R22 Regulation *Subject code:4E1DC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech I Semester Regular Examinations, March/April 2023

Computer Aided Engineering Graphics

(IT)

Maximum Marks: 60 Date:13.04.2023 Duration: 3 hours

Part-A

All the following questions carry equal marks (10x1M=10 Marks)

1. a State the applications of cycloidal curves in Engineering.
   b Which command is used to break a Polyline into individual lines and arcs in CAD?
   c What is trace of a plane?
   d Mention the advantage of auxiliary plane method over change of position method.
   e Differentiate frustum and truncated solid.
   f How is a triangular pyramid different from tetrahedron?
   g What will be the development of lateral surface of a cone?
   h Write the applications of development of surfaces in Engineering
   i State the different methods of drawing isometric projection.
   j Define isometric axes.

Part-B

Answer All the following questions. (10M X 5=50Marks)

2 The focus of a conic is 40 mm from the directrix. Draw the locus of a point 'P' moving in such a way that its distance from the directrix is equal to its distance from the focus. Name the curve. Draw a tangent to the curve at a point 50 mm from the directrix. (10M)

OR

3 Trace the path of a point on a circumference of a Circle of diameter 50mm moving on a straight line. Draw tangent and normal at a distance 40mm from the base line. (10M)

4 The top view of 80 mm long line 'AB' measures 65 mm, while the length of its front view is 55 mm. End A is in HP and 12 mm in front of VP. Draw the projections and find its inclinations with VP and HP. (10M)

OR

5 A hexagonal lamina of side 20 mm rests on the HP on one of its sides inclined at 45° to the VP. The surface of lamina makes an angle of 30° with HP. Draw the front and top views of lamina. (10M)

6 A triangular prism of base side 30 mm and axis length 60 mm rests on the HP on one of its base edges with its axis inclined at 60° to HP and parallel to VP. Draw the front and top views. (10M)

OR

7 A cube of side 35 mm is placed and cut by a plane such that the true shape of the section is a regular hexagon. Draw the sectional front and top views of cube and find the inclination of section plane with HP. (10M)

8 A hexagonal pyramid of base side 25 mm and altitude 50 mm is resting vertically with its base on ground such that two of the sides of base are perpendicular to VP. It is cut by a section plane perpendicular to VP and inclined at 40° to HP. The cutting plane bisects the axis of pyramid. Draw the development of lateral surfaces of pyramid. (10M)

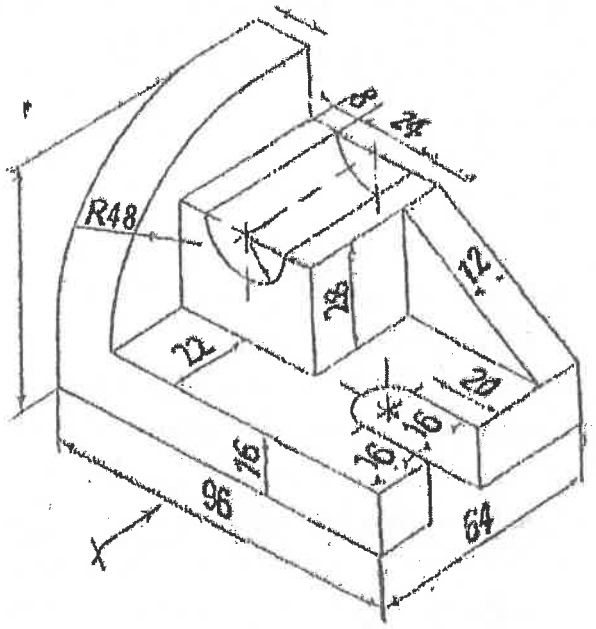
OR

9 Draw the development of the lateral surface of the lower portion of a cylinder of diameter 50 mm and axis 70 mm when sectioned by a plane inclined at 40° to HP and perpendicular to VP and bisecting axis. (10M)

10 Draw the isometric view of frustum of a cone of height 30 mm, base diameter 34 mm and top diameter 20 mm, when it is placed centrally over a square slab of side 50 mm and thickness 10 mm. (10M)

OR

11 Draw the orthographic views (front, top and right side views) of the object. (10M)



The dimensions are in mm.