Printed Pages : 3

NAR406

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

PAPER ID : 181419

Roll No.

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 volume of the hall is 3350 m^3. From the following data, calculate the reverberation time of the hall for vacant conditions. [10]

S.No.	Material	Area (in m^2)	Absorption Coefficient
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 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. [10]

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