Total No. of printed pages = 4

CE 181103

5/8/22

Roll No. of candidate | | | | | | | | | | |

2022

B. Tech. 2nd Semester End-Term Examination

ENGINEERING GRAPHICS AND DESIGN

(New Regulation & New Syllabus)

Full Marks – 70 Time – Four 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: Choose the correct answer from the choices given: (10 × 1 = 10)

(i) Center lines are used to locate or represent the centers of ————

(a) Hidden round features

(b) Arcs

(c) Circles

(d) All of the above

(ii) The line terminated by arrowheads, indicating the direction and extent of a dimension is ————

(a) Extension line

(b) Dimension line

(c) Arrowhead line

(d) Center line

(iii) A line of original length of 5 cm is shown by a 2 m line on a scale. Its representative fraction (RF) is ————

(a) 1:20

(b) 1:40

(c) 20:1

(d) 40:1

[Turn over

(iv) The eccentricity (e) of the conic section is defined as ————————

(a) Distance of the point from the directrix/distance of the point from focus

(b) Distance of the point from the focus/distance of the point from directrix

(c) Distance of the point from the vertex/distance of the point from focus

(d) Distance of the point from the tangent/distance of the point from focus

(v) When the section plane, intersecting a right circular cone is parallel to the axis of the cone, section is a/an ————————

(a) Circle

(b) Ellipse

(c) Parabola

(d) Hyperbola

(vi) The front view of lateral surfaces of a hexagonal pyramid, whose base is placed perpendicular to the vertical plan, is ————————

(a) six rectangles

(b) six squares

(c) Six triangles

(d) A hexagon

(vii) A point 'P' is below Horizontal Plane (HP) and in front of Vertical Plane (VP). The point is in ————————

(a) First quadrant

(b) Second quadrant

(c) Third quadrant

(d) Fourth quadrant

(viii) To obtain parallel lines, concentric circles and parallel curves ———————— command is used in AutoCAD.

(a) Copy

(b) Fillet

(c) Array

(d) Offset

(ix) A polygon can be broken into individual lines using the command _____

(a) Trim

(b) Break

(c) Explode

(d) Offset

(x) The command which converts discrete objects in polyline is _____

(a) Union

(b) Join

(c) Polyline

(d) Subtract

2. (a) Write the sentence in single stroke vertical capital letters (height = 2.5 cm) (8)

"ALWAYS BE KIND"

(b) Draw a scale of 10 millimetres = 6 decimetres to show metres and decimetres and long enough to measure up to 6 metres. Show the length of 4.9 metres on it. (7)

3. Construct a curve when the distance of the focus from the directrix is 55 millimetres and eccentricity is 6/5.

Draw normal and tangent at a point P on the curve, situated at a distance of 50 millimetres from the focus. (10+5= 15)

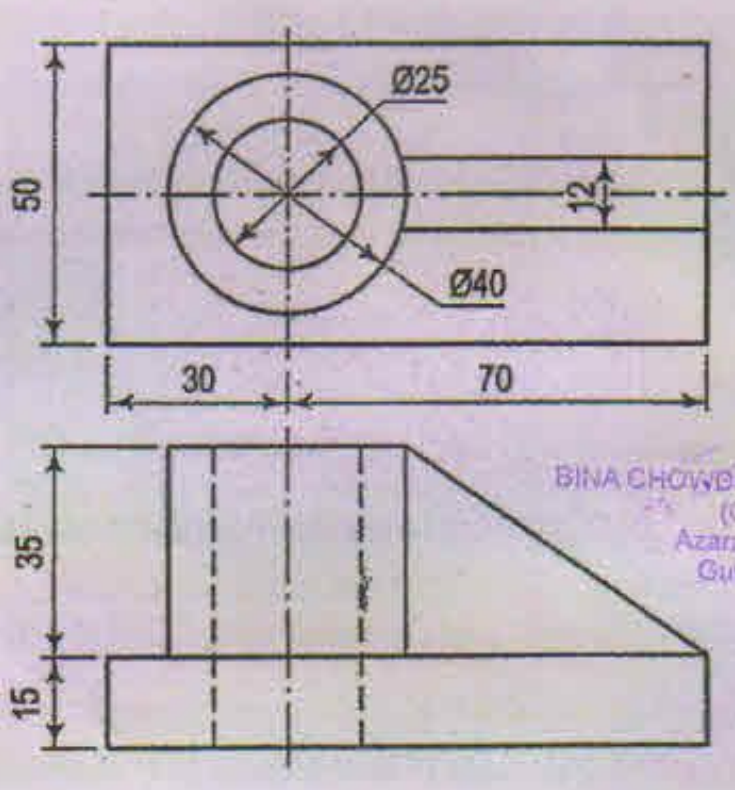
4. (a) A point 30 mm above xy line is the plan-view of two points P and Q. The elevation of P is 45 mm above the H.P. while that of the point Q is 35 mm below the H.P. Draw the projections of the points and state their position with reference to the principal planes and the quadrant in which they lie. (6)

(b) The top view of a 75 mm long line measures 55 mm. The line is in the V.P., its one end being 25 mm above the H.P. Draw its projections. Draw the traces of the line. (7 + 2 = 9)

5. The shorter side of a rectangular plate is in the V.P. and inclined at 45° to the H.P. Size of the rectangle is 50 mm × 25 mm. Project its top view if its front view is a square of 25 mm long sides. (15)

6. (a) A hexagonal prism has one of it's rectangular faces parallel to the H.P. It's axis is perpendicular to the V.P. and 3.5 cm above the ground. Draw its projections when the nearer end is 2 cm in front of the V.P. Side of base 2.5 cm long; axis 5 cm long. (7)

(b) Draw the isometric view of the following figure : (8)



7. A triangular pyramid, having base 40 mm side and axis 50 mm long, is lying on the H.P. on one of its faces, with the axis parallel to the V.P. A section plan parallel to the V.P. cuts the pyramid at a distance of 6 mm from the axis. Draw its sectional front view and the top view. (15)