

**DIPLOMA VIEP MECHANICAL ENGINEERING
(DMEVI)**

Term-End Examination

June, 2014

BIMEE-032 : REFRIGERATION SYSTEM

Time : 2 hours

Maximum Marks : 70

Note: Attempt *any five* questions. All questions carrying equal marks. Use of calculator is *permitted*.

1. (a) Explain coefficient of performance and one tonne of refrigeration. **7+7**
(b) Describe with neat diagram working of the bell - Coleman cycle.
2. (a) Describe Global Warming Potential (GWP). **7+7**
(b) Explain steam jet refrigeration system with the help of neat sketch.
3. (a) Discuss the effect of the following on the performance of vapour compression system. **7+7**
(i) Effect of superheating
(ii) Effect of sub - cooling of liquid
(b) What is the difference between multi stage and cascade refrigeration systems ?
4. (a) Differentiate between primary and secondary refrigerants. **7+7**
(b) Enumerate the desirable properties of an ideal refrigerant.

5. (a) Give the comparison between vapour absorption and vapour compression refrigeration system. 7+7
(b) Explain the function of capillary tube.
6. In a 18 - TR absorption refrigeration system the heating in generator is carried out by using steam at 3 bar and 85% dry. The refrigeration temperature is -10°C . The condensation of the refrigerant is carried out at 30°C using cooling water. Determine : 14
(a) Maximum possible cop of the system
(b) Quantity of steam required per hour to run the plant if the system leaves the generator as saturated water at some pressure. Assume relative Cop = 0.4
7. Explain with neat diagram the working of automatic periodic - defrosting system and thermal defrosting system. 14
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