method draw (1) Front view (2) Top view and (3) RHSV. All dimensions are in mm. **[10]**

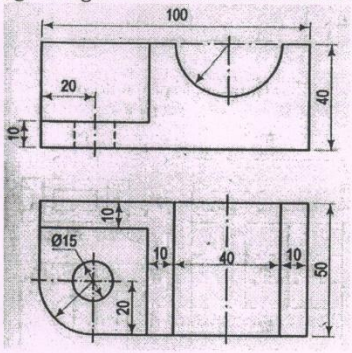


OR

Q - 2 (a) Using First angle projection method draw (1) Front view (2) Top view and (3) RHSV. All dimensions are in mm. **[10]**

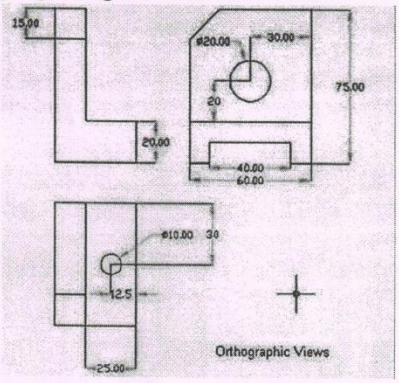


Q - 3 (a) Draw isometric drawing of given figure. All dimensions are in mm. **[10]**



OR

Q - 3 (a) Draw isometric drawing of given figure. All dimensions are in mm. **[10]**



Q - 4 **Attempt any one.**

(i) Differentiate between Isometric View and Isometric Projections and Construct the isometric scale. **[05]**

(ii) Difference between 1st and 3rd angle projection method and also explain why 2nd and 4th angle projection method not used? **[05]**

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