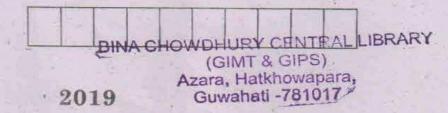
CE 171107

25/1/19

Roll No. of candidate



B.Tech. 1st Semester End-Term Examination

ENGINEERING GRAPHICS - I

(New Regulation & New Syllabus)

(w.e.f. 2017-2018)

Full Marks - 70

Time - Three hours

The figures in the margin indicate full marks for the questions.

Answer Q.No. 1 and any four from the rest.

1. Fill in the blanks:

 $(10 \times 1 = 10)$

- (i) A cube of 1 m³ volume is represented by a cube of 1 cm³ in drawing. The RF. used is ———.
- (iii) In aligned method of dimensioning, we always read the dimensions from ———.
- (v) The extension lines while dimensioning can be drawn by ———— pencil.

[Turn over

- (vi) When measurements are required in three units, ————————— scale is used.
- (vii) A trochoid is a curve generated by a point on the circumference of a circle as the circle rolls along ————.
- (viii) In case of angle projection method, the plane is in between the observer and the object.
- (ix) In case of angle projection method, the object is in between the observer and the plane.
- (x) The point of interaction of a line with the horizontal plane is called the ______.
- 2. (a) Draw the following sentence using single stroke vertical block letters of height 25 mm.
 - (b) Draw the same sentence using inclined block letters of the same height. (8 + 7 = 15)
- 3. (a) Construct a scale of R.F. = 1:250 to show decimetre and long enough to measure up to 30 meters. Indicate a distance of 28.9 m on it.
 - (b) Construct a plain scale of 1:14 to read feet and inches and long enough to measure 7 feet. Show a distance of 5 feet 10 inches on it. (8 + 7 = 15)

- 4. (a) Draw a parabola when the distance between its focus and directrix is 50 mm. Also draw a tangent and a normal at 60 mm from the directrix.
 - (b) Construct an ellipse having a major and minor axis of 110 mm and 70 mm respectively using 'Concentric circles method'. (7 + 8 = 15)
- 5. (a) A bicycle wheel of 50 mm diameter is rolling over a straight path. Draw the curve traced curved by a point on the circumference of the wheel. Also draw a tangent and a normal to the curve at a point 35 mm above the path.
 - (b) Draw the locus of a point that moves in such a way that the ratio of its distance from a fixed point to a fixed straight line is 2/3. The actual distance between the fixed line and the fixed point is 50 mm.
 (8 + 7 = 15)
- 6. (a) Draw the projections of the following points on a common reference line, keeping the distance between their projectors 30 mm apart.
 - (i) Point A in the V.P. and 50 mm below H.P.
 - (ii) Point B in the H.P. and 30 mm behind V.P.
 - (iii) Point C 20 mm below H.P. and 50 mm in front of V.P.
 - (iv) Point D 10 mm below H.P. and 30 mm behind V.P.
 - (b) Draw the projections of a line 70 mm long line PQ, situated in the V.P. and inclined at 30° to the H.P. The end P of the line is 25 mm above the H.P. (8+7=15)

- 7. (a) A square plate ABCD with 40mm sides has it's corner A in the H.P. Its diagonal AC is inclined at 45° to the H.P. while the diagonal BD is parallel to the H.P. and inclined at 30° to the V.P. Draw its projections.
 - (b) A hexagonal plane with 30 mm side has its corner A in the H.P. The surface of the plane is inclined at 45° to the H.P. and the diagonal containing the corner A is inclined at 30° to the V.P. Draw its projections. (7 + 8 = 15)