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

J-FB-22-00200

B.Tech. EXAMINATION, 2022

Semester I (CBCS)

ENGINEERING DRAWING AND GRAPHICS

ME-102

Time : 3 Hours *Maximum 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 *Five* questions in all, selecting *one* question from each Sections A, B, C and D. Q No 9 is compulsory.

Section A

1. A rectangular plot of land measuring 1.28 hectares is represented on a map by a similar rectangle of area 8 sq. cm. Calculate the representative fraction (RF) of the scale. Draw a diagonal scale to read single metre. Show a distance of 438 m on it. **8**

2. With neat sketch defined :

   (a) True length of a line

   (b) Inclination of a line

   (c) Traces of a line.

   A line AB, 50 mm long, is inclined at 30° to the HP and 60° to the VP. Its end A is 25 mm above the HP and 20 mm in front of the VP. Draw its projections. **8**

Section B

3. A cone 40 mm diameter and 50 mm axis is resting on one generator on HP which makes 30° inclination with VP. Draw its projections. **8**

4. A cube of 35 m long edges is resting on the H P on one of its face with a vertical face inclined at 30° to the V.P. It is cut by a section plane parallel to the V.P. and 9 mm away from the axis and further away from the V.P. Draw its sectional front view and the top view. **8**

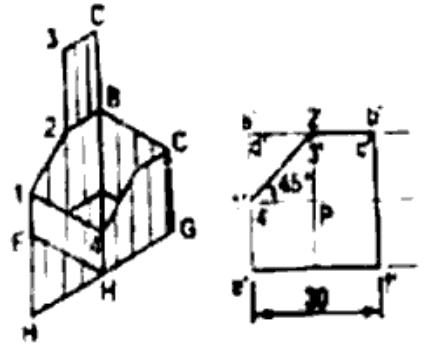
Section C

5. Briefly explain the concept of isometric projection. Draw isometric view of a hexagonal prism having a base with 30 mm side and a 70 mm long axis resting on its base on the HP with an edge of the base parallel to the VP. 8

6. Draw an isometric view of cone with a base diameter of 50 mm side and 70 mm long axis for the case :
   (a) when the base is on the HP
   (b) when the base is on the VP 8

Section D

7. Draw the development of the surface of the part P of the cube, the front view of which is shown in figure below 8



ISOMETRIC VIEW

8. A vertical square prism, base 50 mm side is completely penetrated by a horizontal square prism, base 35 mm side so that their axes are 6 mm apart. The axis of the horizontal prism is parallel to the V.P., while the faces of both prisms are equally inclined to the V.P. Draw the projections showing lines of intersection. 8

(Compulsory Question)

9. (a) Define a Vernier Scale.
   (b) Explain the concept of "*angle of projection*".
   (c) State the advantages of orthographic projection.
   (d) What do you mean by section of a solid ?
   (e) What do you mean by "*lines of intersection*" ?
   (f) What do you mean by "*third angle projection*" ?
   (g) State the characteristic features of isometric projection
   (h) What is "*representative fraction*" in scale ?
   8×1=8