

Code No: C9101**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****M.Tech I Semester Examinations, April/May-2012****REFRIGERATION****(HEATING VENTILATION & AIR CONDITING)****Time: 3hours****Max. Marks: 60****Answer any five questions****All questions carry equal marks**

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- 1.a) Draw neatly the presentation of processes on p-h diagram of vapour compression system.
- b) An Ammonia refrigerator works between -6.7°C and 26°C . The vapour is dry-saturated at the end of compression. Calculate
- Theoretical Cop
 - Power required to drive the compressor if the cooling capacity of the refrigerator is 5 tons

Temp ($^{\circ}\text{C}$)	Specific enthalpy(kj/kg)		Specific entropy(kJ/kg k)	
	Liquid(hf)	Saturated Vapour(hg)	Liquid(sf)	Saturated (sg)
-6.7	-29.26	1262.36	0.1087	4.7401
26.7	124.56	1291.62	0.4264	4.3263

- 2.a) Draw neatly the cycle for producing dry-ice and explain its working .
- b) Briefly explain the cycle on p-h diagram for the production of solid CO_2 .
- 3.a) Describe with a neat sketch the working of Vapour absorption system. Name the various parts.
- b) Sketch and explain the working of Electrolux, refrigerator.
- 4.a) Describe with a neat sketch of daisy plant. Name the various parts.
- b) Discuss the type of refrigerator system in petroleum refineries.
- 5.a) What is a refrigerant? Briefly discuss the various primary and secondary refrigerants.
- b) What are the desirable properties of a refrigerant? Explain.
- 6.a) What are the factors considered in selecting the refrigeration system for Aeroplane?
- b) Briefly explain the working of steam-jet refrigeration system.
- 7.a) Describe with a neat sketch the working of three stage cascade system with p-h diagram.
- b) What is compound compression? Explain with one diagram.
8. Write short notes on:
- Vertex tube refrigeration
 - Industrial refrigeration-classical industry
 - Inter cooling.
