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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

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- 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.

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- 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.

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