

- Q.26 Explain Evaporative refrigeration. (CO1)  
 Q.27 Explain the working of overhead protector. (CO5)  
 Q.28 Write advantages of solar power refrigeration system over vapour compression system (CO4)  
 Q.29 Explain low side float valve with the help of neat sketch (CO5)  
 Q.30 Explain sensible cooling (CO6)  
 Q.31 Explain the necessity of vapour compression refrigeration system (CO2)  
 Q.32 Draw psychrometric chart (CO6)  
 Q.33 Compare air cooled and water cooled condensers (CO5)  
 Q.34 Explain effect of superheating the vapour (CO2)  
 Q.35 Write the advantages and disadvantages of split air conditioner (CO7)

#### **SECTION-D**

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

- Q.36 Explain window type room air conditioner with the help of neat sketch (CO7)  
 Q.37 Explain domestic Electrolux refrigeration system with the help of neat sketch (CO4)  
 Q.38 Explain the working of thermostatic expansion valve with diagram (CO5)

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#### **5th Sem / Mech Engg. (MSIL)**

#### **Subject:- Refrigeration and Air Conditioning**

Time : 3Hrs. M.M. : 100

#### **SECTION-A**

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

- Q.1 On ton of refrigeration is equal to (CO1)  
 a) 120 KJ/min.      c) 420 KJ/min.  
 b) 620 KJ/min.      d) 210 KJ/min.  
 Q.2 Sub-cooling is a process of cooling the refrigerant in vapour compression system (CO2)  
 a) after compression    c) before throttling  
 b) before compression    d) After throttling  
 Q.3 The boiling point of NH<sub>3</sub> is (CO3)  
 a) -29°C                c) -77.7°C  
 b) -33.3°C              d) -101.26°C  
 Q.4 Vapour absorption system makes use of (CO4)  
 a) kinetic energy        c) mechanical energy  
 b) potential energy      d) heat energy  
 Q.5 Room temperature maintained in summer by window type air conditioner is (CO7)  
 a) 5°C to 7°C            c) 17°C to 19°C  
 b) 12°C to 15°C        d) 23°C to 25°C

- Q.6 In a refrigeration system, the expansion device is connected between the (CO5)  
 a) Compressor and condenser  
 b) Condenser and receiver  
 c) receiver and evaporator  
 d) evaporator and compressor
- Q.7 In an ice plant, the material of pipes used with primary refrigerant ammonia is (CO3)  
 a) copper  
 b) brass  
 c) aluminium  
 d) iron and steel
- Q.8 The natural convection air-cooled condensers are used in (CO5)  
 a) domestic refrigerators  
 b) water coolers  
 c) room air-conditioners  
 d) All of the above
- Q.9 The difference between dry bulb temperature and dew point temperature is (CO6)  
 a) dry bulb depression c) dew point depression  
 b) wet bulb depression d) apparatus dew point
- Q.10 C.O.P of domestic air conditioner as compared to that of domestic refrigerator is (CO2)  
 a) lower c) same  
 b) higher d) Un-predictable

## SECTION-B

- Note:** Objective type questions. All questions are compulsory. (10x1=10)
- Q.11 Write the chemical name of refrigerant R134-a (CO3)
- Q.12 Write the full form of DBT (CO6)
- Q.13 What is the function of expansive valve (CO5)
- Q.14 Define refrigeration effect (CO1)
- Q.15 Name different types of condensers (CO5)
- Q.16 Define saturated air (CO6)
- Q.17 Define primary refrigerants (CO3)
- Q.18 Define C.O.P (CO1)
- Q.19 Name the three fluids used in domestic electrolux refrigeration system (CO4)
- Q.20 Superheating of suction vapour \_\_\_\_\_ the C.O.P. (CO2)

## SECTION-C

- Note:** Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)
- Q.21 Draw the p-h diagram of simple vapour compression refrigeration cycle (CO2)
- Q.22 Name different methods of refrigeration (CO1)
- Q.23 Write the properties of an ideal refrigerant (CO3)
- Q.24 Explain the working of centrifugal compressor with diagram (CO5)
- Q.25 Explain cooling and dehumidification (CO6)