

**DIPLOMA VIEP MECHANICAL ENGINEERING
(DMEVI)**

Term-End Examination

December, 2013

BIMEE-032 : REFRIGERATION SYSTEM

Time : 2 hours

Maximum Marks : 70

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

1. (a) Define the following : 7+7
 - (i) Actual cop
 - (ii) Theoretical cop
 - (iii) Relative cop
- (b) State the functions of the following parts of a simple vapour compression system :
 - (i) compressor
 - (ii) condenser

2. (a) Describe the process of boot strap evaporative type air refrigeration system with neat diagram. 7+7
- (b) Describe ozone depletion potential (ODP).

3. (a) Explain the functions of thermostatic expansion valve. 7+7
- (b) What are the advantages and disadvantages of steam jet refrigeration system over other type of refrigeration system ?

4. (a) What are the advantages of Cascading Refrigeration systems ? 7+7
(b) Describe briefly the method used for liquidification of hydrogen.
5. Draw a neat diagram of lithium-bromide water absorption refrigeration system and explain its working. 14
6. (a) Define a refrigerant. How are refrigerants classified ? 7+7
(b) A refrigerating system operates on the reversed carnot cycle. The higher temperature of the refrigerant in the system is 35°C and the lower temperature is 15°C . The capacity is to be 12 TR. Neglect all losses. Determine
(i) Co-efficient of performance
(ii) Heat rejected from the system per hour
(iii) Power required in kW.
7. Explain with neat diagram two stage compression with inter-cooling and sub-cooling by external cooling source. 14
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