

CBCS SCHEME



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Sixth 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. Define the terms frequency, Wavelength and pitch of sound. (10 Marks)
- b. What is the threshold of hearing and pain? Explain the term Inverse Square Law. (10 Marks)

OR

- 2 a. A room 20 m long by 25 m wide and 4m high has sound absorption coefficients α 's of 0.30 for walls, 0.02 for the floor and 0.04 for the ceiling. Find the reverberation time T in this space with no sound absorbing treatment. (10 Marks)
- b. What is sound? Explain the relationship of sound intensity and pitch of sound. (10 Marks)

Module-2

- 3 a. What is noise reduction coefficient? Explain its importance in designing an acoustical space. (10 Marks)
- b. What are prefabricated acoustical unit? State examples of the same and the advantages they offer. (10 Marks)

OR

- 4 a. What is cavity or Helmholtz resonators? Explain in detail how can they be applied. (10 Marks)
- b. What is a sound level meter? Explain the concept of frequency weighting (A, B, C weighting) in the SLM. (10 Marks)

Module-3

- 5 a. What is the need and use of sound masking systems in open plan offices? (10 Marks)
- b. What are the design considerations for locating and designing an open air theatre? (10 Marks)

OR

- 6 a. Explain the term raking of seats. Support your answer with relevant sketches. (10 Marks)
- b. Explain the design and detailing for an auditorium. Discuss in detail the use of IS code 2526 – 1963 for the same. (10 Marks)

Module-4

- 7 a. Explain different types of noise transmission in the building. (10 Marks)
- b. Give the construction details of the suspended ceiling for noise control. (10 Marks)

OR

- 8 a. What is the flanking of sound? Explain it through sketches showing different possible paths for flanking in a room. (10 Marks)
b. Explain the different measures taken for noise control and vibration isolation from mechanical equipment. (10 Marks)

Module-5

- 9 a. Explain the construction measures for noise control by enclosures. (10 Marks)
b. Give the construction details of double walls for noise control. (10 Marks)

OR

- 10 a. Explain the different sources of industrial noise. (10 Marks)
b. Mention any five ways in which noise can be controlled by proper town planning. (10 Marks)
