

BACHELOR OF ARCHITECTURE (B.Arch.)

Term-End Examination

00142

December, 2017

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

Time : 3 hours

Maximum Marks : 70

Note : Question no. 1 is compulsory. Attempt any four questions from the rest. All questions carry equal marks.

1. Write short notes on the following :

$$4 \times 3 \frac{1}{2} = 14$$

- (a) Fire-resistant Materials
 - (b) Heat Pump
 - (c) MCB
 - (d) Dumb-waiter
2. Discuss with neat sketches, the electrical distribution system in a high rise office building starting from transformer to individual work-stations. 14
3. Explain the importance of earthing in a building. Describe the fire safety programme followed in and around a multistoried residential building. 14

4. Discuss the functioning and design principles for AHU. What is meant by VAV ? Elaborate the change brought by VAV in modern HVAC systems. 14

 5. Explain the basic criteria for escalator design in a shopping mall with special reference to 'safety control' and 'location'. 14

 6. Prepare an electrical floor plan for an architect's office. Keep provisions for a microwave oven for the pantry, two split ACs, one A-0 size plotter in addition to the usual office appliances and lights. Indicate the number of circuits to be provided in the panel. Specify the size of wire for a service entrance and conduit size. 14
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