



(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 181419

Roll No.

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B. Arch.

(SEM. IV) THEORY EXAMINATION, 2014-15
ARCHITECTURAL SERVICE - III

Time : 3 Hours]

[Total Marks : 50

- 1 Write short notes on any 4 of the following [10]
- (1) Resonance of sound
 - (2) Sabine's Expression
 - (3) Sound Shadows
 - (4) Dead spots
 - (5) Amplifiers
- 2 A hall has a seating capacity of 800 people; the [10]
volume of the hall is 3350 m^3 . From the following data,
calculate the reverberation time of the hall for vacant
conditions.

S.No.	Material	Area (in m ²)	Absorption
<u>Coefficient</u>			
01	Cement Concrete Floor	500	0.02
02	Jute Carpet	115	0.15
03	Teak Wood Panelling	155	0.10
04	P.O.P. False Ceiling & Wall Panelling	650	0.05
05	Proscenium Opening	27	0.40
06	Vacant Seat	-	0.25/seat
07	Occupied Seat	-	0.32/seat

It is further desired to achieve the reverberation time of 1.0 seconds for $\frac{1}{3}$ occupancy by using Acoustical Tiles. Calculate the area of Acoustical Tiles (with Absorption Coefficient = 0.50), which are proposed for acoustical corrections.

- 3 A Class room, having an octagonal plan with a [10]
pyramidal roof above, is proposed to be constructed in a primary school. It is expected to have a capacity of 30 toddlers, making noise. You being a consultant, are expected to give your recommendations in detail, for acoustical design of the classroom. Support your answer with neat illustrations.

- 4 List common acoustical defects and suggest suitable remedies for them. [10]

OR

- 4 List down properties of good acoustical materials, with relevant examples. [10]
- 5 Identify primary sources of noise for any 2 of the following spaces, and suggest suitable recommendations to control them [10]
- (1) Hospitals
 - (2) Hostels
 - (3) Laboratories and Test Houses
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