2124

# B.E., First Semester
## ESC-X04: Engineering Graphics
### (Common with EEE, CIVIL, ECE)

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** *Attempt <u>five</u> questions in all, including Question No. 1 (Part-A) which is compulsory and selecting two questions each from Part B-C. Assume suitably the missing data, if any. All dimensions are in mm, if not mentioned otherwise. Supplement your answer with neat and labeled sketches wherever required. All software related questions must be answered with respect to AutoCAD software. All questions carry 10 marks.*

x-x-x

## Part-A

1   (i) What is the purpose of the Command Line Box in AutoCAD software?
    (ii) Explain the significance of dimension styles in AutoCAD software.
    (iii) Describe the principle of orthographic projections.
    (iv) What is the difference between a prism and a pyramid in terms of solids?
    (v) What are cutting plane lines and their purpose in sectioning solids?

## Part-B

2   The front view of a 125 mm long line PQ measures 75 mm and its top view measures 100 mm. Its end Q and the mid-point M are in the first quadrant, M being 20 mm from both the planes. Draw the projections of the line PQ.

3   A semi-circular plate of 80 mm diameter has its straight edge in the V.P. and inclined at 45° to the H.P. The surface of the plate makes an angle of 30° with the V.P. Draw its projections.

4   A rectangular block 75 mm x 50 mm x 25 mm thick has a hole of 30 mm diameter drilled centrally through its largest faces. Draw the projections when the block has its 50 mm long edge parallel to the H.P. and perpendicular to the V.P. and has the axis of the hole inclined at 60° to the H.P.

## Part-C

5   A pentagonal prism, base 28 mm side and height 65 mm has an edge of its base on the H.P. and the axis parallel to the V.P. and inclined at 60° to the H.P. A section plane, having its H. T. perpendicular to xy, and the V. T. inclined at 60° to xy and passing through the highest corner of the prism, cuts the prism. Draw the sectional top view and true shape of the section.

**P.T.O.**

6   Projections of a casting is given next. Please draw the isometric view of this casting.
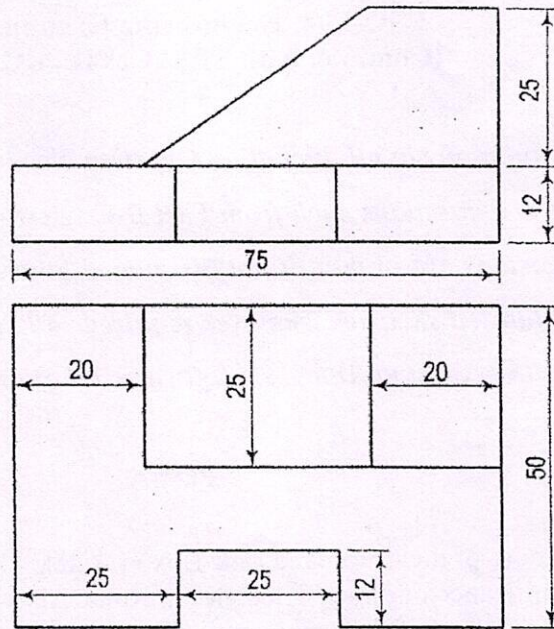


7   A square prism of 30 mm edges of the base and 60 mm length of the axis is resting on its base with two edges of the base inclined at 30° to the VP. It has a hole of 35 mm diameter cut through it. The axis of the hole is perpendicular to the VP and bisects the axis of the prism. Draw the projections and the development of the lateral surface of the prism with a hole.

x-x-x