

DEPARTMENT OF MECHANICAL ENGINEERING

LESSON PLAN

Discipline:- MECHANICAL	Class: 5 th Sem Mech Engg	Name Of Faculty:- Blawajit Mishra
Subject:- Refrigeration & AC	Session: 2023-24 No Of Classes Allotted Per week:-4	No Of Weeks:-15
No. of week	No. of classes	Topic to be taught
1 st	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
2 nd	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.
3 rd	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
4 th	13	Class test-1
	14	vapor compression cycle with sub cooling of refrigerant
	15	Numericals
	16	Chapter-3 Simple vapor absorption refrigeration system
5 th	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.
6 th	21	Numericals
	22	Numericals
	23	Chapter-4 Principle of working and constructional details of reciprocating compressors (Single & double acting)
	24	Centrifugal compressors
7 th	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
8 th	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
9 th	33	Classification of refrigerants, Desirable properties of an ideal

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		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
10 th	37	Applications of refrigeration: cold storage
	38	Dairy refrigeration, frost free refrigerator
	39	ice plant, water cooler
	40	Chapter-6 Psychometric terms
11 th	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
12 th	45	Numericals
	46	Adiabatic cooling with humidification
	47	SHF, BPF, Adiabatic mixing
	48	Numericals
13 th	49	Effective temperature and Comfort chart
	50	Numericals
	51	Chapter-7 Factors affecting comfort air conditioning
	52	Equipment used in an air-conditioning
14 th	53	Classification of air-conditioning system
	54	Winter Air Conditioning System
	55	Cooling load calculation
	56	Numericals
15 th	57	Summer air-conditioning system
	58	Numericals
	59	Previous year question Answer
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Bikrajit Mishra
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Prep by: Lecturer & Head, Mechanical Engg