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C16-M-503

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BOARD DIPLOMA EXAMINATION, (C-16)

JUNE/JULY—2022

DME - FIFTH SEMESTER EXAMINATION

REFRIGERATION AND AIR-CONDITIONING

Time : 3 hours]

[Total Marks : 80

PART—A

- 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. Define (a) ton of refrigeration and (b) COP. 1½+1½
2. State the purpose of flash chamber and accumulator in vapour compression system. 3
3. State any three advantages of vapour compression system over air refrigeration system. 3
4. Write the use of analyzer and rectifier in vapour absorption system. 3
5. What is hermetic compressor? State its applications. 3
6. What is capillary tube? State its function. 3
7. State any six desirable properties of refrigerants. 3
8. List out the factors which effect the human comfort. 3
9. List out the characteristics of good air distribution system. 3
10. State the advantages of central air-conditioning system. 3

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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. Draw P - V and T - S diagrams of reversed Carnot refrigeration cycle and derive the equation for COP. 10
12. Explain the effect of condenser pressure and evaporating pressure on COP of vapour compression refrigeration system with the help of P - H diagram. 10
13. Draw the line diagram of vapour absorption refrigeration system and explain its principle of working. 10
14. (a) Explain the working of vane type rotary compressor with a neat sketch. 5
(b) What is the function of condenser? How do you classify the condensers? 5
15. Explain the working of water cooler with a neat sketch. 10
16. Describe any two types of duct systems employed to supply conditioned air to outlets. 10
17. (a) List out any six psychometric processes. 3
(b) Define (i) dew point temperature and (ii) relative humidity. 4
(c) What is psychometry? State the applications of psychometric principles. 5
18. Explain summer air-conditioning systems with a neat sketch. 10

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