

Code No.: ME104ES

R20

H.T.No.

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**CMR ENGINEERING COLLEGE: : HYDERABAD**  
**UGC AUTONOMOUS**  
**I-B.TECH-I-Semester End Examinations (Supply) - January- 2022**  
**ENGINEERING GRAPHICS**  
**(Common to ECE, CSM & MECH)**

[Time: 3 Hours]

[Max. Marks: 70]

**Note:** Question paper consists of 5 Units. Answer any one full question from each unit. Each question carries 14 marks.

(70 Marks)

1. a) Construct a parabola by using general method when the distance between focus and the directrix is 40 mm. [10M]  
b) Construct a plain scale to show meters when 1 centimeter represents 4 meters and long enough to measure up to 50 meters. Find the R.F. and mark on your scale a distance of 36 meters. [4M]

**OR**

2. a) Construct an ellipse by using general method when the distance of the focus from the directrix is equal to 50 mm and eccentricity is  $2/3$ . [10M]  
b) Construct a diagonal scale of R.F. =  $1/4000$  to show meters and long enough to measure up to 500 meters and mark on your scale a distance of 374 meters. [4M]
3. a) A point P is 15 mm above the H.P. and 20 mm in front of the V.P. Another point Q is 25mm behind the V.P. and 40 mm below the H.P. Draw projections of P and Q keeping the distance between their projectors equal to 90 mm. [7M]  
b) An 80 mm long line AB is inclined at  $45^\circ$  to the VP. Its end A lies on the HP and 15 mm in front of the VP. The top view of line measures 60 mm. Draw its projections and determine its inclination with the HP. [7M]

**OR**

4. a) Draw the projections of the following points in third quadrant when the (i) Point A lies in the HP and 20 mm away from the VP. (ii) Point B lies in the VP and 30 mm away from the HP. [7M]  
b) A rectangle PQRS of size  $60 \times 40$  mm has a corner on the HP and 20 mm away from the VP. All the sides of the rectangle are equally inclined to the HP and parallel to the VP. Draw its projections. [7M]
5. A square prism of a side of the base 40 mm long and the axis 65 mm long. The base of the prism is on H.P. and a side of the base is inclined at  $30^\circ$  to the V.P. and the axis 50 mm in front of the V.P. Draw the projections of the solids. [14M]

**OR**

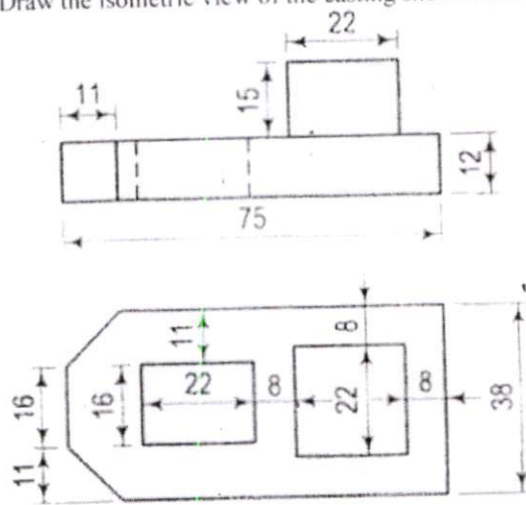
6. Draw the projections of a cone, base 50 mm diameter and axis 75 mm long, lying on a generator on the ground with the top view of the axis parallel to V.P. [14M]
7. A cone of base 50 mm diameter and height 60 mm rests with its base on H.P. a section plane bisects the axis of the cone and inclined at  $30^\circ$  to HP perpendicular to VP. Draw the deployment of lateral surface of the truncated cone. [14M]

**OR**

8. A pentagonal pyramid, base 30 mm side and axis 65 mm long has its base horizontal and an edge of the base parallel to the V.P. A horizontal section plane cuts it at a distance of 25 mm above the base. Draw the deployment of lateral surface of the pentagonal pyramid. [14M]

9. Draw the isometric view of the casting shown in two views below.

[14M]

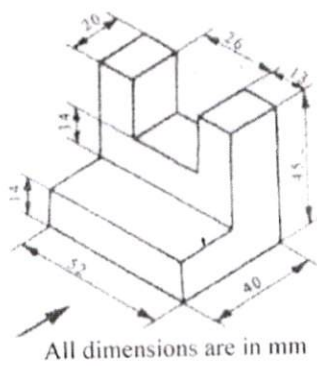


All dimensions are in mm

OR

10. Draw the front view and top view of the given isometric view of the casting shown in figure.

[14M]



All dimensions are in mm

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