

SECOND YEAR B.ARCH. DEGREE EXAMINATION, APRIL/MAY 2005**ARCHITECTURAL ACOUSTICS**

(1998 Scheme)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.
Answer to be brief and to the point.
Give sketches where ever needed.*

I. Answer any five :

- (a) What is meant by infra sound and ultra sound ? What is the unit for measuring sound pressure levels ?
- (b) Explain the mechanism of sound reflection and the laws related to it.
- (c) Differentiate between 'dead room' and 'Live room'.
- (d) What is meant by impact noise insulation of a floor ?
- (e) What is panel absorber ? Where is it used ?
- (f) What is meant by reverberation ?
- (g) What do you mean by diffraction of sound and what does it depend on ?
- (h) Describe mass law with the help of suitable examples.

(5 × 5 = 25 marks)

- II. (a) What is the difference between decibel and phons ? How are they useful in acoustical measurements.

Or

- (b) Sketch schematically the audible range and thresholds of the ear. Explain the lower and upper thresholds and its relevance.

- III. (a) What is meant by absorption co-efficient of a material ? Explain any one method to find out the absorption co-efficient.

Or

- (b) What is meant by adjustable and functional absorbers ? Explain with examples.

- IV. (a) A hall of size $20 \times 10 \times 6$ m has a reverberation time of 2 seconds. If the optimum reverberation time is 1 sec. Give your suggestions to achieve the optimum level.

Or

- (b) List out the possible acoustical defects associated with enclosed spaces. Suggest remedial measures for each defect.

- V. (a) Suggest the construction details of a dancing floor arranged in the upper floor of a building. Explain how the structure borne sound can be prevented ?

Or

- (b) Explain the step-by-step procedure for the acoustical design of an open-air theatre ?

- VI. (a) How will you ensure sound proofing of a recording studio ? Sketch the details.

Or

- (b) Write a note on different types of micro phones and speakers under mono phonic and stereophonic sound system.

(4 × 15 = 60 marks)