

22604

23124

3 Hours / 70 Marks

Seat No.

--	--	--	--	--	--	--	--

- 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) 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 FIVE of the following :

10

- (a) Write two necessity of building services.
- (b) List any four responsibilities of building service engineer.
- (c) Write different types of lifts and its uses.
- (d) Write any two design considerations of ramp.
- (e) Name any four fire extinguishing system.
- (f) Define smart building.
- (g) Write causes of fire in building.



- 2. Attempt THREE of the following : 12**
- (a) Explain two component parts of escalator.
 - (b) Explain provisions for evacuation.
 - (c) Write importance of plumbing for building.
 - (d) Explain fire resisting materials and their properties.
- 3. Attempt THREE of the following : 12**
- (a) Explain concept of gray water and reclaimed water.
 - (b) State four advantages of rain water harvesting.
 - (c) Explain rain water harvesting system for small bungalow.
 - (d) Define following solar water heating system :
 - (i) Active
 - (ii) Passive
 - (iii) Direct
 - (iv) Indirect
- 4. Attempt THREE of the following : 12**
- (a) Write necessity of ventilation in building.
 - (b) Explain four materials used for acoustics.
 - (c) Explain working of incandescent lamp and its use in building.
 - (d) Explain component part of solar water heating.
 - (e) List two types of ventilation and its purposes.
- 5. Attempt TWO of the following : 12**
- (a) State any three design considerations required for lift and escalators each.
 - (b) Explain national building code provision for fire safety.
 - (c) Explain design considerations for ramp.

6. Attempt TWO of the following :**12**

- (a) Differentiate between one pipe system and two pipe system under following points :
- (i) Black and gray water collection
 - (ii) Black water discharge
 - (iii) Reuse of gray water
 - (iv) Preferred conditions
 - (v) Ventilating pipe
 - (vi) Gully traps
- (b) Differentiate between flat plate collector and evacuated tube collector under following points :
- (i) Working principle
 - (ii) Merits
 - (iii) Demerits
 - (iv) Durability
 - (v) Guaranty period
- (c) Recommend the suitability of following valves :
- (i) Gate valve
 - (ii) Non-return valve
 - (iii) Scour valve
 - (iv) Relief valve
-

