GOVT. POLYTECHNIC MAYURBHANJ , TIKARPADA

ACADEMIC SESSION-2021-22 , LESSON PLAN

Discipline : MECHANICAL ENGG.		Semester: 5th Sem	Name of the Teaching Faculty :SASMITA SAHA
Subject : Refrigeration & air conditioning		No. of Days / per week class allotted : 04	Semester From date : 1/10/2021 To Date : 8/1/2022
MONTH	**Week**	**Day**	**Topics**
OCTOBER	Ist	5th	**Chapter-1: AIR REFRIGERATION CYCLE -**Definition of refrigeration and unit of refrigeration. Definition of COP, Refrigerating effect (R.E)
	2nd	Ist	Bell- Coleman air cycle
		4th	Principle of working of open and closed air system of refrigeration
		5th	Calculation of COP of Bell-Coleman cycle.
	3rd	Ist	solved problems
	4th	4th	**Chapter- 2** : **Simple vapour compression refrigeration system** :-Schematic diagram of simple vapors compression refrigeration system'
		5th	Types of simple vapors compression refrigeration system :Cycle with dry saturated vapors after compression. Solve problem
	5TH	Ist	Cycle with wet vapors after compression. Solve problem
		3rd	Cycle with superheated vapors after compression.
		4th	Cycle with superheated vapors before compression. Cycle with sub cooling of refrigerant
		5th	solve problems
	Ist	1st	Representation of above cycle on temperature entropy and pressure enthalpy diagram Numerical on above (determination of COP,mass flow)
		3rd	**Chapter -3 :Vapour absorption refrigeration system -** Simple vapor absorption refrigeration system.
		5th	**CLASS TEST- I**
	2nd	1st	Practical vapor absorption refrigeration system
		3rd	comparision between VARS and VCRS

NOVEMBER	2nd	4th	COP of an ideal vapour absorption refrigerationsystem
		5th	Numerical on COP
	3rd	Ist	Revision
		3rd	**Chapter-4: Refrigeration equipments :-** REFRIGERANT COMPRESSORS Principle of working and constructional details of reciprocating compressor
		4th	Principle of working and constructional details of rotary compressors. .
	4th	1st	Centrifugal compressor only theory
		3rd	Revision
		4th	Important terms, Hermetically and semi hermetically sealed compressor
		5th	Principle of working and constructional details of air cooled and water cooled condenser
	5TH	1st	Principle of working and constructional details of water cooled condenser
DECEMBER	Ist	3rd	Heat rejection ratio, Cooling tower and spray pond.
		4th	Principle of working and constructional details of an evaporator
		5th	INTERNAL EXAMINATION
	2nd	1st	Types of evaporator, Bare tube coil evaporator, finned evaporator,
		3rd	shell and tube evaporator
		4th	**Chapter-5: Refrigerant flow control, refrigerants & applications of refrigerants**-Capillary
		5th	Thermostatic expansion valve , Refrigerant, Classification of refrigerants
	3rd	1st	Desirable properties of an ideal refrigerant. Designation of refrigerant.
		3rd	Thermodynamic Properties of Refrigerants. Chemical properties of refrigerants
		4th	Commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717, Substitute for CFC
		5th	Applications of refrigeration ,cold storage , dairy refrigeration
	4th	1st	ice plant , water cooler, frost free refrigerator
		3rd	**Chapter-6 :Psychometrics & comfort air conditioning system :** Psychometric terms ,Psychometric relations
		4th	Adiabatic saturation of air by evaporation of water ,Psychometric chart and uses
		5th	Psychometric processes - Sensible heating and Cooling,Cooling and Dehumidification
		1st	Solve problems ,Heating and Humidification ,Adiabatic cooling with humidification
		3rd	Total heating of a cooling process ,SHF, BPF, Adiabatic mixing

	5TH	4th	human confort ,Effective temperature ,Comfort chart
		5th	**Chapter-7: Air conditioning system :**Factors affecting comfort air conditioning**,** Factors affecting optimum effective temperature.
JANUARY	**Ist**	1st	Equipment used in an air-conditioning, Classification of air-conditioning system
		3rd	Winter Air Conditioning System
		4th	Summer air-conditioning system, Numerical on above, Revision
		5th	**CLASS TEST-II**