

# CBCS SCHEME



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21AIRC65

## Sixth Semester B.Arch. Degree Examination, June/July 2024 Building Services – IV (Acoustics & Noise Control)

Time: 3 hrs.

Max. Marks:100

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

### Module-1

- 1 a. Elaborate on the characteristic and measurement of sound with supporting diagram. (08 Marks)
- b. Explain the various acoustical defects possible in enclosed spaces with its causes and remedies. (12 Marks)

OR

- 2 a. Explain reflection of sound and nature of reflection over plane; concave and convex surface. (08 Marks)
- b. What is sound reverberation and reverberation time? Explain how is Sabine's formula relevant in this connection. (12 Marks)

### Module-2

- 3 a. Explain sound articulation index and speech intelligibility relating the two. (10 Marks)
- b. Explain the function of a sound level meter with a sketch and labeling its parts. (10 Marks)

OR

- 4 Discuss about the acoustical material which will enhance the existing spaces. (20 Marks)

### Module-3

- 5 Elaborate on the design considerations for a lecture theatre versus the auditorium meant for orchestra with support of sketches. (20 Marks)

OR

- 6 a. Discuss history of Greek and Roman theaters. (08 Marks)
- b. Elaborate on design recommendation by an architect for OAT on following points :
  - i) Space geometry and visibility
  - ii) Measures to be taken to maintain speech privacy and audibility
  - iii) Sound reinforcement and sound masking suggestions. (12 Marks)

### Module-4

- 7 a. What is environmental noise control? (05 Marks)
- b. Explain mass law and design principles for reduction at and hear source with sketches. (15 Marks)

OR

- 8 a. Explain airborne and structure borne noise with examples. (10 Marks)
- b. What are the ways of isolating noise from structure borne noise? Support with sketches. (10 Marks)

### Module-5

- 9 What are the various sources of industrial noise pollution? Explain any 5 causes. (20 Marks)

OR

- 10 Elaborate on the role of architects and urban planner in shaping the urban sound scape with sketches. (20 Marks)

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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