CBCS SCHEME

USN | | | | | | | | | | |

21ARC65

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 paces 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)**

* * * * *