

Total No. of printed pages = 3

CE 181103

Roll No. of candidate

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21/31

2022

**B.Tech 1<sup>st</sup> Semester End-Term Examination**  
**ENGINEERING GRAPHICS AND DESIGN**  
**(New Regulation (w.e.f. 2017-18)) &**  
**(New Syllabus (Group - B) w.e.f. 2018-19))**

Full Marks – 70

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer question No. 1 and any *four* from the rest.

1. Answer the following :

(10 × 1 = 10)

(i) Representative fraction is

- (a) Length in drawing/ Actual length
- (b) Actual length/Length in drawing
- (c) Larger length/smaller length
- (d) None of above

(ii) The eccentricity of the conic section is defined as

- (a) Distance of the point from the focus/distance of point from directrix
- (b) Distance of point from directrix/distance of point from focus
- (c) Distance of point from tangent/distance of point from focus
- (d) Distance of point from vertex/distance of point from focus

(iii) The true area of plate can be determined when the plate is

- (a) Parallel to a plane
- (b) Inclined to a plane
- (c) Perpendicular to a plane
- (d) None of above

(iv) An isometric projection is

- (a) Three dimensional view
- (b) Projected view
- (c) Bird eye view
- (d) All of above

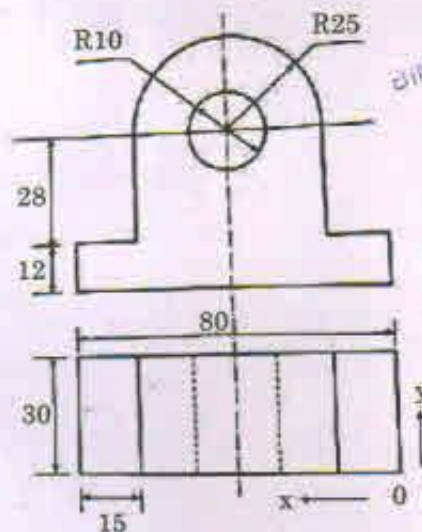
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- (v) An traces can not be drawn if
- (a) Plane is perpendicular to reference plane
  - (b) Plane is on the reference plane
  - (c) Plane is parallel to reference plane
  - (d) All of above
- (vi) AUTOCAD is developed by
- (a) Microsoft Corporation
  - (b) Apple Inc.
  - (c) AUTODESK Inc.
  - (d) None of above
- (vii) In AUTOCAD drawing, Circle can be drawn using
- (a) Center point and radius
  - (b) Three points given on circumferences
  - (c) Tangent, tangent and radius method
  - (d) All of above
- (viii) Mirror command is used to
- (a) Draw a similar object to other half
  - (b) Copy a object
  - (c) Erase a object
  - (d) None of above
- (ix) To obtain parallel line and parallel curve \_\_\_\_\_ command is used
- (a) Copy
  - (b) Fillet
  - (c) Offset
  - (d) None of above
- (x) Which of the file extension can not open in AUTOCAD
- (a) dwg
  - (b) dxf
  - (c) doc
  - (d) dws

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2. (a) Write freehand in single-stroke inclined capital letters of 12 mm height, the following sentence: "DIMENSION LINES ARE CONTINUOUS THIN LINES". (6)
- (b) An area of 225 sq cm on a map represents an area of 49 sq km on the field. Find the RF of the scale of this map and draw a diagonal scale to show kilometers, hectometers and decameters and to measure up to 10 km. Indicate on the scale a distance of 7.36 kilometers. (9)

3. (a) Construct a hypocycloid rolling circle of 50 mm diameter and directing circle of 175 mm diameter. Draw a tangent to it at a point 50 mm from the centre of the directing circle. (10)
- (b) A point P is 20 mm below H.P and lies in the third quadrant. Its shortest distance from xy is 40 mm. Draw its projection. (5)
4. (a) A line AB, 75 mm long has its end A 20 mm above the HP and 25mm in front of VP. The end B is 40mm above the HP and 65 mm in front of the VP. Draw the projections of AB and show its inclination with the HP and the VP. (8)
- (b) A regular hexagon of 20mm side has one side on the ground. Its plane is inclined  $40^\circ$  to the H.P. and perpendicular to the V.P. draw its projections. (7)
5. A hexagonal prism, base 30 mm side and axis 75 mm long, has an edge of the base parallel to the H.P. and inclined at  $45^\circ$  to the V.P. Its axis makes an angle of  $60^\circ$  with the H.P. Draw its projection. (15)
6. Draw isometric view of model, two views are shown below.



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