



USN

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

18ARC73

## Seventh Semester B.Arch. Degree Examination, Dec.2024/Jan.2025 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', and '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 a. What is meant by sound reflection? Explain sound reflection from plane, concave and convex surfaces. (08 Marks)
- b. What are acoustical defects? Explain with neat sketches various acoustical defects and different measures to rectify it. (12 Marks)

### Module-2

- 3 a. Explain the concept of floating floors, space absorber and acoustical filter. (10 Marks)
- b. Explain measures of sound insulation for floors and ceiling with neat sketches. (10 Marks)

OR

- 4 a. Explain with neat sketches the working principle of cavity resonators. (08 Marks)
- b. Explain the term sound absorption and sound absorption coefficient. Discuss in detail, the characteristics of typical sound absorbers. (12 Marks)

### Module-3

- 5 Explain the distribution of acoustical material and the suggested absorbing materials as per the IS code 2526 – 1963. (20 Marks)

OR

- 6 a. Explain the various architectural considerations involved in the design of a medium capacity concert hall. (08 Marks)
- b. Discuss in detail the use of IS code 2526-1963 for the design and detailing of an open air theatre. (12 Marks)

### Module-4

- 7 a. List the causes of indoor noises. How can architectural planning help in minimizing the same? Explain. (10 Marks)
- b. Explain the specific measures for controlling the equipment noise in building. (10 Marks)

OR

- 8 a. Explain different types of noise transmission in the buildings. (08 Marks)
- b. What is STC (Sound Transmission Class) ratings? Explain its application in designing an acoustical space. (12 Marks)

**Module-5**

- 9 a. Explain the measures required for industrial noise reduction. (10 Marks)  
b. How a problem of street noise is handled in neighbourhood level? Explain. (10 Marks)

**OR**

- 10 Explain factors responsible for environmental noise and problems due to such noises through examples. Suggest the remedial measures to reduce the noise level in the environment, through sketches and examples. (20 Marks)

\*\*\*\*\*