

PNS SCHOOL OF ENGINEERING & TECHNOLOGY, MARSHAGHAI, KENDRAPARA

LESSON PLAN

Discipline : Mechanical	Semester:5th	Name of the Teaching Faculty : Er.Jyotirmay Jena
Subject : R & AC	No. of Days / per week class allotted : 5	Semester From date : 01.08.2023 to Date :30.11.2023 No. of Weeks : 14
Week	Class Day	Topics
1st	1st	1.1 Definition of refrigeration and unit of refrigeration.
	2nd	1.2 Definition of COP, Refrigerating effect (R.E)
	3rd	1.3 Principle of working of open and closed air system of refrigeration.
	4th	1.3.1 Calculation of COP of Bell-Coleman cycle and numerical on it.
	5th	simple problem on above
2nd	1st	2.1 schematic diagram of simple vapors compression refrigeration system
	2nd	2.2.1 Cycle with dry saturated vapors after compression.
	3rd	2.2.2 Cycle with wet vapors after compression.
	4th	2.2.3 Cycle with superheated vapors after compression.
	5th	simple problem on above
3rd	1st	2.2.4 Cycle with superheated vapors before compression.
	2nd	2.2.5 Cycle with sub cooling of refrigerant
	3rd	2.2.6 Representation of above cycle on temperature entropy and pressure enthalpy diagram
	4th	2.2.6 Representation of above cycle on temperature entropy and pressure enthalpy diagram
	5th	simple problem on above
4th	1st	2.2.7 Numerical on above (determination of COP, mass flow)
	2nd	2.2.7 Numerical on above (determination of COP, mass flow)
	3rd	3.1 Simple vapor absorption refrigeration system
	4th	3.1 Simple vapor absorption refrigeration system
	5th	REVISION
5th	1st	3.2 Practical vapor absorption refrigeration system
	2nd	3.2 Practical vapor absorption refrigeration system
	3rd	3.3 COP of an ideal vapor absorption
	4th	3.4. Numerical on COP.
	5th	simple problem on above
6th	1st	3.4. Numerical on COP.
	2nd	4.1 REFRIGERANT COMPRESSORS
	3rd	4.1.2 Centrifugal compressor only theory
	4th	4.1.4 Hermetically and semi hermetically sealed compressor.
	5th	REVISION
7th	1st	4.2.1 Principle of working and constructional details of air cooled and water cooled condenser
	2nd	4.2.2 Heat rejection ratio.
	3rd	4.2.3 Cooling tower and spray pond.
	4th	1.6.1 Principle of working and constructional details of an evaporator.
	5th	simple problem on above

8th	1st	1.6.2 Types of evaporator. 1.6.3 Bare tube coil evaporator, finned evaporator, shell and tube evaporator.
	2nd	5.1 EXPANSION VALVES
	3rd	5.1.2 Automatic expansion valve
	4th	5.2.1 Classification of refrigerants
	5th	simple problem on above
9th	1st	5.2.3 Designation of refrigerant.
	2nd	5.2.4 Thermodynamic Properties of Refrigerants.
	3rd	5.2.6 commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717 5.2.7 Substitute for CFC
	4th	5.3 Applications of refrigeration
	5th	simple problem on above
10th	1st	5.3.1 cold storage
	2nd	5.3.2 dairy refrigeration
	3rd	5.3.3 ice plant
	4th	5.3.4 water cooler
	5th	simple problem on above
11th	1st	6.1 Psychometric terms
	2nd	6.2 Adiabatic saturation of air by evaporation of water
	3rd	6.3 Psychometric chart and uses.
	4th	6.4.1 Sensible heating and Cooling
	5th	simple problem on above
12th	1st	6.4.3 Heating and Humidification
	2nd	6.4.5 Total heating of a cooling process
	3rd	6.4.6 SHF, BPF,
	4th	6.4.7 Adiabatic mixing
	5th	simple problem on above
13th	1st	6.4.8 Problems on above.
	2nd	6.5 Effective temperature and Comfort chart
	3rd	7.1 Factors affecting comfort air conditioning. .
	4th	7.2 Equipment used in an air-conditioning.
	5th	simple problem on above
14th	1st	7.3 Classification of air-conditioning system
	2nd	7.4 Winter Air Conditioning System
	3rd	7.5 Summer air-conditioning system.
	4th	Previous question discussion
	5th	Previous question discussion

Signature of HOD, Mechanical

Signature of Lecturer