

Total No. of Questions : 8]

SEAT No. :

**PB3601**

**[6261]-6**

[Total No. of Pages : 3

**S.E. (Civil Engineering)**

**BUILDING TECHNOLOGY AND ARCHITECTURAL PLANNING  
(2019 Pattern) (Semester - III) (201001)**

*Time : 2½ Hours]*

*[Max. Marks : 70*

*Instructions to the candidates:*

- 1) Attempt Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Figures to the right indicate full marks.
- 3) Draw neat figures wherever necessary.
- 4) Assume necessary data.
- 5) Use of scientific calculator is allowed.

- Q1) a)** Draw a neat labeled sketch of semicircular-arch and show: **[6]**
- i) Key stone
  - ii) Crown
  - iii) Springing line
- b) State the types of flat terraced roofing and explain any one of them. **[6]**
- c) Explain swing door with the help of a sketch. **[6]**

OR

- Q2) a)** Enlist various types of fixtures for doors and explain anyone with a neat sketch. **[6]**
- b) Enlist any four types of floor finishes and explain mosaic flooring. **[6]**
- c) Explain in brief, the following: **[6]**
- i) Timber Linter
  - ii) Stone lintel

- Q3) a)** Enlist various types of residential buildings and explain any one in detail. **[5]**
- b) Draw to a suitable scale developed plan of a single storey framed residential building with the following units-Living room-  $3.5 \times 5.2$ , bedroom-  $3.0 \times 3.0$ , Kitchen-  $3.2 \times 3.0$ , W.C -  $1.0 \times 1.2$ , Bath -  $1.2 \times 2.1$ , Staircase: Rise = 0.16m & Tread = 0.27m, Width of each flight = 1.2m, Wall thickness 0.23 m (outer) & 0.15m (inner), Floor height 3.2m. Room sizes are in 'm'. **[12]**

OR

**P.T.O.**

- Q4)** a) Mention Functional requirements and dimensions of Twin bungalows. [6]  
b) What do you understand by Leadership in Energy and Environmental Design (LEED)? [6]  
c) Give the classification of residential building explain any two types in brief. [5]

- Q5)** a) Plan and draw to a scale of 1:50 or suitable, a primary school building with the following requirements: [12]

- i) Five classrooms -  $50\text{m}^2$
- ii) Principals office -  $26\text{m}^2$
- iii) Staff room -  $30\text{m}^2$
- iv) Store room -  $35\text{m}^2$
- v) Two toilet units separately for boys and girls -  $15\text{m}^2$  each
- vi) A hall -  $200\text{m}^2$

Passages and verandahs can be provided suitably. Provide a staircase by following the requirements.

- b) What are the salient features of engineering student's hostel building? [6]

OR

- Q6)** a) Draw a line plan of a Post Office using the following data: [12]

- i) Entrance and moving space -  $30\text{m}^2$
- ii) Public dealing counters - Height 1.6m - 1.8m, width 0.7m - 0.95m
- iii) Post master's room -  $15\text{m}^2$
- iv) Working area for other staff -  $30\text{m}^2$
- v) Post-separation room -  $30\text{m}^2$
- vi) Safe custody area for cash -  $10\text{m}^2$
- vii) Cash transaction room -  $12\text{m}^2$
- viii) Water room and toilet (separate for male and female) -  $7.5\text{m}^2$

- b) What are the salient features of vegetable market building. [6]

- Q7)** a) What is TDR in construction? How does it work? Write a short note on land use zoning and mention the requirements of each. [6]
- b) What is fire escape and explain fire escape elements? [6]
- c) Elaborate need for earthquake resistant structures in relation with-loss of human life; property and infrastructure. [5]

OR

- Q8)** a) What is reverberation time and how is it calculated? [6]
- b) Explain in detail Concept of TDR, List of documents to be submitted to local authority? [6]
- c) What is fire escape and explain any one fire escape elements? [5]

