

2011/13
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B.E / B.Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, APRIL / MAY 2013

AGRICULTURAL AND IRRIGATION ENGINEERING

SIXTH SEMESTER

ME 9037 – REFRIGERATION AND AIRCONDITIONING

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

PART-A (10 x 2 = 20 Marks)

1. Mention the working principle of vapor absorption refrigeration systems
2. What is the relation between refrigeration and air conditioning?
3. Mention few measure for air conditioning systems to be energy efficient
4. What are the commonly used secondary refrigerants?
5. What do you mean by roll-bond type evaporator
6. What do you mean by Bypass factor?
7. What is the function of thermal distribution system?
8. What do you mean by fan coil unit?
9. Define IAQ
10. What are the various techniques employed for frozen foods

Part – B (5 x 16 = 80 marks)

11. What are early refrigerants? What are the problems faced by them? Classify and explain the desirable properties of ideal refrigerants
12. a) Classify refrigerant compressor based on their working principle and enumerate salient features of hermetic compressors
OR
b) Briefly explain the concept of cold chain for food products?
13. a) With a neat sketch explain winter air conditioning systems
OR
b) Explain the following important psychrometric properties. (i) DBT, (ii) Relative humidity, (iii) Humidity ratio, (iv) WBT, (v) Humidity ratio
14. a) Explain single duct constant volume single zone air conditioning system
OR
b) Explain with a neat diagram of unitary refrigerant based system. Mention its advantages, disadvantages and its application
15. a) Explain with neat sketch thermoelectric refrigeration systems
OR
b) Explain the working principle of vapor jet refrigeration system