80 mm long such that their axis bisects each other at right angles. The axis of penetrating cylinder is parallel to VP. Draw the projections showing curves of intersection. **10**

(Compulsory Question)

9. Answer the following :

(a) Define diagonal scales.

(b) What do you mean by projection ?

(c) Why the Development of surfaces is needed ?

(d) What are the truncated solids ?

(e) Define a reference plane.

(f) Define the Isometric projection and Isometric view.

(g) If a line is parallel to both HP and VP, then what will be the position and dimension of line in front and top view ?

(h) Define the traces. **1¼×8=10**

Roll No. ..... **Total Pages : 04**

Sep-21-00006

B. Tech. EXAMINATION, 2021

Semester I (CBCS)

ENGINEERING DRAWING & GRAPHICS

ME-102

Time : 2 Hours *Maximum Marks : 40*

The candidates shall limit their answers precisely within 20 pages only (A4 size sheets/assignment sheets), no extra sheet allowed. The candidates should write only on one side of the page and the back side of the page should remain blank. Only blue ball pen is admissible.

Note : Attempt *Four* questions in all, selecting *one* question from any of the Sections A, B, C and D. Q. No. **9** is compulsory. Missing data, if any, can be assumed shitably. All questions carry equal marks.

Section A

1. Write freehand the following, in single stroke (Capital and lower case) letters :

Alphabets (Uppercase and Lower case) and Numerals 0 to 9 (h = 10 mm). **10**

2. (a) Draw the projections of a line XY 110 mm long inclined at 35° to HP and 50° to VP. Point Z is 30 mm above HP and in VP. Also, determine the apparent length and inclinations. **5**

(b) A point B is 45 mm above HP and 60 mm behind VP. Draw the projections. **5**

Section B

3. A hexagonal prism has one of its rectangular faces parallel to the HP. Its axis is perpendicular to the VP and 3.5 cm above the ground. Draw its projections when the nearer end is 2 cm in front of the VP. Side of base 2.5 cm long and axis 5 cm long. **10**

4. A pentagonal prism, side of base 30 mm and axis 75 mm long, rests with one of edges of its base on HP. Its axis is inclined at 45° to HP and parallel to VP. It is cut by a horizontal section plane passing through the highest corner of base. Draw its views. **10**

Section C

5. A hexagonal pyramid, 30 mm edge of base and 65 mm height, stands on HP such that an edge of the base is parallel to VP and nearer to it. A section

plane perpendicular to VP and inclined at 30° to HP cuts the pyramid passing through a point on axis at a height of 35 mm from the base.

Draw the isometric projection of the truncated pyramid, showing the cut surfaces. **10**

6. A pentagonal prism of 35 mm side and 65 mm height has a concentric pentagonal hole of 18 mm side. It rests with its base on HP such that two rectangular faces make equal inclination to VP. The prism is cut by a section plane whose vertical trace is inclined at 60° to XY. The section plane bisects the axis of the prism. Draw the sectional top and profile views. Add the true shape of the section. **10**

Section D

7. A vertical cylinder of diameter 40 mm and height 60 mm, is cut by a sectional plane inclined at 30° to HP and passing the axis of cylinder at a distance of 30 mm along the axis. Draw the development of the truncated cylinder. **10**

8. A cylinder of 50 mm diameter and axis 80 mm long stands with its base on HP. It is completely penetrated by a horizontal cylinder of 40 mm diameter and axis