

Code No: D9104

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH II - SEMESTER EXAMINATIONS, APRIL/MAY 2012
REFRIGERATION & A/C EQUIPMENTS & CONTROL
(HEATING VENTILATION AND AIR CONDITIONING)**

Time: 3hours**Max. Marks: 60**

**Answer any five questions
All questions carry equal marks**

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- 1.a) Derive an expression for volumetric efficiency of reciprocating compressor. Explain with PU diagram.
- b) What are the factors affecting the performance of reciprocating compressor? Explain in detail.
- 2.a) What is the method of lubrication for compressors? Briefly explain.
- b) Briefly explain the common required properties of lubricating oil in refrigeration system.
- 3.a) What is maintenance of cooling towers? Briefly explain the different types of maintenance techniques.
- b) Explain the following
 - i) Evaporative condenser
 - ii) Cooling ponds.
- 4.a) What is the difference between Natural convection and Forced Convection Evaporators? Explain clearly.
- b) Sketch and explain the working of Secondary Evaporators. Name the various parts.
- 5.a) What is low-side float system and high-side float system? Explain with neat sketches.
- b) Briefly explain the suction piping arrangements for refrigeration system.
- 6.a) What is the capacity control of centrifugal compressors? Explain in detail.
- b) Briefly discuss compressor surging.
- 7.a) Sketch and explain the working of automatic defrosting.
- b) What are the leakages in refrigeration system? What are the remedies?
8. Write short notes on:
 - a) Rotary compressors
 - b) Water treatment in expansion devices.
