



AL - 2090

B. E. (Civil Engineering) Fifth Semester (CGS)

**Building Planning and CAD**

**5 CE 03**

P. Pages : 7

Time : Four Hours

Max. Marks : 80

- Note :
1. All question carry equal marks.
  2. Answer **two** question from section A and **two** question from section B.
  3. Due credit will be given to neatness and adequate dimensions.
  4. Assume suitable data wherever necessary.
  5. Diagrams and chemicals equations should be given wherever necessary.
  6. Retain the construction lines.
  7. Illustrate your answer necessary with the help of neat sketches.
  8. Use of pen Blue/Black ink/refill only for writing the answer book.

**SECTION - A**

1. a) What is the importance of abbreviations & graphical symbols in building drawing ?  
Give suitable examples. **4**
- b) Draw a typical layout of sheet for civil Engineering drawing. **2**

c) Explain the term plan, elevation, typical section with example. 4

**OR**

2. a) i) State the name of IS code use for Civil Engineering drawing. 1

ii) What are different types of lines as per IS code use for Civil Engineering drawing. State application of each line with neat sketch. 5

b) i) What do you mean by R.F. 1

ii) Explain the selection of scale for various drawings and plans. 3

3. a) Draw a typical section of wall showing details of foundation to slab for load bearing structure. Mention name of each component & levels. (Assume suitable dimensions). 4

b) Explain in detail. 6

i) Site plan

ii) Block plan

iii) Layout plan

Also discuss requirement of site plan as per sanctioning Authority.

b) What is the necessity of building by laws. Which is the issuing Authority of building by - laws for any city. 3

c) Define. 4

i) Picture plane.

ii) Vanishing point.

iii) C.V.R.

iv) Angle of vision.

d) Draw a line plan on graph paper for the co-operative bank building. Assume suitable size of plot. Adequate weightage shall be given to maximum details covered. The number of staff members is 20. The total plinth area is 20 m × 30 m. 10

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- e) State any three mandatory security arrangement require for high rise buildings. **2**
7. a) Define. **5**
- i) Floor area
- ii) F.S.I
- iii) F.A.R.
- iv) Carpet area
- v) Plinth area.
- b) Discuss the procedure for NA conversion of land. **3**
- c) Draw a detailed line plan on a graph sheet for a High School building. Assume suitable size of plot. Adequate weightage shall be given to maximum details covered the total strength of school is 600 number of students. Assume all data & mention it. **12**

**OR**

8. a) What are the types of public building and state their requirements. **3**

- c) Plan a 2BHK house with following details, (All dimensions are in meters).
- i) Kitchen – 2.8 × 3.4
- ii) Bedroom – 4.0 × 3.0
- iii) Living room – 4.8 × 4.2
- iv) Choose suitable dimensions for toilets (Atleast one toilet must be attached to Bed).
- v) Choose suitable dimensions for Pooja, Porch, Verandah etc.

Draw the following.

- i) Line Plan. **4**
- ii) Developed plan (Double Line Plan). **6**
- iii) Section passing though any one room toilet & staircase. (Section Must have atleast one door & one window). **7**
- iv) Area statement & schedule of openings. **3**

**OR**

4. a) It is proposed to construct a Doctor's residential building from the following data of plot 18m × 24 m.
- i) Drawing hall - 28 sq.m.
- ii) Kitchen with store room - 15 sq.m.
- iii) Dining hall - 12 sq.m.
- iv) Master bed with attached toilet - 15 sq.m.
- v) Children bed room - 15 sq.m.
- vi) Porch, Common toilet, Passage may be suitably provided.

Draw the following as per requirement of sanctioning authority.

- i) Developed plan (Double Line Plan). **8**
  - ii) Section passing through any one room, toilet, staircase, doors & windows. **8**
  - iii) Area statement, construction notes and schedule of openings. **4**
- b) Draw the symbols of following as per IS code use in Civil engineering drawing. **5**
- i) Light plugs.
  - ii) Power plug.
  - iii) Fluorescent Light (Single).
  - iv) One - way switch.
  - v) Ceiling fan.
  - vi) Floor trap.
  - vii) WC.
  - viii) Fire hydrant.
  - ix) Sprinkler.
  - x) Fire extinguisher.
- c) Draw the electrical plan for the line plan prepared using data given in Q.4 a. **5**

### SECTION - B

5. a) What are the principles of planning. **2**  
Explain the following with neat sketches. **8**
- i) Orientation.
  - ii) Privacy.
  - iii) Circulation.
  - iv) Grouping.

- b) What are various building types. Enlist common utilities require for each building type. **5**
- c) Where do you prefer to live in bungalow or in flat. Justify. **3**
- d) State standard dimensions for two wheeler & four wheeler parking. **2**

**OR**

6. a) What is the difference between loft and mazzanine floor. **3**
- b) Explain in detail criteria for earthquake resistant planning of a building. **5**
- c) What do you meant by seismic zone state the seismic zone for atleast three parts of India. **2**
- d) Explain principle of planning with. **8**
- i) Aspect
  - ii) Prospect
  - iii) Roominess
  - iv) Ventilation.