No. of Printed Pages : 2

BAR-059

BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

December, 2016

00422

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.*

1. What are the various distribution systems of electric supply in any residential building ? Support your answer with neat sketches. *14*

2. Draw the electric layout for an Architect's office having the following requirements :

(a) Three Rooms each (6 × 8) sq. mts.

(b) Reception Lobby (4 × 3) sq. mts.

(c) One Conference Hall (8 × 8) sq. mts.

(d) One Toilet (2 × 2·5) sq. mts.

Suggest the various electric fixtures for the above layout. Also calculate the electric load for this office. *14*

3. How is three phase electric supply different from single phase supply of electricity ? Which of the two would you recommend for a public building ? Explain in detail. *14*

4. (a) Explain the important fire regulations for various residential buildings. *7*

   (b) What are the regulations for fire considered for a high rise public building ? *7*

5. Explain the applications of various types of firefighting and extinguishing systems in detail. Draw neat sketches for the same. *14*

6. (a) Define Psychrometric Chart. Explain the relevance of this chart in the design of air-conditioning load for any office building. *7*

   (b) Describe the installation requirements of AHU in a building layout in reference to the ducting systems of the building structures. *7*

7. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

   (a) Electrical Distribution Systems in a Building

   (b) Fire Resistant Building Materials

   (c) Escape Chute

   (d) Return Travel Time of a Lift

   (e) Escalators