Code No: 181AG **R22**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech I Year I Semester Examinations, September - 2023

COMPUTER AIDED ENGINEERING GRAPHICS

(Computer Science and Engineering)

Time: 3 Hours **Max. Marks: 60**

Note: This question paper contains two parts A and B.
i) **Part- A** for 10 marks, ii) **Part - B** for 50 marks.

- Part-A is a compulsory question which consists of ten sub-questions from all units carrying equal marks.
- Part-B consists of **ten questions** (numbered from 2 to 11) **carrying 10 marks each**. From each unit, there are two questions and the student should answer one of them. Hence, the student should answer five questions from Part-B.

PART- A

(10 Marks)

1.a)	What are conic sections and why are they called so?	[1]
b)	Name the method to draw the parabola?	[1]
c)	Draw the symbol of first angle and third angle projection.	[1]
d)	Draw the projections of a plane perpendicular to V.P and parallel to H.P.	[1]
e)	Write the different types of solids.	[1]
f)	What is the difference between prism and pyramid?	[1]
g)	Name the method used for drawing the development of pyramid and cone.	[1]
h)	Differentiate between singly curved surface and doubly curved surface.	[1]
i)	Name the methods preferred for drawing ellipse in isometric projections.	[1]
j)	What is an isometric view?	[1]

PART - B

(50 Marks)

2.a) Draw a scale of 1:50 showing metres and decimeters and to measure up to 6 metres.

b) Draw a hypocycloid generated by a rolling circle of 60 mm diameter for its one complete revolution. The radius of the directing circle is 100 mm. Draw a tangent and a normal to the hypocycloid at 50 mm from the centre of the directing circle. [5+5]

OR

3.a) Draw an ellipse when the distance of its focus from its directrix is 50 mm and eccentricity is 2/3. Also, draw a tangent and a normal to the ellipse at a point 70 mm away from the directrix.

b) Construct a diagonal scale of 1/48 showing metres, decimeters and centimeters and to measure up to 6 m. Mark a length of 3·76 m on it. [5+5]

4. A pentagonal lamina of 30 mm side rests on the H.P. on one of its corners with its surface inclined at 30º to the H.P. Draw its projections when the side opposite to the corner in the H.P. is parallel to the V.P. [10]

OR

5. The front view of a line AB measures 65 mm and makes an angle of 45º with XY. A is in the H.P. and the V.T. of the line is 15 mm below the H.P. The line is inclined at 30º to the V.P. Draw the projections of AB and find its true length and inclination with the H.P. Also, locate its H.T. [10]

6. A hexagonal prism of base 25 mm side and axis 45 mm long is positioned with one of its base edges on H.P. such that the axis is inclined at 30º to H.P. and 45º to the V.P. Draw its projections of the prism by change of position method. [10]

OR

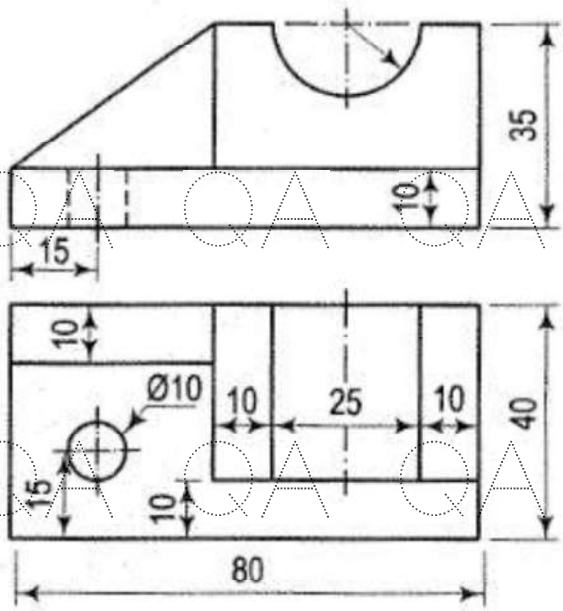
7. A cylinder of 50 mm diameter and 70 mm long is resting on H.P. with its axis inclined at 30º to H.P. and parallel to V.P. A section plane inclined at 45º to V.P. passes through the axis at 25 mm from one end of it. Draw the projections of the cut solid. Also obtain the true shape of the section. [10]

8. A cone with a 60 mm base diameter and 75 mm long axis stands on its base on the H.P. An auxiliary vertical plane having H.T. inclined at 45º to the V.P. cuts the cone, at a distance of 12 mm away from the axis. Draw the sectional front view and develop the lateral surface of the retained cone. [10]

OR

9. A cube of 50 edge, stands on one of its faces on H.P, with the vertical face equally inclined to V.P. A hole of 35 diameter is drilled centrally through the cube such that, the axis of the hole is perpendicular to V.P. Draw the development of the cube. [10]

10. Draw the isometric view of the model of steps, two views of which are shown in below figure 1. [10]

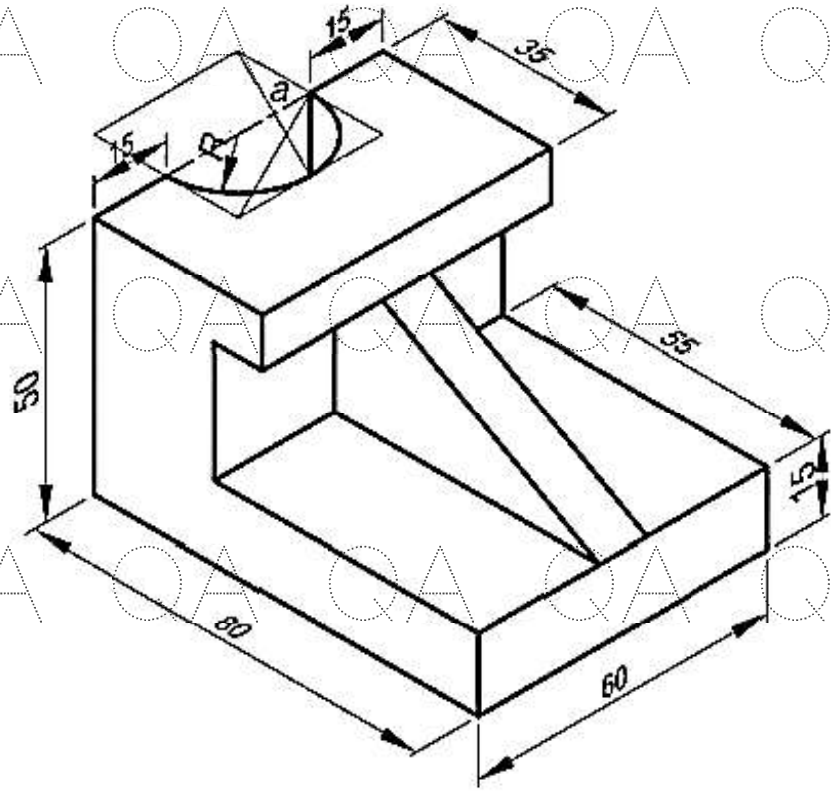


All dimensions are in mm

Figure 1

OR

11. Pictorial view of an object is shown in Figure 2. Using first-angle projection, draw its (a) front view in the direction of arrow, (b) top view and (c) right-hand side view. [10]



All dimensions are in mm

Figure 2

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