



CBCS SCHEME

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18ARC73

Seventh Semester B. Arch. Degree Examination, Dec.2025/Jan.2026 Building Services - IV

Time: 3 hrs.

Max. Marks: 100

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

Module-1

1 a. Explain the terms Sound and Distance, inverse square law with neat sketches. (08 Marks)
b. What is Sound Reverberation and Reverberation Time? Explain Sabine's and Eyring's formula relevant in this connection. (12 Marks)

OR

2 Define the following :
a. Pitch and Sound Intensity (05 Marks)
b. Threshold of audibility and pain (05 Marks)
c. Acoustics anomalies in an auditorium support with sketches. (10 Marks)

Module-2

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

OR

4 a. Explain the sound absorbing characteristics of the following with sketches.
— Porous Materials
— Cavity Resonators (10 Marks)
b. Explain the concept of variable sound absorbs with examples and sketches, highlighting its suitability of certain auditoriums. (10 Marks)

Module-3

5 Elaborate on the design considerations for a lecture theatre versus the auditorium intent for orchestra with neat sketches. (20 Marks)

OR

6 Discuss history of Greek and Roman theatres. What are the design differences between both theatres. Explain/elaborate with neat sketches. (20 Marks)

Module-4

7 Explain machine isolation and staggered wall STVD construction with neat sketches. (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 What is environmental noise control? Explain mass law and design principles for reduction at and near source with sketches. (20 Marks)

Module-5

9 Describe the Role of architects and urban planners in shaping the urban sound scape with sketches. (20 Marks)

OR

10 Explain the various sources of industrial noise pollution. What are its effect on workers? Give brief details about the methods in which the pollution can be controlled. (20 Marks)

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