

BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

00393

December, 2018

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

Time : 3 hours

Maximum Marks : 70

Note : Answer any **five** questions. Support with neat sketches wherever necessary.

1. (a) Explain the passive fire protection methods to be considered for design in a high rise building. 10
- (b) Explain briefly any **four** of the following : 4
 - (i) Fire sprinkler system
 - (ii) Smoke sensitive detectors
 - (iii) Fire alarm system
 - (iv) Manual call point
 - (v) Hydrant system

2. (a) What is the purpose of using Miniature Circuit Breakers (MCB) in an electrical circuit ? What is the advantage of MCB over conventional fuses ? 4

- (b) Explain the various electrical safety devices used in an electrical circuit and their advantages. 10
3. (a) What is an air handling unit ? Explain its functioning with the support of neat diagrams. 6
- (b) Differentiate between supply air and return air. 2
- (c) Explain the following terms : $3 \times 2 = 6$
- (i) Variable air volume
- (ii) Cooling tower
- (iii) Split air conditioning system
4. (a) Differentiate between lifts and escalators. 7
- (b) Draw a neat labelled diagram of lift well (in section) showing the various components. 7
5. (a) Give a neat sketch for electrical power supply and distribution of a high rise office building. 7
- (b) Explain the role of a transformer in electrical power supply. 7
6. (a) Explain with neat sketches, the Single bank, Criss-cross and Parallel arrangements of escalators. 7
- (b) Write the advantages and disadvantages of each of the above. 7
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