R22 Regulation *Subject code:4E1DA & 4E1DB*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech I Semester Regular Examinations, April 2023

Computer Aided Engineering Graphics

(Common to EEE & CSE)

Maximum Marks: 60 Date:15.04.2023 Duration: 3 hours

Part-A

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

1. a State the application of following conic curves in Engineering: Ellipse and Parabola.
   b Which AutoCAD command is used to determine the precise volume of a complex (or simple) 3D Solid part?
   c State the assumptions made in orthographic projection.
   d When will a straight line do not have vertical trace?
   e What are solids of revolution?
   f Why solids are sectioned?
   g Mention the significance of development of solid surfaces.
   h What are the methods of development?
   i Distinguish between isometric view and isometric projection.
   j List the different methods of drawing isometric projection.

Part-B

Answer All the following questions. (5X10M=50Marks)

2 Draw a hyperbola when the eccentricity is 3/2 and the distance between focus and directrix is 50 mm. Also draw tangent and normal to the curve at a point 30 mm from focus. [10M]

OR

3 Draw an epi-cycloid of a circle of 25 mm radius rolling outside a circle of diameter 175 mm for one complete revolution. Draw tangent and normal to the curve at any point from the centre of directing circle. [10M]

4 A line *AB* 80 mm long has its end *A* 20 mm above HP and 30 mm in front of VP. It is inclined at 30° to HP and 45° to VP. Draw the projections of the line and find apparent lengths and apparent inclinations. [10M]

OR

5 A square ABCD of 50 mm side has its corner A in the HP, its diagonal AC inclined at 30^0 to the HP and the diagonal BD inclined at 45^0 to the VP and parallel to the HP. Draw its projections. [10M]

6 Draw the projections of a cone of base diameter 30 mm and axis 50 mm, resting on a point of its base circle in HP with the axis making an angle of 45° with the HP and parallel to VP. [10M]

OR

7 Draw the projection of a hexagonal prism of a base side 25mm and axis height 70mm has it's axis inclined at 45 degrees to HP and 30 degrees to VP. [10M]

8 A pentagonal prism, side of base 25 mm and altitude 50 mm, rests on its base on the HP such that an edge of the base is parallel to VP. Draw it's development. [10M]

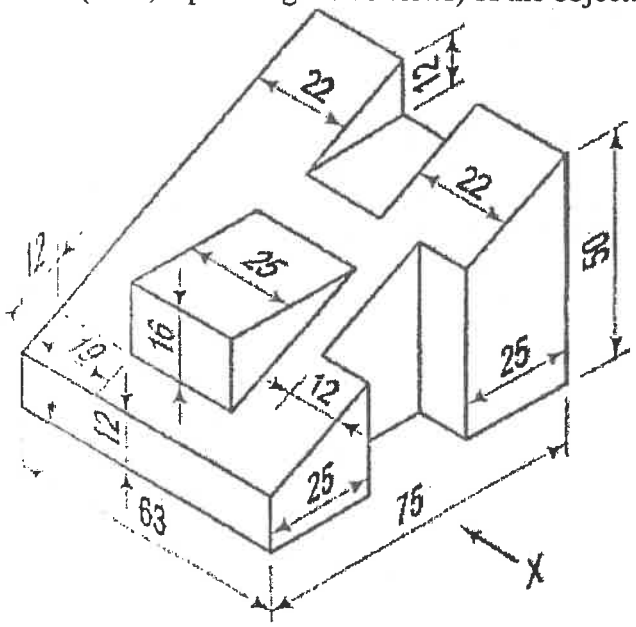
OR

9 Draw the development of the lateral surfaces of a square pyramid, side of base 25 mm and height 50 mm, resting with its base on HP and an edge of the base parallel to VP. [10M]

10 A sphere of diameter 30 mm rests on the frustum of a hexagonal pyramid of base 30 mm, top face 18 mm side and height 50 mm such that their axes coincide. Draw the isometric projection of the combined solids. [10M]

OR

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



Dimensions are in mm.