*R20 Regulation* *Subject code:3E1AE*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A' Grade)

**B.Tech I Semester Regular/Supplementary Examinations, April 2022**

# Engineering Graphics

**(Common to CE ,ME & CSE(DS))**

***Maximum Marks: 70*** Date:09.05.2022 Duration: 3 hours

**Note: 1. It consists of 5 Units. Answer any one full question from each unit which carries 14M.**
**2. Each question carries 14 marks and may have a, b, c, d as sub questions.**

Answer All the following questions. **(14MX 5=70Marks)**

1 A fixed point is at 40 mm from a fixed straight line. Draw the curve whose eccentricity is one. Name the curve and draw the tangent and normal at any point on the curve. [14]

OR

2 Draw the involute of a circle of diameter 40 mm. Draw the tangent and normal to the involute at any point on the curve. [14]

3 A line LM 65 mm long has its end L, 15 mm above the HP and 15 mm in front of VP. It is inclined at 55° to HP and 35° to VP. Draw its projections. [14]

OR

4 A square lamina of side 35 mm rests on the HP on one of its sides and this side is inclined at 35° to the VP. The surface of the plate makes an angle of 40° with the HP. Draw the front and top views of the plate. [14]

5 Draw the projections of a pentagonal prism whose base side is 25 mm and axis 70 mm long. It is lying on the HP on one of its base edges, such that the axis is parallel to VP and inclined at 40° to HP. [14]

OR

6 A square pyramid of base side 30 mm and axis length 70 mm is lying on the HP on one of its triangular faces with its axis parallel to the VP. Draw the top and front views of the pyramid. [14]

7 A cone of base diameter 35 mm and axis length 70 mm is resting with its base on HP. It is cut by a section plane perpendicular to the VP, parallel to and 10 mm away from one of its end generators. Draw its front view, sectional top view and true shape of the section. [14]

OR

8 Draw the development of the lateral surface of the lower portion of a cylinder which rests on of its base, having base diameter 50 mm and axis height 80 mm. The solid is cut by a section plane inclined at 30° to HP and perpendicular to VP, passing through the midpoint of the axis. [14]

9 A frustum of a hexagonal pyramid has a side of base- 30 mm and side on top -15 mm for a height of 40 mm rests on HP. Draw the isometric view. [14]

OR

10 Draw the orthographic views of the following object. [14]

The dimensions are in mm.