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SECTION – D

8. Explain the different types of compressor with their performance curve. 20

9. Explain the different types of evaporators with their diagram. 20

Roll No. .....

24477

B. Tech. 7th Semester (ME)

Examination – December, 2016

REFRIGERATION & AIR CONDITIONING

Paper : ME-403-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the question, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt any ***five*** questions. Question No. 1 is ***compulsory*** and one question must be attempt from each Section.

1. (a) Define the refrigerant and its classification.

   (b) What are the merit of vapour absorption refrigeration system ?

   (c) What are the source of cooling load ?

   (d) Explain the properties of Moist air.

   (e) What do you mean by actuators ? 5 × 4 = 20

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SECTION – A

2. What do you mean by the following :

(a) Cryogenics 5

(b) Method of Refrigeration 10

(c) Secondary refrigerant. 5

3. A refrigerating machine working on reversed carnot cycle consumes 5.5 km for producing refrigerating effect of 940 KJ/min for maintaining a region at –38°C. Determine :

(i) C. O. P. of the refrigerating machine.

(ii) Higher Temperature of cycle

(iii) Amount of heat delivered in KJ/min. When this device is used as an heat pump. 20

SECTION – B

4. Explain the principle, working, analysis merit and demerit of steam jet refrigeration system. 20

5. A refrigeration works between –7°C and 27°C. The vapour is dry at the end of adiabatic compression. There is no under cooling and evaporation is by throttle valve. Determine. 20

(i) The Co-efficient of performance.

(ii) Power of the compressor to remove 180 KJ/min the properties of the refrigerant are as under :

	Enthalpy (KJ/Kg		Entropy (KJ/Kg K)	
Temp. (°C)	Liquid (hf)	Latent (hfg)	Liquid (sf)	Vapour (sg)
–7	–30	1298	–0.108	4.75
27	115	1173	427	4.33

SECTION – C

6. The atmospheric conditions are 20°C and specific humidity of 0.0095 kg/kg of dry air. Calculate the following : 20

(i) Partial pressure of Vapour

(ii) Relative Humidity

(iii) Dew Point Temperature.

7. (a) Explain the Heat transfer Through structure. 10

(b) What do you mean by solar radiation ? 10

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