Code No: 182AV **R22**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

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

COMPUTER AIDED ENGINEERING GRAPHICS

(Common to CSE(AI&ML), CSE(IOT), AI&DS, AI&ML)

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 is reduced scale?	[1]
b)	What is enlarged scale?	[1]
c)	Draw the projection of the point when G is both in HP and VP.	[1]
d)	What is a trace of a line?	[1]
e)	What is section of solid and section plane?	[1]
f)	What is the difference between cylinder and cone?	[1]
g)	Name the method used for obtaining the development of cone.	[1]
h)	Name the method used for obtaining the development of sphere.	[1]
i)	What is the ratio between true lengths to isometric length?	[1]
j)	What do you mean by isometric axes	[1]

PART - B

(50 Marks)

2.a) The vertex of a hyperbola is 65 mm from its focus. Draw the curve if the eccentricity is 3/2. Draw a normal and a tangent at a point on the curve, 75 mm from the directrix.

b) Construct a diagonal scale of R.F. = 1/6250 to read upto 1 kilometre and to read metres on it. Show a length of 653 metres on it. [5+5]

OR

3.a) Show by means of a drawing that when the diameter of the directing circle is twice that of the generating circle, the hypocycloid is a straight line. Take the diameter of the generating circle equal to 50 mm.

b) Draw a diagonal scale of R.F. = 3/100 showing metres, decimeters and centimetres, and to measure upto 5 metres. Show the length of 3.69 metres on it. [5+5]

4. The front view and top view of a straight line PQ measures 50 mm and 65 mm respectively. The point P is in the H.P. and 20 mm in front of the V.P. and the front view of the line is inclined at 45^0 to the reference line. Determine the true length of PQ, true angles of inclination with the reference planes. [10]

OR

5. A pentagonal plate of 45 mm side has a circular hole of 40 mm diameter in its centre. The plane stands on one of its sides on the H.P. with its plane perpendicular to V.P and 45^0 inclined to the H.P. Draw the projections. [10]

6. A pentagonal prism, having a base with a 25 mm side and a 60 mm long axis, has its axis inclined at 60^0 to the H.P. and 30^0 to the V.P. The farthest shortest edge of the prism is parallel to and 90 mm above the H.P. while the nearest corner of the prism is 10 mm in front of the V.P. Draw its projections. [10]

OR

7. A thin cylindrical glass vessel, with a 50 mm base diameter and a 75 mm height, is resting on the H.P. contains water up to 45 mm from its base. The vessel is then tilted so that water is just at the point of tricking out. Draw the projections of the glass in its tilted position, showing clearly the water surface. [10]

8. Draw the development of lateral surface of the part P of the pentagonal pyramid, shown in below figure 1. [10]

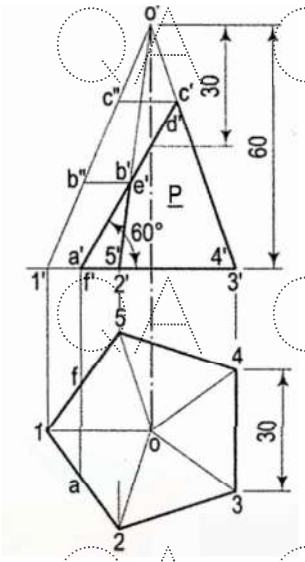

Figure 1

OR

9. Draw the development of lateral surface of the part P of the hexagonal pyramid, shown in below figure 2. [10]

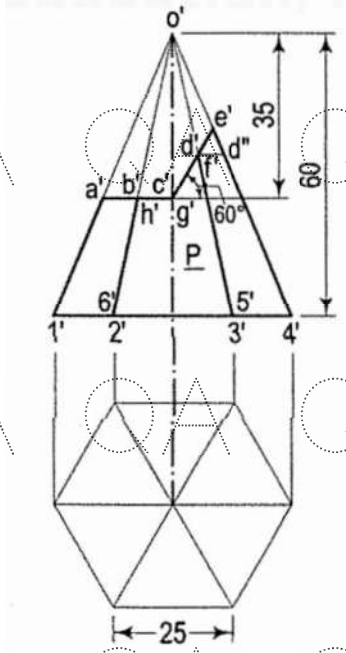

Figure 2

10. Draw the isometric view of the casting shown in two views in the figure 3. All dimensions are in mm. [10]

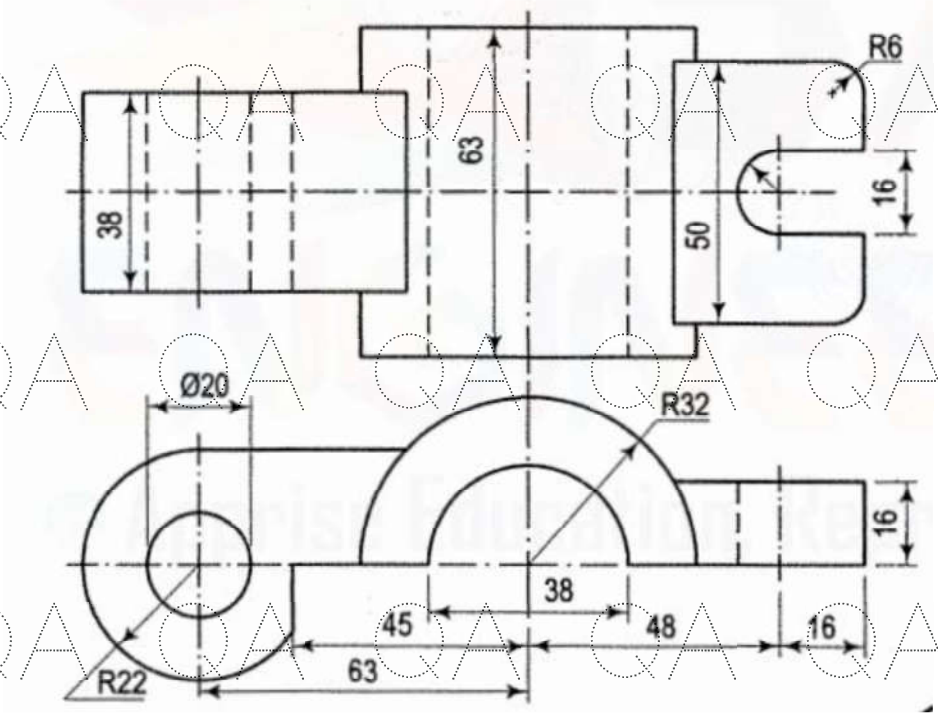

Figure 3

OR

11. Draw the isometric view of the casting shown in two views in the figure 4. All dimensions are in mm. [10]

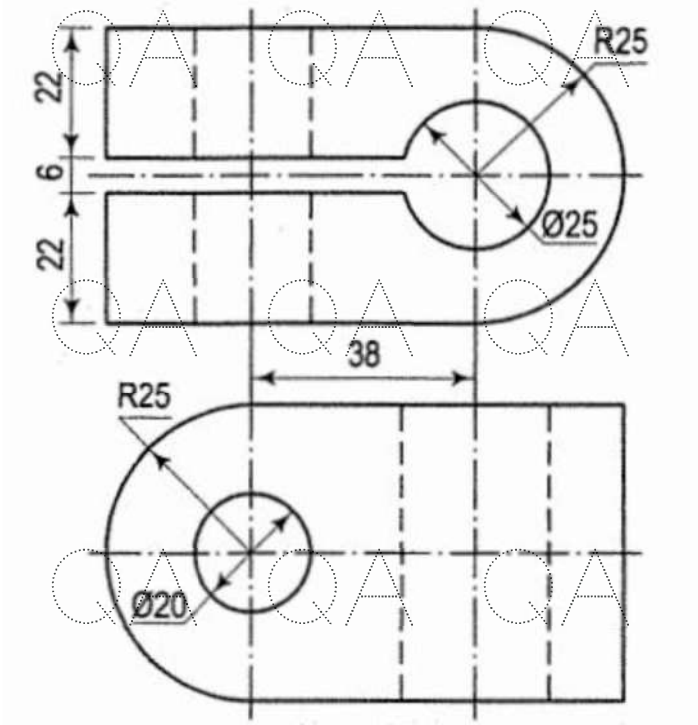

Figure 4

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