



8. A vertical square prism, base 40 mm side, is completely penetrated by a horizontal square prism, base 30 mm side, so that their axes intersect. The axis of the horizontal prism is parallel to the V.P., while the faces of the two prisms are equally inclined to the V.P. Draw the projections of the solids, showing lines of intersection. (Assume suitable lengths for the prisms). 10

**(Compulsory Question)**

9. (a) Define a diagonal scale. 1  
 (b) Explain the concept of "angle of projection". 1  
 (c) State the advantages of isometric projection. 1

**Sep-21-00673**

**B. Tech. EXAMINATION, 2021**

Semester II (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.

**Section A**

1. The distance between Delhi and Agra is 200 km. In a railway map it is represented by a line 5 cm long. Find its R.F. Draw a diagonal scale to show single

km and maximum 600 km. Indicate on it the following distances : **10**

- (a) 222 km
- (b) 336 km
- (c) 459 km
- (d) 569 km

2. With neat sketch define :

- (a) True length of a line,
- (b) Inclination of a line,
- (c) Traces of a line.

Draw the projections of line EF 65 mm long, parallel to HP and inclined at 70 degree to VP. Point E is 35 mm above HP and 25 mm in front of VP. **10**

### Section B

3. A square pyramid, 40 mm base sides and axis 60 mm long, has a triangular face on the ground and the vertical plane containing the axis makes an angle of  $45^\circ$  with the VP. Draw its projections. Take the apex nearer to VP. **10**
4. A cylinder of 40 mm diameter, 60 mm height and having its axis vertical, is cut by a section plane,

perpendicular to the V.P. inclined at  $45^\circ$  to the H.P. and intersecting the axis 32 mm above the base. Draw its front view, sectional top view and true shape of the section. **10**

### Section C

5. Briefly explain the concept of isometric projection. A cylindrical block of base, 60 mm diameter and height 80 mm, standing on the H.P. with its axis perpendicular to the H.P. Draw its isometric view. **10**
6. Draw an isometric view of Frustum of Hexagonal Pyramid having 35 mm base side 20 mm top side and 80 mm long axis, resting on its base on the H.P. with an edge of the base parallel to the VP. **10**

### 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. **10**

- (d) What do you mean by section of a solid ? 1
- (e) What do you mean by development of surfaces ?  
1
- (f) Define orthographic projection. 1
- (g) What is isometric scale ? 2
- (h) What is "*representative fraction*" in scale ? 2