No. of Printed Pages : 3

BAR-039

BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

June, 2018

00393

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

Time : 3 hours *Maximum Marks : 70*

Note : *Question number 1 is* ***compulsory****. Answer* ***four*** *more questions from the rest. Use of scientific calculator is permitted.*

1. Write short notes on the following : *14*

(a) Sound Wavelength

(b) Porous Sound Absorbers

(c) Noise Reduction Coefficient

(d) Sky Component

(e) Solar Azimuth Angle

(f) Glare

(g) Polar Curves

2. (a) Distinguish among the following : *6*

(i) hue,

(ii) value, and

(iii) chroma.

(b) What is design sky concept ? *8*

3. What are the tasks and problems for daylighting in hot-dry climates ? How is the building form influenced by these considerations ? *14*

4. (a) Explain the Lumen method for calculation of daylight. *8*

(b) Explain the merits and demerits of *6*

(i) Incandescent lamps

(ii) Fluorescent lamps

(iii) LED lamps

5. What are the important acoustical parameters affecting the design of a multipurpose school auditorium with seating capacities in the range of 1000 to 2000 ? *14*

6. (a) What is meant by Transmission Loss (TL) of sound ? How is it calculated ? *4*

(b) A 3 ft × 7 ft louvered door (Figure 1) which has a TL of 10 dB at 500 Hz is located in one wall of a conference room. The 18 ft long × 8 ft high wall with a TL of 45 dB at 500 Hz is staggered wood stud construction with two layers of gypsum board on both sides. Find the composite TL at 500 Hz for this wall-door construction ? *10*

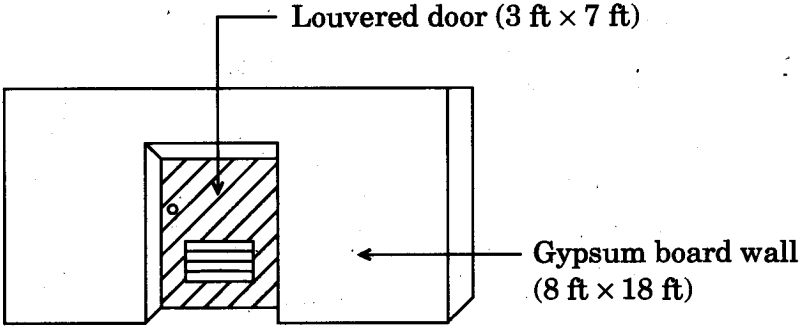

Figure 1