



B.E/ B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY 2012

MECHANICAL ENGINEERING

35

SEVENTH SEMESTER

ME 9037 – REFRIGERATION AND AIRCONDITIONING

Time : 3 hrs

Max Mark : 100

Answer ALL Questions

Part – A (10 * 2 = 20 Marks)

1. What is reversed Carnot Cycle?
2. What is comfort air-conditioning?
3. How compression is achieved in scroll compressor?
4. What do you mean condensing unit?
5. What are the applications of air washers?
6. Define dew point temperature
7. What are the factors considered for selection of air conditioning systems?
8. What do you mean by internal load in cooling load calculation?
9. Define Seebeck effect and Peltier effect
10. Mention some application of air conditioning in process industry?

Part B (5 * 16 = 80 Marks)

11. Define refrigerant. Classify and explain desirable properties of an ideal refrigerant with examples. How are refrigerants designated?
12. a. Explain with a neat sketch the working principle of screw compressor
(OR)
b. Discuss the salient features of natural convection and forced convection type condenser

13. a. Explain Psychrometric chart and with the same explain the following

Psychrometric process

- (i) Heating and humidification
- (ii) Cooling and dehumidification
- (iii) Cooling and humidification
- (iv) Sensible cooling and sensible heating

(OR)

b. Explain with a neat diagram summer and winter air-conditioning system

14. a. Explain with a neat diagram of packaged air-conditioning system with fan coil unit

(OR)

b. Discuss the working principle of VAV and VRV air-conditioning system.

15. a. Explain the working principle of vapour absorption refrigeration system.

(OR)

b. With a neat sketch list the salient points on thermoelectric refrigeration system