



CBCS SCHEME

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21ARC55

Fifth Semester B.Arch. Degree Examination, Dec.2025/Jan.2026 Building Services – III

Time: 3 hrs.

Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 Discuss what is thermal comfort, explain Psychrometric process for achieving thermal comfort, discuss thermal comfort as an 'ends' and cooling systems as a 'means'. (20 Marks)

OR

2 a. Elaborate on need for mechanical ventilation for spaces like Basements, Kitchen and Toilet areas. (10 Marks)
b. Write a note on Energy efficiency and green building policies. (10 Marks)

Module-2

3 Explain with neat sketches conventional window, split and packaged type of Air conditioning systems, discuss their preferred locations and architectural requirements for the equipments. (20 Marks)

OR

4 a. Discuss briefly methodology for selecting climate and context appropriate sustainable cooling systems. (10 Marks)
b. Write detailed note on estimating air handling unit requirements, air flow rate and fan power requirements for evaporative cooling systems. (10 Marks)

Module-3

5 a. Explain in detail with neat sketches types of Elevators system and discuss design considerations like peak handling capacity, average waiting time and lift speed. (10 Marks)
b. Write note on :
(i) Automatic Rescue device for elevators
(ii) Elevator Car interiors and design considerations (10 Marks)

OR

6 Explain with sketches need, application of Escalators and Travelators, discuss calculation of traffic capacity and inclination factor. (20 Marks)

Module-4

7 Explain causes and hazards due to 'Fire', discuss characteristics of combustible and non-combustible materials and classification of buildings types as per NBC. (20 Marks)

OR

8 Write note on :
(i) Discuss passive fire protection and need of escape routes and fire refuge area (10 Marks)
(ii) Compartmentation (05 Marks)
(iii) Fire drive ways and fire signages (05 Marks)

Module-5

9 Explain need of Active fire control means in Building, discuss in detail with sketches Fire sprinklers and Fire hydrants systems **(20 Marks)**

10 Explain risk of fire hazard in high rise buildings and write a note on provision of codes NBC for achieving fire protection in high rise building in India. **(20 Marks)**
