

**B.Tech 3rd Semester Exam., 2020
(New Course)**

**COMPUTER AIDED CIVIL ENGINEERING
DRAWING**

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. Answer any seven of the following questions :

2×7=14

- (a) What is the need of building drawing?
- (b) Name any five types of lines used in building drawing.
- (c) Discuss any two advantages of computer aided drawing.
- (d) Write the command in AutoCAD to break a line into four parts.
- (e) Write two commands used in AutoCAD for modifying the drawings.

- (f) Discuss any two uses of structural drawing
- (g) Draw the side elevation of straight stairs while clearly labelling the components
- (h) What do you mean by perspective view of the building?
- (i) Give example of two types of joinery used in the building
- (j) Discuss the two uses of Building Information System

2. (a) What are the concepts of drawing? 4
- (b) What do you mean by optimal layout of the building? 4
- (c) Write the AutoCAD commands to carry out dimensioning of the drawing shown in Fig 1. Dimensions are given in millimetres. 6

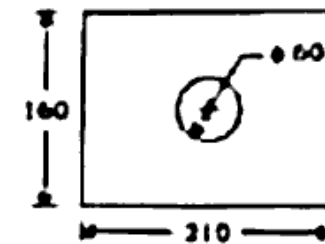


Fig 1

3. (a) Draw the symbol of the following 2+4+4
- (i) Flush valve
 - (ii) Pressure gauge
 - (iii) Gate valve
 - (iv) Two-way switch
- (b) Differentiate between the functional and non functional dimensions using suitable example
- (c) Draw the cross section showing the reinforcement details of a 150 mm thick one way slab having main reinforcement bars of 12 mm in diameter @ 150 mm centre-to-centre spacing and distribution steel reinforcement bars of 8 mm in diameter @ 150 mm centre to centre spacing 3
4. (a) Define the following 2+4+8
- (i) Stretcher
 - (ii) Header
 - (iii) Closer
 - (iv) Quoin

- (b) Discuss the general feature of the double flemish bond. Draw the neat sketch of plan of the double flemish bond for 1, 3, 5, ... courses in one-brick (thick wall). 6
5. (a) Discuss briefly the various elements of building drawing 6
- (b) Discuss the various elements of a site plan of a building. Also discuss the suitable scale used in the drawing site plan. 8
6. (a) Discuss the types of sanitary fittings used in a building. Using suitable example, explain how they are depicted in detailed drawing. 6
- (b) Draw the detailed plan and section of RCC column and column footing with required details : 8
- (i) Size of footing 1200 × 1200
 - (ii) Size of column 300 × 300
7. (a) What is construction note? Discuss the types of information provided in construction note 7

(5)

- (b) Prepare a site plan of a residential building having line plan shown in Fig. 2. The size of the plot is 16 m × 18.5 m. The road fronting is 16 m in length and 9 m width. The north is along 18.5 dimension : 7

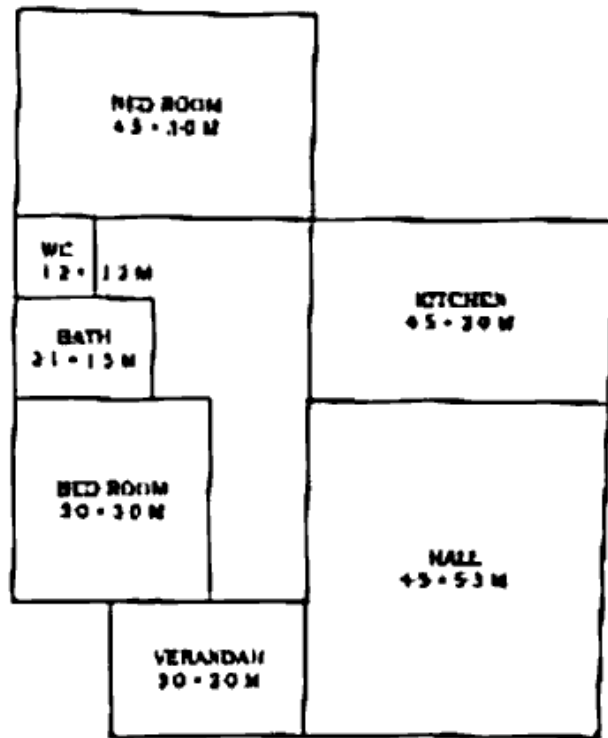


Fig. 2

8. (a) Explain the key points that must be considered for drawing the foundation plan of load-bearing structures. 7

(6)

- (b) Discuss the basic elements of foundation plan of load-bearing structure using a suitable example. 7
9. (a) Discuss the principle to draw perspective drawing using suitable example figure. What are the guidelines to draw perspective drawing? 7
- (b) Discuss the components of Building Information System. How is the building information system helpful in managing the building infrastructure? 7
