

SCHOOL OF PLANNING AND ARCHITECTURE, VIJAYAWADA  
SEMESTER END EXAMINATIONS (REGULAR),  
NOVEMBER-2015

**B. ARCH, III YEAR, V SEMESTER**  
**BS-5 BUILDING SCIENCE AND SERVICES**  
**(LIGHTING AND ACCOUSTICS)**

Maximum Marks – 50

Time – 2.00 Hours

- a) Answer any Two questions out of 1 to 4 questions.*  
*b) Question No.5 is compulsory and answer any four out of six sub-questions.*

- Q1. What are the proper considerations for day lighting and artificial lighting in Educational facilities? (15M)
- Q2. a. Elaborate what reverberation is and how it is used in acoustical design. (15M)  
b. Calculate the reverberation time for a home theatre of 14m x 19m x 4m with wood flooring ( $\alpha=0.1$ ), Brick walls ( $\alpha=0.03$ ) and gyp board ceiling ( $\alpha=0.5$ ) at a frequency of 500Hz.
- Q3. What are the general design principles for acoustics? Explain the additional requirements for the design of conference halls. (15M)
- Q4. a) Describe the main sources of day lighting and explain the daylight factor concept in detail. (15M)  
b) Calculate the interior illuminance level for a classroom in Vijayawada.
- Q5. Describe the following: (4x5= 20M)  
a) Luminance  
b) Absorption  
c) Color rendering Index  
d) Visual Acuity  
e) PSALI  
f) Luminous Intensity.