



C16-M-503

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BOARD DIPLOMA EXAMINATION, (C-16)

MARCH/APRIL—2021

DME - FIFTH SEMESTER EXAMINATION

REFRIGERATION AND AIR CONDITIONING

Time : 3 hours ]

[ Total Marks : 80

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PART—A

3×10=30

- Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed five simple sentences.

1. Write any six applications of refrigeration.
2. What is wet compression? Write any two disadvantages of wet compression.
3. State the purpose of flash chamber and accumulator in vapour compression system.
4. Why ammonia used as a common refrigerant in vapour absorption refrigeration system?
5. What is the function of expansion device in refrigerating system?
- \* 6. What is the function of drier in refrigerating system? List out different types of driers.
7. State the differences between primary and secondary refrigerants.
8. Define the term air conditioning.
9. State the function of (a) fan and (b) duct in air conditioning system.
10. State the advantages of unitary air conditioning system.

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## PART—B

**Instructions :** (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and criterion for valuation is the content but not the length of the answer.

- 11.** Describe air refrigeration system working on Bell Coleman cycle with a neat sketch. 10
- 12.** Explain the effect of sub cooling and super heating of refrigerant on COP of vapour compression refrigeration system with the help of P-H diagram. 10
- 13.** Explain the working principle of Electro lux refrigerating system with a neat sketch. 10
- 14.** (a) Explain the working of flooded type evaporator with a neat sketch. 5  
(b) Write any four differences between air cooled condensers and water cooled condensers. 5
- 15.** Draw a neat sketch of an ice plant layout and explain how ice is produced. 10
- 16.** (a) Explain the working of electrostatic filter with a neat sketch. 5  
(b) List out the characteristics of good air distribution system. 5
- 17.** (a) Define : (i) psychometry and (ii) relative humidity. 4  
(b) Find dew point temperature, relative humidity and specific humidity of moist air at dry bulb temperature of 30 °C and wet bulb temperature of 20 °C. 6
- 18.** Explain the working of winter air conditioning system with the help of neat sketch. 10

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