School of Mechanical Engineering
Mechanical Engineering
ETE - Jun 2023

Time : 3 Hours   **Marks : 50**

Sem VI - BTME3067 - Refrigeration and Air Conditioning
Your answer should be specific to the question asked
Draw neat labeled diagrams wherever necessary

1.	Discuss the psychrometry terms	K2 CO5 (2)
2.	Discuss the slecting parameters of eco-friendly refrigerants.	K2 CO3 (2)
3.	A refrigeration machine of 6 tones capacity working on Bell coleman cycle has an upper limit pressure of 5.2 bar. The pressure and temperature at the start of the compression are I bar and 18°C respectively. The cooled compressed air enters the expander at 41°C. assuming both expansion and compression to be adiabatic with an index of 1.4. Calculate:- Co-efficient of performance	K2 CO2 (2)
4.	Discuss the following terms-	K2 CO1 (2)

COP_theoritical
COP_carnot
COP_II

5.	Discuss the advantages and disadvantages of compound refrogeration.	K2 CO4 (2)
6.	Discuu the novel cooling system for waste heat utilisation.	K3 CO6 (6)
7.	Discuss the Boot-Strap Air refrigeration system	K3 CO1 (5)
8.	Discuss the balance of system of VCRS in following fundamental parts	K3 CO2 (5)

compressor
condenser
evaporator
expansion valve

9.	Illustrate the VARS system and its COP with proper temeprature balance diagram.	K4 CO3 (8)
10.	Explain the By pass factor of heating and cooling coil with suitable expression and schematic, also nurrate the coil efficicency.	K4 CO5 (8)
11.	Describe the three stage compression with flash chamber in following terms-	K4 CO4 (8)

1-vcrs schemastic
2-p-h diagram
3-refrigeration effect
4-COP