

**BACHELOR OF ARCHITECTURE (B ARCH)**

**Term-End Examination**

**December, 2012**

**BAR-059 : ARCHITECTURAL SCIENCES &  
SERVICES - IV (ENERGY SYSTEMS AND HVAC)**

*Time : 3 hours*

*Maximum Marks : 70*

*Note : Attempt any five questions. All questions carry equal marks. Draw sketches wherever necessary.*

1. (a) Discuss, with neat sketches, the various criteria for the electrical distribution systems for low-rise and high-rise buildings.  
(b) Draw the electrical layout for a residence of two bed rooms, a hall, a kitchen and two toilets.
2. (a) What do you understand by units in electric bill ? Explain.  
(b) Calculate the electric load of the residence mentioned in Q.1 (b) and calculate units considering all fixtures to be used for ten hours a day.
3. (a) "Earthing is a protection from electricity", justify the statement.  
(b) Discuss, with neat sketches, various methods of earthing in a building. Also identify the best of these methods.

4. (a) Draw the layout of a two way switch. Discuss its places of use.  
(b) Discuss the artificial lighting for a theatre and a stadium, with neat sketches.
  5. (a) Discuss the fire fighting bye laws for a public building.  
(b) What do you understand by fire resistant material used in a building ? Suggest the type of materials to be provided in considerations of fire.
  6. (a) Write down the various components of air conditioning system. Explain.  
(b) Explain the method of calculating air-conditioning load of a room. Also suggest the tentative system of air-conditioning for an architect's office.
  7. (a) Differentiate between passenger lifts and vehicular lift.  
(b) Draw the details of a fire lift, showing its various components.
  8. Write short notes on *any two* :
    - (a) Criteria for designing of lifts
    - (b) Fire alarm and fire escape system for high rise buildings.
    - (c) AHU
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