

BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

June, 2015

00426

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

Time : 3 hours

Maximum Marks : 70

Note : *Part A is compulsory. Attempt any two questions from each Part B and Part C respectively.*

PART A

1. (a) Write short notes on any **four** of the following : 10
- (i) Overload
 - (ii) Short Circuit
 - (iii) Circuit Breakers
 - (iv) LEDs
 - (v) Fuses
- (b) Explain the working of MCB with a diagrammatic representation along with its usage and functional advantages over conventional fuse. 10

PART B

Attempt any *two* of the following :

2. (a) Discuss the electrical distribution systems in a residential building. Draw neat sketches for the same. $7\frac{1}{2}$
- (b) Discuss with neat sketches, the various systems for electrical wiring in a high rise building, showing LT and HT power supply. $7\frac{1}{2}$
3. (a) Write in detail about the sprinkler head design and activation mechanism. $7\frac{1}{2}$
- (b) Write about the types of sprinkler systems and their advantages and disadvantages. $7\frac{1}{2}$
4. (a) What is Variable Air Volume (VAV) system ? Draw a layout of a typical VAV system. $7\frac{1}{2}$
- (b) Define Psychrometric Chart. Explain the significance of the chart in designing air-conditioning load. $7\frac{1}{2}$

PART C

Attempt any *two* of the following :

5. Discuss the various design considerations for fire protection requirements in high rise buildings. 10
 6. What is an HVAC system ? Explain the functioning of its various components. Write about the basics of HVAC design with respect to comfort principles and other affecting factors. 10
 7. Define Escalators. Write about the escalator configurations including single bank, criss-cross and parallel arrangements. 10
-