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5th Sem / Mechanical Engineering
Subject : Refrigeration & Air-Conditioning

Time : 3 Hrs. **M.M. : 100**

SECTION-A

Note: Multiple choice questions. All questions are compulsory. (10x1=10)

Q.1 Air refrigeration cycle is used in

- a) Commercial Refrigerators
- b) Domestic refrigerators
- c) Gas liquefaction
- d) Air Conditioning

Q.2 The ratio of high temperature to low temperature for reversed carnot refrigerator is 1.25. The C.O.P. will be.

- a) 2
- b) 3
- c) 4
- d) 5

Q.3 The co-efficient of performance of a domestic Air Conditioner is

- a) Equal to 1
- b) Less than 1
- c) More than 1
- d) None of these

Q.4 Sub cooling is a process of cooling the refrigerant in vapour compression system.

- a) After compression
- b) Before compression
- c) Before throttling
- d) After throttling

Q.5 Which of the following belong to the inorganic group of refrigerants?

- a) Propylene
- b) Ethane
- c) Carbon dioxide
- d) Propane

Q.6 Which of the following refrigerant has the lowest freezing point?

- a) R-12
- b) R-22
- c) R-717
- d) R-134a

Q.7 Vapour absorption system makes use of

- a) Kinetics energy
- b) Potential energy
- c) Mechanical energy
- d) Heat energy

Q.8 The natural convection air - cooled condenser are used in

- a) Domestic refrigerators
- b) Water coolers
- c) Room air conditioners
- d) All of these

Q.9 In ice plant ,the material of pipes used with primary refrigerant ammonia is

- a) Copper
- b) Brass
- c) Aluminium
- d) Iron and Steel

Q.10 A split air-conditioner does not have provision for

- a) Re-circulation of Air
- b) Ventilation of Air
- c) Cleaning of Air
- d) Exhaust of Air

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SECTION-B

Note : Objective type questions. All questions are compulsory. (10x1=10)

- Q.11 Define refrigerated system.
- Q.12 Define one ton of refrigeration.
- Q.13 Write the full form of C.O.P.
- Q.14 What is the chemical name of R-717?
- Q.15 What is the chemical formula of R-718?
- Q.16 Define the term of Psychrometry.
- Q.17 Define latent heat.
- Q.18 Define metabolic rate for a human body.
- Q.19 Name two types of water cooled condensers.
- Q.20 Give full form of D.P.T.

SECTION-C

Note : Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Explain liquid gas refrigeration.
- Q.22 Write a short note on steam jet refrigeration system.
- Q.23 Classify refrigerant.
- Q.24 Write the functions compressor.
- Q.25 Write five properties of R-134a.
- Q.26 Write the advantages of Air-Conditioner.
- Q.27 Explain the working of reciprocating Compressor.

- Q.28 Explain, in brief, Dry Bulb Temperature.
- Q.29 Explain split Air Conditioning.
- Q.30 Write the at least ten application of refrigeration.
- Q.31 Explain the working of thermostat switch.
- Q.32 Define saturated air specific humidity.
- Q.33 Write the functions of expansion valves.
- Q.34 Write the advantages of solar power refrigeration system.
- Q.35 Explain the principle of vapour absorption system.

SECTION-D

Note : Long Answer type question. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain with help of neat diagram theory and working of rotary compressor.
- Q.37 Explain the construction and working of domestic electrolux refrigeration system with the help of neat sketch.
- Q.38 Explain the principle parts of a simple vapour compression refrigeration system.