

**Code : 100102**

**B.Tech 1st Semester Exam., 2021  
(New Course)**

**ENGINEERING GRAPHICS AND DESIGN**

**Time : 3 hours**

**Full Marks : 70**

**Instructions :**

- (i) The marks are indicated in the right-hand margin.*
- (ii) There are **NINE** questions in this paper.*
- (iii) Attempt **FIVE** questions in all.*
- (iv) Question No. 1 is compulsory.*

**1. Choose the correct answer of the following  
(any seven) : 2×7=14**

**(a) A0 sheet has the dimensions**

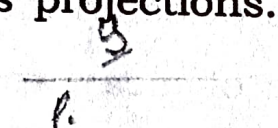
- (i) 841 × 1189*
- (ii) 720 × 540*
- ☒ *(iii) 1200 × 1500*
- (iv) 250 × 350*

**(b) Which is a type of a line?**

- (i) Outline*
- (ii) Margin line*
- (iii) Dimension line*
- ☒ *(iv) All of the above*

- (c) When are the projectors parallel to each other and perpendicular to the plane of projection?
- (i) Oblique projection
  - (ii) Isometric projection
  - ☒ (iii) Orthographic projection
  - (iv) Perspective projection
- (d) Tetrahedron has how many faces?
- (i) 6
  - (ii) 5
  - (iii) 8
  - ☒ (iv) 4
- (e) When the section plane is parallel to the HP, the true shape of the section will be seen in
- ☒ (i) top view
  - ☒ (ii) sectional top view
  - (iii) front view
  - (iv) sectional front view
- (f) In isometric view, the number of dimensions of an object that are visible is
- ☒ (i) 3
  - (ii) 2
  - ☒ (iii) 1
  - (iv) None of the above

- (g) A digitizer falls under which category?
- (i) Input device
  - (ii) Output device
  - (iii) Printing device
  - (iv) None of the above
- (h) Which of the following is DRAW command?
- (i) Line
  - ~~(ii) P-line~~
  - (iii) Polygon
  - ~~(iv) All of the above~~
- (i) The LIMIT command sets
- (i) the limits of computation
  - (ii) the limits of measurements
  - (iii) the limits of drawing area
  - (iv) the screen limits
- (j) LAYER command helps in
- (i) dividing the drawing
  - (ii) introducing different colours to the drawing
  - (iii) introducing different line thicknesses in the drawing
  - (iv) All of the above

2. Construct an ellipse when the distance of the focus from the directrix is equal to 50 mm and eccentricity is  $2/3$ . 14
3. A thin circular disc of 50 mm diameter is allowed to roll without slipping from upper edge of sloping plank which is inclined at  $15^\circ$  with the horizontal plane. Draw the curve traced by the point on the circumference of the disc. 14
4. A line,  $PQ$ , 75 mm long, has its end  $P$  in the VP and the end  $Q$  in the HP. The line is inclined at  $30^\circ$  to the HP and at  $60^\circ$  to the VP. Draw its projections. 14
- 7.1. 75 mm, 
5. Draw the projections of a regular hexagon of 25 mm side having one of its sides in the HP and inclined at  $60^\circ$  to the VP, and its surface making an angle of  $45^\circ$  with the HP. 14
6. Draw the projections of a pentagonal prism, base 25 mm side and axis 50 mm long, resting on one of its rectangular faces on the HP with the axis inclined at  $45^\circ$  to the VP. 14



7. A cylinder, 65 mm diameter and 90 mm long, has its axis parallel to the HP and inclined at  $30^\circ$  to the VP. It is cut by a vertical section plane in such a way that the true shape of the section is an ellipse having the major axis 75 mm long. Draw its sectional front view and true shape of the section. 14
8. A frustum of a square pyramid has its base 50 mm side, top 25 mm side and height 75 mm. Draw the development of its lateral surface. 14
9. Draw the isometric view of a cone, base 40 mm diameter and axis 55 mm long (i) when its axis is vertical and (ii) when its axis is horizontal. 7+7=14

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$T.L = 75mm,$

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