

22604

24225

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
  - (2) Answer each next main Question on a new page.
  - (3) Illustrate your answers with neat sketches wherever necessary.
  - (4) Figures to the right indicate full marks.
  - (5) Assume suitable data, if necessary.
  - (6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

**Marks**

**1. Attempt any FIVE of the following :**

**10**

- (a) Define smart building.
- (b) Enlist any four types of building services.
- (c) Define escalators and ramp.
- (d) Enlist four components of a lift.
- (e) Write any four fire extinguishing system.
- (f) Write any two necessities of Building Services.
- (g) Write any two provisions for evacuation.

**2. Attempt any THREE of the following :**

**12**

- (a) Explain safety precautions used for installation of lift.
- (b) State working principles of various fire protection system. Explain anyone.
- (c) Explain the necessity of building sanitation.
- (d) Explain any four fire resisting materials.



- 3. Attempt any THREE of the following : 12**
- (a) Explain concept of gray water and reclaimed water.
  - (b) Write any four advantages of rain water harvesting.
  - (c) Explain system of solar water heating as
    - (i) Active direct system
    - (ii) Passive direct system
  - (d) Enlist the names of components of rain water harvesting system.
- 4. Attempt any THREE of the following : 12**
- (a) List four factors affecting selection of artificial lighting in the building.
  - (b) Explain the significance of providing air conditioning system for building.
  - (c) Explain any two planning principles which play an important role to control acoustic in buildings.
  - (d) Explain with sketch slow sand filter.
  - (e) Explain two types of ventilation and its purpose.
- 5. Attempt any TWO of the following : 12**
- (a) Explain design considerations for ramp.
  - (b) Enlist the provisions made for Fire Safety in National Building code for buildings.
  - (c) Explain design considerations for escalators.
- 6. Attempt any TWO of the following : 12**
- (a) Give comparison between one pipe system and two pipe system considering the following points :
    - (i) No. of pipes
    - (ii) Suitability
    - (iii) Economy
    - (iv) Efficiency
    - (v) Line sketch
  - (b) Explain design principles for solar water heating system.
  - (c) Enlist the different types of traps used and draw the neat sketch of any two.
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