



B.E/ B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL/MAY 2011

AGRICULTURAL AND IRRIGATION ENGINEERING

SIXTH SEMESTER

ME 9037 – REFRIGERATION AND AIRCONDITIONING

Time : 3 hrs

Max Mark : 100

Answer ALL Questions

Part – A (10 * 2 = 20 Marks)

1. Define evaporative cooling
2. Compare air cooled and water cooled condenser?
3. What is the working principle of scroll compressor?
4. What are the impacts of CFCs on refrigeration and air conditioning?
5. Define dew point temperature
6. What is wet bulb temperature?
7. What is the function of thermal distribution system?
8. What are the factors that affect IAQ in a building?
9. What do you understand by a cold chain for food products?
10. What are the applications of thermoelectric refrigerators?

Part B (5 * 16 = 80 Marks)

11. What are the various artificial refrigeration methods and with a neat sketch explain vapour compression refrigeration system
12. a. Classify refrigerant compressor based on their working principle and enumerate salient features of hermetic compressors
(OR)
- b. Discuss the salient features of
(i) Flooded evaporators (ii) Baudelot evaporators and
(iii) Plate surface evaporators

13. a. What do you mean by psychrometry? Explain different psychrometric processes on the skeleton psychrometric chart

(OR)

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

14. a. Discuss the working principle with suitable diagrams, advantages, disadvantages of unitary refrigerant based system.

(OR)

b. Discuss the working principle with suitable diagrams, advantages, disadvantages of variable air volume (VAV) air distribution system.

15. a. Briefly describe the principle operation of vapour absorption refrigeration system.

(OR)

b. List the salient points on solar energy based refrigeration system