



B.E/ B.Tech. (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC 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 the unit of refrigeration
2. Define air-conditioning
3. How compression is achieved in scroll compressor?
4. Mention some commonly used secondary refrigerants
5. What psychrometric process occurs in summer air conditioner?
6. Define humidity ratio
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. What is the principle behind absorption refrigeration system?
10. How air conditioning is more significant in textile industry?

Part B (5 * 16 = 80 Marks)

11. Explain Carnot refrigeration cycle and with a neat sketch explain Vapour Compression Refrigeration System
12. a. Explain with a neat sketch the working principle of centrifugal compressors
(OR)
b. Discuss the salient features of natural convection and forced convection type condenser

13. a. Explain any four types of psychrometric processes using psychrometric chart

(OR)

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

14. a. Explain with a neat diagram of Air-Water air-conditioning system.

(OR)

b. Discuss the working principle of single duct constant volume single zone air-conditioning system.

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

(OR)

b. List the salient points on thermoelectric refrigeration system