**BT-I/D-21**            **41020**

ENGINEERING  DRAWING  AND  GRAPHICS
ME-105N  Opt.–I

Time : Three Hours]                    [Maximum Marks : 75

**Note** : Attempt *Five* questions in all, selecting at least *one* question from each Unit. Unless stated otherwise, the symbols have their usual meaning in context with the subject. Assume suitably and state, additional data required, if any.

## Unit I

1.  A stick 130 mm long is initially tangent to semicircle of 80 mm diameter at its left side corner. This stick now rolls over the circumference of semi-circle without slipping. Draw the locus of the end point of the stick, which is away from the semicircle and name the curve. **15**

2.  Draw the projections of straight line AB 60 mm long parallel to HP and inclined at an angle of 400 to VP. The end A is 30 mm above HP and 20 mm in front of VP. **15**

## Unit II

3.  A pentagonal plane ABCDE of 35 mm side has its plane inclined 50° to HP. Its diameter joining the vertex B to

the mid-point F of the base DE is inclined at 25° to the xy-line. Draw its projections keeping the corner B nearer to VP. **15**
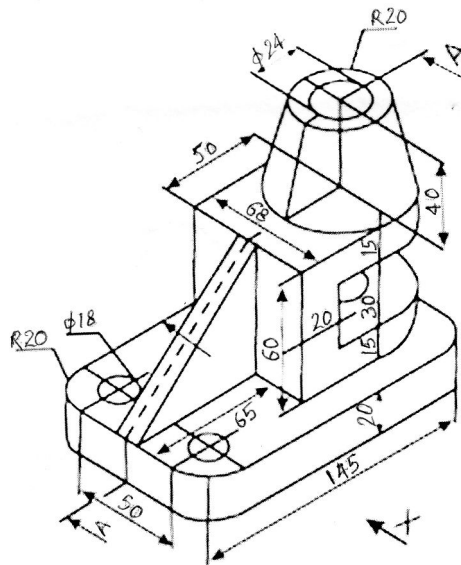
4. Draw the projections of a pentagonal prism, situated with a rectangular face parallel to and 10 mm above the HP, axis perpendicular to the VP and one base in the VP. Take side of the base 40 mm and the axis 65 mm long. **15**

## Unit III

5. A cone, base 65 mm diameter and axis 75 mm long, is lying on the H.P. on one of its generators with the axis parallel to the V.P. A section plane which is parallel to the V.P. cuts the cone 6 mm away from the axis. Draw the sectional front view and development of the surface of the remaining portion of the cone. **15**

6. A pentagonal prism of side of base 20 mm and height 50 mm stands vertically on its base with a rectangular face perpendicular to V.P. A cutting plane perpendicular to V.P. and inclined at 60° to the axis passes through the edges of the top base of the prism. Develop the lower portion of the lateral surface of the prism. **15**

## Unit IV

**7.** Draw the top, front and side views of the following object : **15**



**8.** Explain in detail, the following commands used in AUTOCAD : **15**

    (a)    Offset

    (b)    Extend

    (c)    Move.