

<b>Discipline:-</b> Mechanical Engg.	<b>Semester:-</b> 5 <sup>th</sup>	<b>Name of the Teaching Faculty:-</b> Er. SANKAR PRASAD PRADHAN
<b>Subject:-</b> REFRIGERATION AND AIR CONDITIONING	<b>No. Of days/week class allotted -</b> 05	<b>Semester from:</b> 15.09.2022 To: 22.12.2022
		No. Of weeks:- 15
<b>Week</b>	<b>No. Of Period</b>	<b>Theory Topics</b>
15.09.2022 To 17.09.2022	1 <sup>st</sup>	Definition of refrigeration and unit of refrigeration
	2 <sup>nd</sup>	<b>Vishwakarma Puja</b>
19.09.2022 To 24.09.2022	1 <sup>st</sup>	Definition of COP, Refrigerating effect (R.E )
	2 <sup>nd</sup>	Principle of working of open and closed air system of refrigeration
	3 <sup>rd</sup>	Calculation of COP of Bell-Coleman cycle and numerical on it.
	4 <sup>th</sup>	Solve the problem and calculate cop on BCC
	5 <sup>th</sup>	schematic diagram of simple vapors compression refrigeration system'
26.09.2022 To 01.10.2022	1 <sup>st</sup>	Cycle with dry saturated vapors after compression.
	2 <sup>nd</sup>	Cycle with wet vapors after compression. Cycle with superheated vapors after compression
	3 <sup>rd</sup>	Cycle with superheated vapors before compression
	4 <sup>th</sup>	Cycle with sub cooling of refrigerant
	5 <sup>th</sup>	Representation of above cycle on temperature entropy and pressure enthalpy diagram
03.10.2022 To 08.10.2022	<b>DURGA PUJA HOLIDAYS</b>	
10.10.2022 To 15.10.2022	1 <sup>st</sup>	Numerical on above (determination of COP, mass flow)
	2 <sup>nd</sup>	Simple vapor absorption refrigeration system
	3 <sup>rd</sup>	Practical vapor absorption refrigeration system
	4 <sup>th</sup>	COP of an ideal vapor absorption refrigeration system
	5 <sup>th</sup>	Numerical on COP of Vapor cycle
17.10.2022 To 22.10.2022	1 <sup>st</sup>	Principle of working and constructional details of reciprocating and rotary compressors
	2 <sup>nd</sup>	Centrifugal compressor only theory and Important terms.
	3 <sup>rd</sup>	Hermetically and semi hermetically sealed compressor
	4 <sup>th</sup>	Principle of working and constructional details of air cooled and water cooled condenser
	5 <sup>th</sup>	Heat rejection ratio. and Cooling tower and spray pond.

Week	No. Of period	Theory Topics
24.10.2022 To 29.10.2022	1 <sup>st</sup>	<b>Diwali</b>
	2 <sup>nd</sup>	Principle of working and constructional details of an evaporator
	3 <sup>rd</sup>	Types of evaporator
	4 <sup>th</sup>	Bare tube coil evaporator, finned evaporator, shell and tube evaporator
	5 <sup>th</sup>	Expansion valves and Capillary tube
31.10.2022 To 05.11.2022	1 <sup>st</sup>	Automatic expansion valve
	2 <sup>nd</sup>	Thermostatic expansion valve
	3 <sup>rd</sup>	Defination of Refrigerant and Classification of refrigerants
	4 <sup>th</sup>	Desirable properties of an ideal refrigerant
	5 <sup>th</sup>	Designation of refrigerant and convert to chemical name
07.11.2022 To 12.11.2022	1 <sup>st</sup>	<b>Last Monday Of Kartika</b>
	2 <sup>nd</sup>	<b>Kartika Purnima</b>
	3 <sup>rd</sup>	Designation of refrigerant and Chemical properties of refrigerants
	4 <sup>th</sup>	commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717
	5 <sup>th</sup>	Substitute for CFC
14.11.2022 To 19.11.2022	1 <sup>st</sup>	Applications of refrigeration, cold storage
	2 <sup>nd</sup>	dairy refrigeration and ice plant
	3 <sup>rd</sup>	<b>Prathamastami</b>
	4 <sup>th</sup>	water cooler and frost free refrigerator
	5 <sup>th</sup>	Psychrometry & Comfort Air Conditioning system
21.11.2022 To 26.11.2022	1 <sup>st</sup>	Psychrometric terms
	2 <sup>nd</sup>	Adiabatic saturation of air by evaporation of water
	3 <sup>rd</sup>	Psychrometric chart and uses
	4 <sup>th</sup>	Psychrometric processes, Sensible heating and Cooling
	5 <sup>th</sup>	Cooling and Dehumidification , Heating and Humidification
28.11.2022 To 3.12.2022	1 <sup>st</sup>	Adiabatic cooling with humidification
	2 <sup>nd</sup>	Total heating of a cooling process SHF, BPF
	3 <sup>rd</sup>	Adiabatic mixing
	4 <sup>th</sup>	Problems on Heating and Humidification
	5 <sup>th</sup>	Effective temperature and Comfort chart

<b>Week</b>	<b>No.of period</b>	<b>Theory Topics</b>
5.12.2022 To 10.12.2022	1 <sup>st</sup>	Factors affecting comfort air conditioning. .
	2 <sup>nd</sup>	Equipment used in an air-conditioning
	3 <sup>rd</sup>	Classification of air-conditioning system
	4 <sup>th</sup>	<b>Last Thursday of Margasira</b>
	5 <sup>th</sup>	Winter Air Conditioning System
12.12.2022 To 17.12.2022	1 <sup>st</sup>	Summer air-conditioning system
	2 <sup>nd</sup>	Different between winter and summer air conditioning system
	3 <sup>rd</sup>	Solve Numerical on above Air Conditioning System
	4 <sup>th</sup>	Solve the numerical with the help of TS and PH digram
	5 <sup>th</sup>	Revision
19.12.2022 To 24.12.2022	1 <sup>st</sup>	Solve the numerical on previous year question
	2 <sup>nd</sup>	Discuss the long type of theory previous year asked question
	3 <sup>rd</sup>	Discuss short type of previous year asked question