

Bihar Engineering University, Patna

End Semester Examination - 2022

Course: B.Tech.

Semester: III

Time: 03 Hours

Code: 101303

Subject: Computer Aided Civil Engineering Drawing

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) A map of 20 cm x 4 cm represents an area of 50000 sq. meter of a field. The RF of the scale is
(i) 1/625 (ii) 1/62500 (iii) 1/6250000 (iv) 1/625000
- (b) Scale command can be easily accessed by typing
(i) S (ii) SC (iii) SE (iv) SCL
- (c) The size of A2 Drawing sheet is (width x length)
(i) 594 mm x 841 mm (ii) 420 mm x 594 mm
(iii) 841 mm x 1189 mm (iv) 297mm x 420 mm
- (d) Floor area ratio (FAR) as per National Building Code is
(i) Total built up area/Plot area (ii) Plot area/Total built up area
 (iii) Total floor area/Plot area (iv) Ground floor area/Total built up area
- (e) The bricks used for corners of walls of a structure are called _____
(i) Spalls (ii) Quoins (iii) Hearting (iv) Side
- (f) Which mode allows the user to draw a 90-degree straight line?
 (i) Ortho Mode (ii) Snap mode (iii) Grid mode (iv) Offset mode
- (g) Which of the following publication made by Bureau of Indian standard include specification about drawing sheets
(i) IS 10711 (ii) SP 46 (iii) IS 456 (iv) IS 1444
- (h) _____ is the built-up covered area of a building measured at floor level of any storey?
(i) Plinth area (ii) Carpet area (iii) Total area (iv) None of these
- (i) Top view of drawing is known as
(i) Section (ii) Plan (iii) Elevation (iv) Side View Standard
- (j) Which of the following is a substructure component of building
(i) Door (ii) Window (iii) Foundation (iv) Stair

Q.2 (a) Explain the following terms with neat sketches: [8]

- (i) Half bat
- (ii) Kind closer
- (iii) Tothing
- (iv) Mitred closer

(b) Explain the importance of BIM. [6]

Q.3 A residential building (G+1) RCC framed structure is proposed to construct with the following requirements [14]

- (i) Master bedroom with sanitary units
- (ii) Guest room
- (iii) Living room
- (iv) Kitchen
- (v) Dining hall

Provide verandh, passage, sanitary units as per requirement. The size of plot is 60 m x 45 m. Draw floor plan for each levels

- Q.4 (a) Write the principles of isometric and perspective drawing [7]
 (b) Give plans of the following junctions in $1\frac{1}{2}$ brick English bond. [7]
 (i) T-Junction (ii) Cross Walls

Q.5 (a) Draw seven electrical and plumbing symbols used in building drawing with neat sketches. [7]

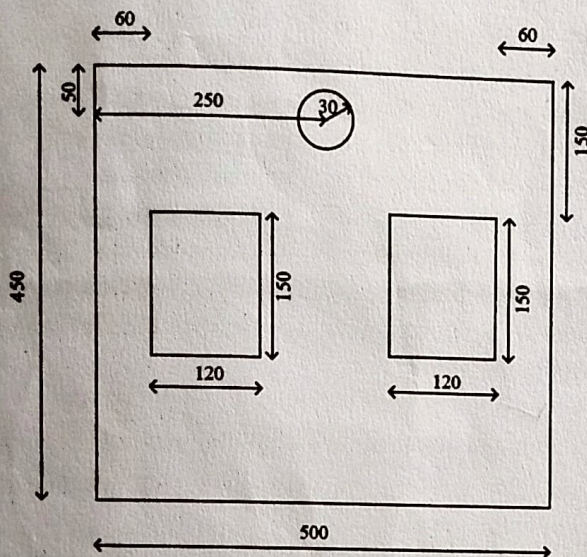
(b) Draw the symbols of any seven various important materials used in the construction of Civil Engineering Structures. [7]

Q.6 (a) Differentiate between orthographic projection and perspective projection. [6]

(b) Draw the symbol of the following: [8]

- (i) Concave Fillet Weld
- (ii) Gate Valve
- (iii) Check valve
- (iv) Convex Fillet Weld

Q.7 (a) Write the AutoCAD commands to carry out dimensioning of the drawing shown in Fig. (Dimensions are given in mm) [10]



(b) What do you mean by optimal layout of the building? [4]

Q.8 Discuss the use of following commands in AutoCAD [14]

- (i) LIMITS (ii) TRIM (iii) OFFSET (iv) ZOOM (v) PAN
- (vi) EXTENT (vii) CHAMFER

Q.9 Write short notes on the following: [3.5x4=14]

- (a) Stretcher bond
- (b) Flemish bond
- (c) Squint junction
- (d) Picture plane