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**MD/M-20** **398**

ENGINEERING DRAWING AND GRAPHICS

Paper–ME-401

Time : Three Hours] [Maximum Marks : 40

**Note :** There are nine questions in this paper. All questions carry equal marks. Attempt *five* questions in all. Question No. 1 is compulsory. Attempt remaining *four* questions by selecting *one* question from each unit.

## Compulsory Question

**1.** (a) What do you mean by Projection? 1

(b) What do you mean by traces of a line? Also define Vertical trace. 3

(c) Discuss the applications of Development of surface with suitable example. 2

(d) What do you mean by Absolute coordinate system used in AutoCAD? 2

## UNIT–I

**2.** (a) A point A is 40 mm in front of VP and is situated in the fourth quadrant. Its shortest distance from the intersection of VP and HP is 45 mm. Draw its projections. Also find distance from VP. 4

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(b) Differentiate first and third angle of projection system. 4

**3.** Draw the projections of the following points on the same XY line, keeping convenient distance between each projectors. Also state the quadrants in which they lie.

P – 25 mm above HP and 35 mm in front of VP.

Q – 30 mm above HP and 40 mm behind VP.

R – 40 mm above HP and on VP.

S – 35 mm below HP and 30 mm in front of VP. 8

## UNIT–II

**4.** A line AB, 90 mm long, is inclined at 45° to the H.P. and its top view makes an angle of 60° with the V.P. The end A is in the H.P. and 12 mm in front of V.P. Draw its front view and find its true inclination with the V.P. 8

**5.** A line AB, 70 mm long, has its end A 15 mm above HP and 20 mm in front of VP. It is inclined at 30° to HP and 45° to VP. Draw its projections and mark its traces. 8

## UNIT–III

**6.** A right pentagonal pyramid side of side of base 30 mm and height 60 mm rests on one of its base on HP; the base being lifted up until higher corner in it is 40 mm above HP. Draw the projection when the edge on which it rests is made perpendicular to VP. 8



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**7.** A hexagonal prism of base side 30 mm and axis height 75 mm is resting on its base on HP such that a rectangular face is parallel to VP. It is cut by a section plane perpendicular to VP and inclined at 30 degree to HP, meeting the axis at a distance of 40 mm from the base. Draw the development of lateral surfaces of the lower portion of the prism. 8

## UNIT–IV

**8.** A cone of diameter 50 mm base and height 50 mm rests centrally on top of a square block of 80 mm side and 25 mm thick. Draw the isometric projection of the two solids. 8

**9.** Draw the Isometric view from given orthographic projection. 8