

Roll No. ....

Total Pages : 2

BT-8/M-20

38058

DESIGN OF AIR CONDITIONING SYSTEMS

Paper–ME-436E

Time Allowed : 3 Hours]

[Maximum Marks : 100

Note : Attempt five questions in all, selecting at least one question from each Unit. All question carry equal marks.

UNIT–I

1. (a) What is system heat gain ? How are they accounted for ? Give examples. 10
- (b) Discuss the factors on which Solar heat through glass depends. 10
2. Explain the following applications of Air-conditioning in different fields : 20
  - (a) Residential air-conditioning.
  - (b) Industrial air-conditioning.
  - (c) Air-conditioning of vehicle.

UNIT–II

3. (a) Sketch a dual duct variable Air volume system. Show the fans and typical zone. 10

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- (b) Describe a way to control the speed of the fans as the terminal devices reduces air flow to various zones. 10
4. What is all Air system ? Explain the single zone, multi-zone systems and reheat system with neat sketches. 20

### UNIT-III

5. What are the features of a hermetically sealed unit ? Explain the surging phenomenon in Centrifugal compressor. Differentiate between the reciprocating and centrifugal compressor with neat sketches. 20
6. (a) Explain, how the Water cooled condensers are rated and selected. 10
- (b) Define defrosting. List the points to be considered while designing the evaporator. 10

### UNIT-IV

7. (a) Describe the Acoustic and Noise control system. 10
- (b) Explain the pneumatic, electrical and electronics control in detail. 10
8. Explain the Air distribution system with neat sketch. Differentiate between the pan type and ventilation type of air distribution. Discuss the aims of air distribution system design. 20