



C09-M-606 A

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BOARD DIPLOMA EXAMINATION, (C-09)

MARCH/APRIL—2018

DME—SIXTH SEMESTER EXAMINATION

REFRIGERATION AND 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) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Draw T-c diagram of Bell-Coleman refrigeration cycle and write an expression for COP in terms of temperatures.
2. Define (a) refrigerating effect and (b) COP.
3. Write any six desirable properties of ideal refrigerant.
4. What is meant by dry compression and wet compression?
5. What is the important role of hydrogen in electrolux refrigeration system?
6. What is the function of solenoid valve in a refrigeration system?
7. What is the function of an evaporator in a refrigeration system?

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8. What is the <sup>\*</sup> difference between hermetically sealed and open-type compressor?
9. Write any six applications of air-conditioning.
10. Define the terms DBT and WBT.

**PART—B**

10×5=50

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

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

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

11. Explain air refrigerator working on a Bell-Coleman cycle with a line diagram.
12. Explain the principle of eletrolux refrigerator with a neat sketch.
13. (a) What are the advantages and disadvantages of vapour compression refrigeration system over air refrigeration system? 5
- (b) Represent vapour compression cycle on T-c and P-H diagrams and write an expression for its COP in terms of enthalpies. 5
14. Describe the domestic refrigerator with the help of a line diagram.
15. Write the properties of Freon-12 and Freon-22.
16. (a) Draw the neat sketch of wet filter and explain its working.
- (b) Explain upward air distribution system with a neat sketch.
17. List out various psychrometric processes and explain in detail the process of cooling and dehumidification with a neat sketch.
18. Explain the winter air-conditioning system with a neat sketch.

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