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BAR-039

ILLUMINATION AND ACOUSTICS

00652

Term-End Examination

December, 2011

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

Time : 3 hours *Maximum Marks : 70*

Note : *Section **I is compulsory**. Attempt **any three** questions from section **II and any three** from section **III**. All **questions** carry **equal** marks.*

SECTION - I

5x2=10

1. Explain ***any five*** of the following :

(a) Decibel sound

(b) Audible Frequency

(c) Day Light Factor

(d) Luminous Flux

(e) Transmission coefficient

(f) Sound Intensity

(g) Spectral Power Distribution

SECTION - II

2. (a) What do you understand by lumens and lux levels ? Give examples of Lux levels for some occupancies. **10**

   (b) Give examples of lumen outputs of some luminaires. Explain their output in direct, semidirect and indirect lighting options.

3. How would you achieve qualitative and quantitative requirements for a typical school buildings ? Explain with respect to daylight utilization. **10**

4. What do you understand by "Daylight Factor" ? How would you determine Sky Component and Internally Reflected Component ? How can you control them for effective daylight utilization ? **10**

5. Explain lumen method for artificial lighting. What is the role of mounting light ? Explain with respect to indirect lighting what do you understand by term co-efficient of utilization ? **10**

6. How would you achieve energy conservation in a, say hospital building ? Explain with respect to daylight utilization, heat load control and integration with artificial lighting. **10**

SECTION - III

7. How would you control noise in an offices building abutting a highway ? What will be the role of green belt and other options and how would they be effective ? **10**

8. When would you locate a Diesel Generating set in a building with 2 basements ? Give proper justification. How does the structure bourne noise gets controlled ? **10**

9. (a) What is the role of reverberation time in an auditorium ? How do you determine it and control ? **10**

   (b) Explain terms decibels, sabines and low and high frequency noise. How do you examples these terms in played design of buildings ?

10. What are the common acoustical defects in an auditorium ? Discuss the causes and remedies **10**

11. What do you understand by " Noise Reduction," "Sound Absorption" and "Reverberation Time"? Discuss the relevance of these concepts in building design. **10**
