

CBCS SCHEME



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18ARC63

Sixth Semester B.Arch. Degree Examination, June/July 2024 Building Services – III

Time: 3 hrs.

Max. Marks: 100

- Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.
2. Draw neat proportionate labeled sketches where necessary.*

Module-1

- 1 What is mechanical ventilation system? Suggest two suitable mechanical ventilation systems each for the following buildings and explain the systems in detail with sketches :
- Industrial workshop (Wood and Metallurgy)
 - Office building.
- (20 Marks)

OR

- 2 Explain and typical vapour compression refrigeration cycle with sketches in detail. What are the salient differences between vapor compression cycle and vapor absorption cycle?
- (20 Marks)

Module-2

- 3 Discuss any one type of unitary AC system in detail. Explain the required architectural aspects to be taken care of towards installation of same. Support with sketches.
- (20 Marks)

OR

- 4 a. Explain concept of 'CLEAN ROOMS' in AC design. (10 Marks)
b. Suggest a suitable AC system in specialized spaces for one of the following :
- Several rooms and UPS hubs
 - Hospital operation theatres.
- (10 Marks)

Module-3

- 5 a. Describe a typical hydraulic elevator system with a detailed, labeled sketch for a G + 3 building. (10 Marks)
b. As per Stipulated Minimum Standards [NBC] explain design and architectural parameters for lift lobby and lift hoistways. (10 Marks)

OR

- 6 Describe functioning principles and components of an escalator system. Outline the various active and redundant safety features embedded in an escalator. (20 Marks)

Module-4

- 7 Explain classification of buildings as per NBC with respect to fire fighting concerns. Outline the reasons for the basis of classification and suggested fire protection principles. (20 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.

OR

8 Elaborate following passive fire protection systems in a buildings :

- i) Fire escape routes
- ii) Compartmentation
- iii) Refuge areas
- iv) Fire escape stairs and lifts.

(20 Marks)

Module-5

9 For a supermarket in a city, chalk out a suitable fire suppression system ACTIVE METHODS and explain each of the methods with respect to functioning, components, advantages and architectural requirements. (20 Marks)

OR

10 For a proposed 25 – storey building in UB city, Bangalore, device a fire fighting strategy as per NBC and applicable local norms to seek sanction. Elaborate the measures. (20 Marks)
