

Total No. of Pages : 02

Roll No. 2236822

Total No. of Questions : 09

B.Tech. (Sem.-1, 2)
ENGINEERING GRAPHICS AND DESIGN

Subject Code : BTME-101-121

M.Code : 91335

Date of Examination : 27-01-2023

Max. Marks : 60

Time : 3 Hrs.

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION - B & C. have FOUR questions each.
3. Attempt any FIVE questions from SECTION B & C carrying EIGHT marks each.
4. Select atleast TWO questions from SECTION - B & C.

SECTION-A

1. Write short notes on :

- a) Differentiate between Frustum and Truncated Solid.
- b) Differentiate between Isometric Projections and Isometric View.
- c) Explain with the help of an example the Unidirectional system of placement of dimensions.
- d) What is difference between plane scale and diagonal scale?
- e) Explain the types of Dimensions with a suitable drawing.
- f) Define primary and secondary planes.
- g) Give examples (with suitable drawing) of solids of revolution.
- h) Show by means of traces, a plane perpendicular to HP and inclined to VP.
- i) Write the following statement using single stroke capital vertical letters of 12 mm size:
"LABORATORY IS A TEMPLE WHERE SEARCH FOR TRUTH IS MADE"
- j) Draw a regular Hexagonal Lamina of side 45mm.

SECTION-B

2. Construct a Plain Scale of R.F. = 1/50 to read meters and decimeters and long enough to measure up to 8m. Show 7.4m and 4m 5dm on the scale.
3. A point "M" is 31mm behind of VP and 54 mm below HP. Draw its projections and find out its shortest distance from the reference line.
4. A line CD, 60 mm long, has its end 'C' in HP and 15 mm in front of VP. The line is inclined at 45° to the HP and 30° to the VP. Draw its projection when the end 'D' is in first quadrant. Also find its HT and VT.
5. Line "AB" is lying on profile plane. Its end "A" is 44mm in front of VP & 12 mm above HP and end "B" is 8mm in front of VP & 52mm above HP. Draw its projection and find, True Length, inclinations with the principle planes, HT and VT.

SECTION-C

6. A regular hexagonal thin plate of 45mm side has a central circular hole of 45mm diameter at its center. It is resting on one of its corners in HP. Draw its projections when the plate surface is vertical and inclined to VP at 30°.
7. A cone of base rim diameter 45mm and axis 65 mm lying on HP on a point of its circumference such that the generator is perpendicular to HP. Draw its projections assuming the cone lying in first quadrant.
8. A right regular square pyramid of base edge 42mm and axis 65 mm long; rests on its base on HP with its base edges equally inclined to VP. Draw its projections assuming the pyramid in 1st quadrant.
9. A cube of 25 mm edge is placed centrally on the top of another square block, of 40mm edge and 15mm thick. Draw the isometric drawing of the two solids.

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.

Section - A

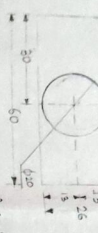
1. **Frustum** :- When a cone or a pyramid is cut by a plane parallel to its base, the remaining top portion, the remaining lower portion is called the frustum.

Truncated solid :- When a solid is cut by a plane inclined to its base, thus removing the top portion, the remaining lower portion is called the truncated solid.

Isometric projection :- It is a type of pictorial drawing in which the three dimensions of a solid are not equally shown in one view, but they are actual sizes can be measured directly in the drawing.

Isometric view :- All lines in each view are parallel to each other, and the lines do not converge, objects are made to give as much detail as possible.

Unidirectional system :- In a unidirectional system, all the dimensions are placed in one direction such that they may be read from the bottom of the drawing. Also in this system the dimension lines are drawn parallel to the direction of dimension.

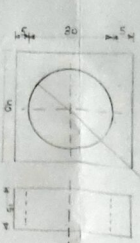


First angle projection :- In this system, the object is placed in the first angle of projection, i.e., between the vertical plane and the horizontal plane. The object is projected on the vertical plane and the horizontal plane. The object is placed in the first angle of projection, i.e., between the vertical plane and the horizontal plane.

Isometric scale :- A special scale is used when we draw isometric views. It is used to draw the isometric views of objects. The scale is used to draw the isometric views of objects. The scale is used to draw the isometric views of objects.

Isometric view :- It is a type of pictorial drawing in which the three dimensions of a solid are not equally shown in one view, but they are actual sizes can be measured directly in the drawing.

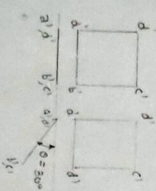
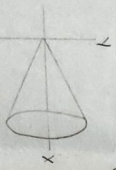
Isometric view :- It is a type of pictorial drawing in which the three dimensions of a solid are not equally shown in one view, but they are actual sizes can be measured directly in the drawing.



Primary plane :- The plane on which the projection are taken are called as primary plane.

Secondary plane :- A plane passing through the center of gravity of a body segment, through the center of a point.

Example of solid of revolution in a cone

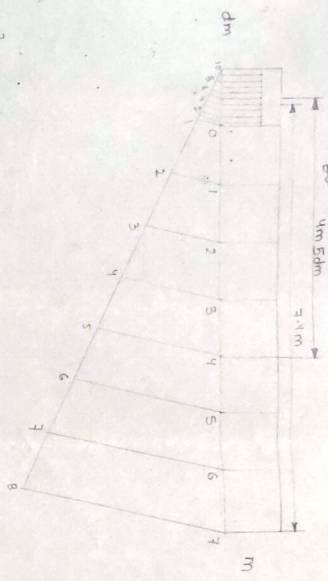


Frustum	4:1	4:1	4:1	4:1
Frustum	3:1	3:1	3:1	3:1
Frustum	2:1	2:1	2:1	2:1
Frustum	1:1	1:1	1:1	1:1

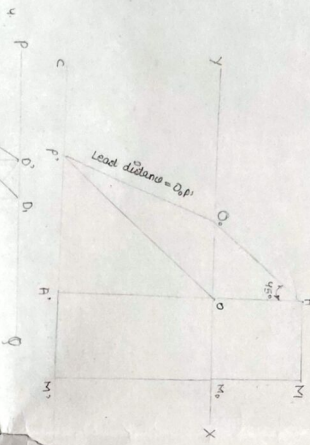
LABORATORY IS A TEMPLE WHERE SEARCH FOR TRUTH IS MADE

Section - B

2. $R.F = \frac{1}{50}$
 $LOS = \frac{1}{50} \times 8 \times 100 = 16cm$
 1cm Edm



3. Lead distance = 56g



Section - C

