GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–I &II (NEW) EXAMINATION – SUMMER-2019

Subject Code: 2110013   **Date: 18/06/2019**

Subject Name: Engineering Graphics

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

Instructions:
1. Question No.1 is compulsory. Attempt any four out of remaining six questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

		Marks

Q.1   **Objective Questions (MCQ)**

(a)   **07**

1. In a scale 4 cm line represents 12 mm, and then what will be its RF?
   - a)   2:15   b)   15:2
   - c)   10:3   d)   3:10
2. Hatching lines are drawn at_____ angle.
   - a) 30°   b) 45°   c) 60°   d) 75°
3. If the cone is cut by an inclined plane such that all generator of cone will be cut then what shape will be created in its cross section?
   - a)   Circle   b)   Ellipse
   - c)   Parabola   d)   Triangle
4. If the locus of a point is outside the periphery of a circle and that circle rolls outside another circle then which curve will be traced by that point?
   - a)   Inferior Epytrochoid   b)   Epycycloid
   - c)   Supoerior Epytrochoid   d)   Superior Hypotrochoid
5. If the line is parallel to HP and perpendicular to VP then what will be its FV?
   - a)   Line with True length   b)   Line with reduced length
   - c)   Point   d)   None of these
6. The FV of a elliptical plane may be
   - a)   Ellipse   b)   Line
   - c)   Circle   d)   All of these
7. What will be isometric length in isometric drawing if its TL is 35 mm?
   - a)   28.56   b)   35
   - c)   42.89   d)   25.38

(b)   Answer the following questions.   **07**
1. If the object is cut by a plane which is parallel to VP then in which view the cutting plane will be seen as line?
2. Classify the scale based on RF.
3. What are the applications of chain thin line?
4. Draw a symbol of First angle projection method.
5. Which curve is having eccentricity is equal to 1?
6. Explain any one system of dimensioning.
7. Define Spiral

Q.2 **(a)** The actual length of 500m is represented by a line of 15cm on a drawing. Construct a diagonal scale to read up to 400 m. Mark on the scale a length of 349 m.   **03**

(b) Construct an ellipse when the major axis is 110 mm and minor axis is 70 mm long by using concentric circle method.   **04**
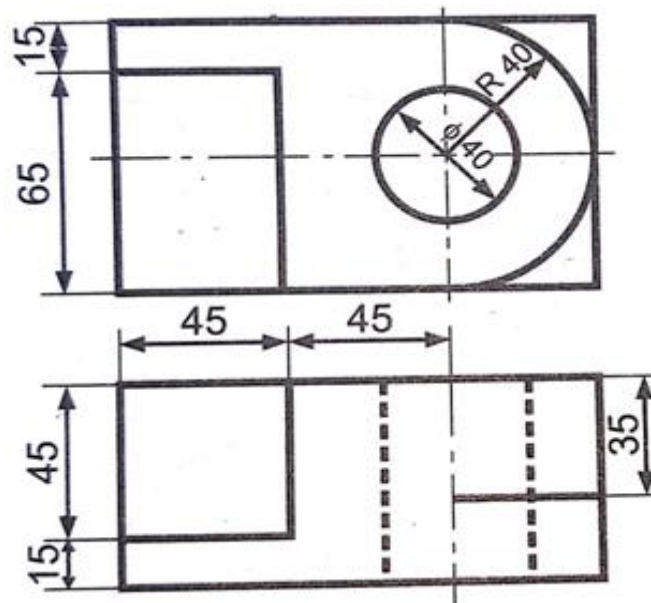
(c)	Draw an epycycloid with rolling circle diameter as 60 mm and directing circle diameter as 180 mm. Draw normal and tangent at any point on the curve.	**07**

Q.3 **(a)** The distance between end projectors of line AB is 45 mm. Its end A is 20 mm below HP and 10 mm behind VP. Point B is 55 mm above HP and 60 mm in front of VP. Determine its true length of line AB.   **07**

(b) Draw the path of free end of string which is wound around a circle of 40 mm diameter. Also draw normal and tangent at any point on the curve. Name the curve.   **07**

Q.4 **(a)** A square plate of 30 mm side is resting on the HP on one of its corner in such a way that its surface makes an angle 45° to the HP. Draw the projections of the square plate when plan of diagonal passing through the corner on the HP makes 30° to the VP.   **07**

(b) A square pyramid, side of base 40 mm and axis length 60 mm is kept on the HP on one of its base edge such that its axis makes 30º with the HP. Draw the projection of the pyramid when the base edge which is on the HP makes 45º with the VP keeping apex of the pyramid away from the observer.   **07**

Q.5 **(a)** Draw the projection of following points.   **03**
1. Point P is 20 mm above HP and 20 mm behind VP

2. Point Q is 10 mm below HP and 30 mm behind VP

3. Point R is 15 mm below HP and 20 mm in front of VP

(b) A line PQ is 80 mm long is inclined at an angle of 45° to HP and 30° to VP. One of its end points P is 20 mm above HP and 30 mm in front of VP. Draw the projection of line PQ.   **04**

(c) A cone having a diameter of base 80 mm and height 90 mm is resting with base on the HP. It is cut by AIP inclined at 45° to the HP. The cutting plane passes through the mid point of the axis of the cone. Draw the FV, Sectional TV and true shape of the section.   **07**

Q.6 **(a)** Differentiate between First angle and Third angle projection method.   **03**

(b) One object is shown in figure 1. Draw Front View looking from X direction of figure 1   **04**

(c) Draw Top View and Right hand Side view of figure 1.   **07**
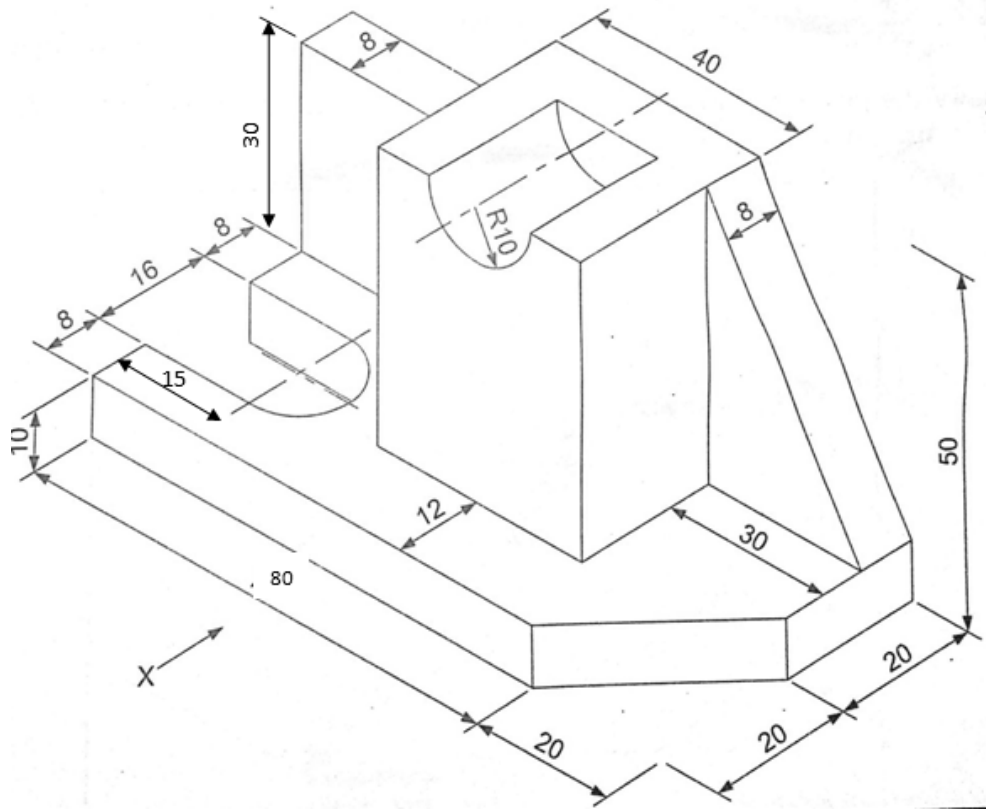
Fig 1

Q.7 **(a)** Construct isometric scale and find the isometric length for 35 mm and 50 mm true length from isometric scale. **04**

(b) Draw isometric drawing of figure **2**. **10**

Fig 2

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