DEPARTMENT OF MECHANICAL ENGINEERING

LESSION PLAN

Discipline:- **MECHANICAL**	Class:5th Sem Mech Engg **Session: 2024-25**	Name Of Faculty:- **Biswajit Mishra**
Subject:- **Refrigeration & AC**	No Of Classes Allotted Per week:-4	No Of Weeks:-15
No. of week	**No. of classes**	**Topic to be taught**
1st	1	**Chapter-1** Recapitulation of thermal cycles
	2	Definition of refrigeration and unit of refrigeration, Definition of COP, Refrigerating effect
	3	Principle of working of open and closed air system of refrigeration
	4	Bell-Coleman cycle, COP
2nd	5	Numerical on Bell-Coleman cycle
	6	**Chapter-2** schematic diagram of simple vapor compression refrigeration system
	7	vapor compression cycle with dry saturated vapors after compression
	8	vapor compression cycle with wet vapors after compression.
3rd	9	Numerical on class 7 & 8.
	10	vapor compression cycle with superheated vapors after compression.
	11	vapor compression cycle with superheated vapors before compression.
	12	Numerical on class 10 & 11
4th	13	**Class test-1**
	14	vapor compression cycle with sub cooling of refrigerant
	15	Numericals
	16	**Chapter-3** Simple vapor absorption refrigeration system
5th	17	Practical vapor absorption refrigeration system
	18	Properties of ideal refrigerant- absorbent combination
	19	COP of an ideal vapor absorption refrigeration system
	20	Advantages of absorption system, Lithium-Bomide absorption system.
6th	21	Numericals
	22	Numericals
	23	**Chapter-4** Principle of working and constructional details of reciprocating compressors (Single & double acting)
	24	Centrifugal compressors
7th	25	Hermetically & semi hermetically sealed compressor, Numericals
	26	Principle of working and constructional details of air cooled and water cooled condenser
	27	Cooling tower and spray pond, numericals
	28	**Class test-2**
8th	29	Principle of working and constructional details of an evaporator, Types of evaporator
	30	. Bare tube coil evaporator, finned evaporator, shell and tube evaporator
	31	**Chapter-5** Capillary tube, Automatic expansion valve
	32	. Thermostatic expansion valve
9th	33	Classification of refrigerants, Desirable properties of an ideal refrigerant.
	34	Designation of refrigerant.

	35	Thermodynamic Properties of Refrigerants, Chemical properties of refrigerants.
	36	commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717, Substitute for CFC
10th	37	Applications of refrigeration: cold storage
	38	Dairy refrigeration, frost free refrigerator
	39	ice plant, water cooler
	40	**Chapter-6** Psychometric terms
11th	41	Adiabatic saturation of air by evaporation of water
	42	Psychometric chart and uses.
	43	Sensible heating and Cooling,Cooling and Dehumidification
	44	Heating and Humidification
12th	45	Numericals
	46	Adiabatic cooling with humidification
	47	SHF, BPF,Adiabatic mixing
	48	Numericals
13th	49	Effective temperature and Comfort chart
	50	Numericals
	51	**Chapter-7** Factors affecting comfort air conditioning
	52	Equipment used in an air-conditioning
14th	53	Classification of air-conditioning system
	54	Winter Air Conditioning System
	55	Cooling load calculation
	56	Numericals
15th	57	Summer air-conditioning system
	58	Numericals
	59	Previous year question Answer
	60	Previous year question Answer

28/06/2024

Prep by: **Lect. & Head, ME**