

# 22604

**12526**

**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 answer with neat sketches wherever necessary.
- (4) Figures to the right indicate full marks.
- (5) Assume suitable data, if necessary.
- (6) Use of Non-programmable Electronic Pocket Calculator is permissible.
- (7) 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) State the classification of Building as per National Building Code.
- b) State the role of building management service.
- c) List down the different types of lifts.
- d) Enlist the modes of vertical communications in building.
- e) Enlist fire resisting building materials.
- f) Define building services.
- g) State the causes of fire in building.

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- 2. Attempt any THREE of the following: 12**
- a) Explain two components, parts of an escalator.
  - b) Explain the provision for evacuation in case of fire.
  - c) Enlist the types of plumbing fixtures and study their uses.
  - d) State the procedure for carrying out fire safety inspection of existing building.
- 3. Attempt any THREE of the following: 12**
- a) Compare one pipe two pipe system considering the following parameters :-
    - i) Black and grey water collection.
    - ii) Black water discharge.
    - iii) Reuse of grey water.
    - iv) Ventilating pipe.
  - b) Enlist different components of rainwater harvesting. Explain any two.
  - c) Draw the flow diagram of Rainwater harvesting of a building.
  - d) Explain two main components of a solar water heating system.
- 4. Attempt any THREE of the following: 12**
- a) Explain the necessity of ventilation in a building.
  - b) Explain factors affecting selection of artificial lighting.
  - c) Explain the selection of lamp as per room size.
  - d) Explain the design principals of a solar water heating system.
  - e) Explain working of incandescent lamp and its use in building.
- 5. Attempt any TWO of the following: 12**
- a) Explain the design considerations for a ramp along with its gradient calculation.
  - b) Explain the requirement for a fire protection system in an educational building as per National Building Code (NBC).
  - c) Enlist the safety measures to be taken for lifts and escalators.

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**Marks**

**6. Attempt any TWO of the following:**

**12**

- a) Enlist the different types of valves used in plumbing and their suitability.
  - b) Write four applications of a solar water heating system.
  - c) Explain the plumbing system for building water supply. Also, describe the hot and cold water mixing system.
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