

[Total No. of Questions - 9] [Total No. of Printed Pages - 3]

Dec.-22-0111

ME-102 (Engineering Drawing & Graphics)

B. Tech. 2nd (CBCS)

Time : 3 Hours

Max. Marks : 40

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt one question each from first four Units while questions of Unit-V are compulsory.

#### UNIT - I

1. Draw the orthographic projections of the following points:
  - (a) Point P is 10 mm. above H.P and 45 mm. in front of V.P.
  - (b) Point Q is 35 mm. above H.P and 35 mm. behind V.P.
  - (c) Point V is in V.P and 45 mm. above H.P.
  - (d) Point W is in H.P and 43 mm. in front of V.P. (4×2=8)
2. A pentagon of sides 30mm rests on the ground on one of its corners with the sides containing the corners being equally inclined to the ground. The side opposite to the corner on which it rests is inclined at 30 degrees to the VP and is parallel to the HP. The surface of the pentagon makes 10 degrees with the ground. Draw the top and front views of the pentagon. (8)

#### UNIT - II

3. A cone of base diameter 40 mm and axis height 60 mm rests on the ground on a point of its base circle such that the axis of the cone is inclined at 40 degree to the HP and 30 degree to the VP. Draw its front and top views. (8)

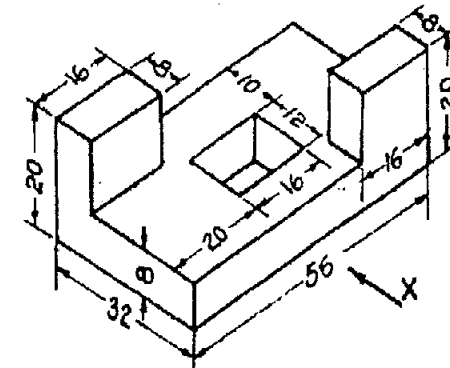
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4. A cube of 40 edge, is resting on H.P on one of its edges, with a face parallel to V.P. One of the faces containing the resting edge is inclined at  $30^\circ$  to H.P. The solid is cut by a section plane, parallel to H.P and 10 above the axis. Draw the projections of the remaining solid. (8)

#### UNIT - III

5. Draw an isometric view of a cylinder, with a 50mm base diameter and a 70mm long axis when (a) The base is on the HP (b) when one of the generators is on the HP. (8)
6. Draw the front view, top view and side view of the figure shown below. All dimensions are in mm.



(8)

#### UNIT - IV

7. A cone of base diameter 80 mm and axis 100 mm is resting on its base on the HP. It is completely penetrated by a cylinder of base diameter 40 mm. The axes of the solids intersect each other at right angles, 30 mm above the base of the cone. Draw the projections of the combination and show curves of intersection. (8)

[P.T.O.]

8. A hexagonal prism of base side 30 mm and height 70 mm is resting on its base on the HP with a side of the base perpendicular to the VP. The prism has a cylindrical hole of diameter 40 mm drilled centrally such that the axis of the hole is perpendicular to the VP. Draw the development of the lateral surface of the prism. (8)

### UNIT - V (Compulsory)

9. (a) Name different drawing instruments.  
 (b) What are applications of scales?  
 (c) What do you understand by the VT and HT of a section plane?  
 (d) Discuss some key features about the projection of points.  
 (e) A line of length 15 cm touching the vertical plane and perpendicular to it at a distance of 20 cm away from horizontal plane and 5 cm away from the profile plane. Which view gives the distance from line to profile plane is 5 cm? Explain.  
 (f) A square is held 30 degrees with horizontal plane and turned 30 degrees with respect to vertical plane keeping freehand. Draw the top view with earlier condition constant.  
 (g) Develop the surface of a simple cylinder. (8×1=8)  
 (h) Develop the surface of a right angle cone. (8×1=8)