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BAR-039

BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

December, 2017

00422

BAR-039 : ARCHITECTURAL SCIENCES AND SERVICES – II (ILLUMINATION AND ACOUSTICS)

Time : 3 hours *Maximum Marks : 70*

Note : *Part A is* ***compulsory****. Attempt any* ***five*** *questions from Part B. Use of scientific calculator is permitted.*

PART A
(Compulsory)

1. Write short notes on any ***four*** of the following : *4×5=20*

(a) Threshold of Hearing Loss

(b) Sound Transmission Class

(c) Sound Masking

(d) Sky Component

(e) Daylight Factor

PART B

*Attempt any **five** questions from this part.*

2. What is Reverberation Time ? Explain the considerations behind determining optimum reverberation times for cinema theatres and lecture halls. *10*

3. An auditorium of size 35 m × 25 m × 9 m has the following properties of the surfaces :

S.No.	Surface	Area (m^2)	Absorption coefficient
a.	Cement plaster	800	0·02
b.	Concrete floor	700	0·03
c.	Timber floor	200	0·09
d.	Ceiling	600	0·05
e.	Seats	1000	0·16

Find the reverberation time. *10*

4. Write a detailed note on computer applications in planning of building characteristics related to acoustics and artificial lighting. *10*

5. Explain Lumen method for estimation of lighting. *10*

6. Discuss the role of proper orientation of a building in ensuring proper natural lighting conditions inside. Explain the need of artificial lighting even in daytime with the help of an example. *10*

7. Explain the difference between 'Sound' and 'Noise'. How can 'noise' be classified ? Provide some brief examples in this regard. *10*
