C-16S-M-506(A)

5899

BOARD DIPLOMA EXAMINATION, (C-16S)

NOVEMBER - 2019

DME - V SEMESTER EXAMINATION

REFRIGERATION & AIR CONDITIONING

Time : 3 Hours] [Total Marks : 80

PART - A

3×10=30

Instructions : *(1) Answer ALL questions.*
(2) Each question carries THREE marks.
(3) Answer should be brief and straight to the point.

1 Convert 1500 Joule/min into Ton of refrigeration.

2 What is the function of accumulator in Vapour Compression Refrigeration System.

3 Why ammonia - water system is most prominently used in Vapour Absorption Refrigeration System.

4 What is a drier ? Why it is used in Vapour Compression Refrigeation System ?

5 List out any Six commonly used refrigerants. $6\times\frac{1}{2}=3$

6 What is comfort chart ?

7 Represent dehumidification on psychrometric chart.

8 Define the term specific humidity and relative humidity. $1\frac{1}{2}+1\frac{1}{2}=3$

9 Define : $1\frac{1}{2}+1\frac{1}{2}=3$

(a) Wet bulb temperature.
(b) Dry bulb temperature.

10 How can you detect leakage of ammonia ?

PART - B

10×5=50

Instructions : *(1) Answer any FIVE questions.*
(2) Each question carries TEN marks.
(3) Answer should be comprehensive and criterion for valuation is the content but not the length of the answer.
(4) Use of psychometric chart is permitted.

11 Explain working of reverse carnot refrigeration cycle with neat sketch.

12 Explain the factors affecting performance of Vapour Compression Refrigeration System.

13 Explain with a neat sketch the working of Electrolux vapour absorption. http://www.sbtetonline.com

14 Explain with a neat sketch, the working of hermetic compressor.

15 Describe the process of production of dry ice with a legible sketch.

16 (a) Explain briefly the extended plenum duct system used for distribution of air in air conditioning. 5

(b) Describe briefly about viscous filters. 5

17 Using psychrometric chart find change in enthalpy when humid air at 32°C DBT and 20°C WBT is cooled to 18°C DBT without removal of moisture. Also find RH and DPT of air in the final state. 6+2+2

18 Explain with a neat sketch, working of a winter air conditioning system under cold and dry outdoor conditions.