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5th Sem / Branch : Mechanical Engg.
Sub.: Refrigeration & Air Conditioning

Time : 3Hrs. M.M. : 100

SECTION-A

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

Q.1 In a refrigeration cycle, the entropy _____ during compression. (CO2)
a) Decreases
b) Increases
c) May Increase or decrease
d) Remains constant

Q.2 The refrigerant, which is commonly used in window air conditioner is : (CO8)
a) R-22 b) R-12
c) R-502 d) R-13

Q.3 Wet bulb depression for saturated air is (CO3)
a) Positive
b) Negative
c) Zero
d) May be positive or negative

Q.4 Sub cooling _____COP of a refrigeration system. (CO2)
a) Increases
b) Decreases
c) May increase or decrease
d) Remains constant

Q.5 The condensing medium used in evaporative condenser is (CO1)
a) Air only b) Water only
c) Both Air and Water d) None of these

Q.6 A vapour absorption system:
a) Gives quiet operation
b) Gives noisy operation
c) Cools below zero degree
d) None of these

Q.7 In an air conditioning system, these is simultaneous control of (CO1)
a) Temperature and humidity
b) Temperature humidity, purity and movement of air
c) Temperature and purity of Air
d) None of these

Q.8 The condenser used in domestic refrigerator is : (CO1)
a) Natural convection air cooled
b) Forced convection air cooled
c) Water cooled
d) Can be any of these

Q.9 The flooded type of evaporator have : (CO1)
a) Less heat transfer rate than that of DX type
b) Have high heat transfer rate than that of DX type
c) Same as that of DX type
d) None of these

Q.10 The difference between DBT and dew point temperature is known as (CO3)

a) Dew point depression
b) Wet bulb depression
c) Dry bulb depression
d) None of these

SECTION-B

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

Q.11 Define air conditioning. (CO1)
Q.12 Define COP. (CO1)
Q.13 Name any two secondary refrigerant. (CO8)
Q.14 What is humidification? (CO4)
Q.15 Define sensible heating. (CO4)
Q.16 What is capillary tube? (CO1)
Q.17 Define latent heat of vapourisation. (CO3)
Q.18 Define wet bulb depression. (CO3)
Q.19 Define WBT. (CO3)
Q.20 What is SHF. (CO4)

SECTION-C

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

Q.21 Differentiate between COP and efficiency. (CO1)
Q.22 Briefly explain the effect of superheating on COP of a refrigeration system. (CO2)
Q.23 Write properties of R-134a. (CO8)
Q.24 Mention the advantage of auto defrosting. (CO5)

Q.25 What are the principle parts of simple vapour compression system? (CO1)
Q.26 Give the properties of ideal refrigerant. (CO8)
Q.27 What is room sensible heat factor. (CO4)
Q.28 Explain the term degree of saturation. (CO3)
Q.29 Explain the working principle of vapour absorption system. (CO1)
Q.30 What are water cooled condenser? Explain any one. (CO1)
Q.31 What is sling psychrometer? (CO4)
Q.32 Explain cooling and dehumidification process on psychrometric chart. (CO4)
Q.33 What is psychrometry? Explain its importance. (CO3)
Q.34 Explain the working of simple vapour absorption system. (CO1)
Q.35 Differentiate between vapour absorption and vapour compression refrigeration system. (CO1)

SECTION-D

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

Q.36 What is an evaporator? What are its various types? Explain two basic type of evaporator. (CO1)
Q.37 Explain automobile air conditioning. (CO1)
Q.38 What is solar power refrigeration system? Explain its working with the help of diagram. Also mention its advantages and disadvantages. (CO1)