

rgpvonline.com

Roll No .....

**MMTP - 203****M.E./M.Tech., II Semester**

Examination, December 2013

**Advance Refrigeration Systems***Time : Three Hours**Maximum Marks : 70**Note:* Attempt any five questions. All questions carry equal marks.

1. a) Define Refrigeration capacity and coefficient of performance in relation to a refrigeration system. Why is the term efficiency not used to indicate the performance in case of refrigerators and heat pump.  
b) Explain the working of an Actual vapour compression refrigeration cycle with the help of p-h and T-S diagram.
2. a) Discuss different types of compressors used in refrigeration system.  
b) Explain with neat sketch, the working principle of Automatic expansion valve. What are the factors which affect the capacity of the valve.
3. a) Explain the constructional features of flooded type evaporator. Why is this evaporator very efficient.  
b) Discuss various types of condensers used in refrigeration system.

4. a) Which elements in refrigerants cause ozone depletion. What is azeotropic mixture refrigerant. Name and discuss one commonly used azeotropic mixture.  
b) What are natural refrigerant. Discuss their potential and limitations.
5. a) Explain the concept of vapour absorption system.  
b) Discuss the desirable properties of refrigerant pairs for vapour absorption system.
6. a) What is cryogenics. Explain the different process employed in production of ultra low temperature.  
b) Describe the process of liquefaction of air.
7. Write short notes on any three: rgpvonline.com
  - a) Advantage of multi-pressure system
  - b) Liquid receiver
  - c) Montreal Protocol
  - d) Solar powered refrigeration system
  - e) Vapour adsorption.
8. a) Explain the working of a two stage vapour compression system with the help of a neat sketch.  
b) Explain the importance of high volumetric efficiency of compressor in a refrigeration system.

\*\*\*\*\*