Bihar Engineering University, Patna
B.Tech. 2nd Semester Special Examination, 2024

Course: B.Tech. *Time: 03 Hours*

Code: 100202 *Subject: Engineering Graphics & Design* *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.

Q.1 ***Choose the correct answer of the following (Any seven question only):*** **[2 x 7 = 14]**

(a) Which type of a line is particular to section drawings?

(i) Break lines (ii) Phantom lines (iii) Extension line (iv) Cutting plane lines

(b) In a scale 10 cm is drawn on drawing sheet to represent an actual length of 10 mm. The Representative fraction (RF) value is

(i) 5:1 (ii) 1:1 (iii) 10:1 (iv) 1:10

(c) The FV of a line represents true length, and TV shortened in length and parallel to reference line, if the line is

(i) parallel to HP and perpendicular to VP (ii) inclined to VP and parallel to HP

(iii) parallel to HP and inclined to VP (iv) parallel to VP and inclined to HP

(d) When the eccentricity of a conic curve is greater than 1 the curve is known as

(i) circle (ii) hyperbola (iii) ellipse (iv) parabola

(e) The intersection of a plane surface with the horizontal plane is a line and is called

(i) horizontal trace (ii) vertical trace (iii) profile trace (iv) trace

(f) The solid having polygon for a base and triangular lateral faces intersecting at a vertex is

(i) Straight line (ii) Ellipse (iii) Square (iv) Point

(g) TV of a hexagonal plane parallel to VP and perpendicular to HP is a

(i) hexagon (ii) rectangle (iii) ellipse (iv) straight line

(h) French curves are used for drawing

(i) straight lines (ii) perpendicular lines

(iii) spline curves (iv) None of these

(i) When saving your drawing in AutoCAD the default file type is.....?

(i) pdf (ii) dwg (iii) bak (iv) doc

(j) The shortcut command key for UNDO.

(i) CTRL+C (ii) CTRL+V (iii) CTRL+Z (iv) CTRL+S

Q.2 (a) A rectangular plot of land of area 16 square kilometres is represented on a certain map by area 1 square centimetres. Draw a plain scale to show units of 10 kilometres and single kilometre. Find R.F. and mark on it a distance of 57 kilometres. **[7]**

(b) Point A is 20 mm above HP and 30 mm infront of VP and point B is in the HP and 40 mm behind the VP. The distance between their projectors is 50 mm. Draw the projection of points. Also draw straight lines joining their top and front views. **[7]**

Q.3 Top view and front view of a line AB, 60 mm long, measure 54 mm and 45 mm respectively. End A is 15 mm above HP and 10 mm infront of VP. Draw its projections and determine its inclination to the reference line when the line lies in first quadrant. **[14]**

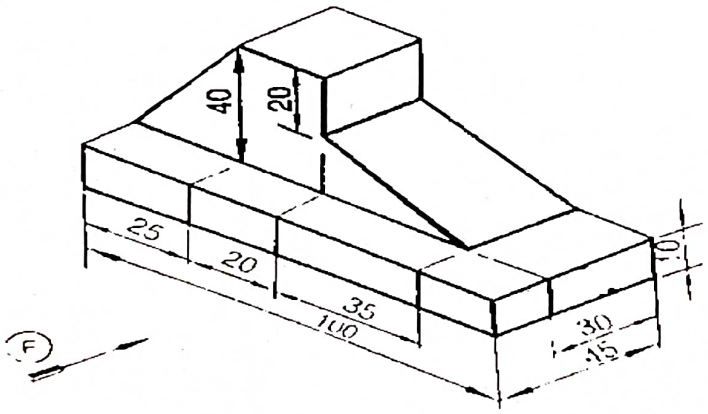
Q.4 A thin hexagonal plate of sides 30 mm is lying on VP on one of its corners. Draw its projections, when the surface makes 45^0 with VP and the diagonal is parallel to HP. **[14]**

Q.5 A right circular cylinder, diameter of base 50 mm and length of axis 70 mm, rest on HP on its base rim such that its axis is inclined at 45^0 to HP and the top view of the axis is inclined at 60^0 to the VP. Draw its projection. **[14]**

Q.6 A cone of base diameter 60 mm and altitude 80 mm rests on its base on the HP. It is sectioned by a vertical section plane parallel to VP passing through a point 10 mm in front of the axis. Draw the sectional front view. **[14]**

Q.7 A right regular pentagonal prism, edge of base side 30 mm and axis length 75 mm resting on its base on HP, is cut by a section plane inclined to HP at 45^0 and meeting the axis at a distance of 18 mm from its top end. Draw the development outside surface of the cut prism. **[14]**

Q.8 Isometric view an object is given below. **[14]**



Draw three views of this object by first angle projection method.

Q.9 The following figure shows two orthographic views of an object. Draw the isometric projection of the object: **[14]**