

Discipline : Mechanical Engg.	Semester : 5th	Name of the Teachnig Faculty : Er. Kuni Behera
Subject : REFRIGERATION AND AIR CONDITIONING	No.of days/Per weeks Class Alloted Weeks :4	Semester from date : To Date : No.of Weeks : 15
Weeks	Class day	Theory
1st(sept)	1st	Definition of refrigeration and unit of refrigeration.
	2nd	Definition of COP, Refrigerating effect (R.E)
	3rd	Definition of COP, Refrigerating effect (R.E)
	4th	Principle of working of open and closed air system of refrigeration.
2nd(sept)	1st	Principle of working of open and closed air system of refrigeration.
	2nd	Calculation of COP of Bell-Coleman cycle and numerical on it.
	3rd	schematic diagram of simple vapors compression refrigeration system'
	4th	schematic diagram of simple vapors compression refrigeration system'
3rd(sept)	1st	Cycle with dry saturated vapors after compression.
	2nd	Cycle with wet vapors after compression.
	3rd	Cycle with superheated vapors after compression.
	4th	Cycle with superheated vapors before compression.
4th(sept)	1st	Cycle with sub cooling of refrigerant
	2nd	Representation of above cycle on temperature entropy and pressure enthalpy diagram
	3rd	Representation of above cycle on temperature entropy and pressure enthalpy diagram
	4th	Numerical on above (determination of COP, mass flow)
1st(oct)	1st	Simple vapor absorption refrigeration system
	2nd	Practical vapor absorption refrigeration system
	3rd	COP of an ideal vapor absorption refrigeration system
	4th	Numerical on COP.
2nd(oct)	1st	Numerical on COP.
	2nd	Principle of working and constructional details of reciprocating and rotary compressors.
	3rd	Centrifugal compressor only theory
	4th	Important terms.
3rd(oct)	1st	
	2nd	
	3rd	
	4th	
4th(oct)	1st	Hermetically and semi hermetically sealed compressor.

	2nd	Principle of working and constructional details of air cooled and water cooled condenser
	3rd	Heat rejection ratio.
	4th	Cooling tower and spray pond.
1st(Nov)	1st	Principle of working and constructional details of an evaporator.
	2nd	Types of evaporator.
	3rd	Bare tube coil evaporator, finned evaporator, shell and tube evaporator.
	4th	Automatic expansion valve
2nd(Nov)	1st	Thermostatic expansion valve
	2nd	Classification of refrigerants
	3rd	Desirable properties of an ideal refrigerant.
	4th	Designation of refrigerant.
3rd(Nov)	1st	Thermodynamic Properties of Refrigerants.
	2nd	Thermodynamic Properties of Refrigerants.
	3rd	Chemical properties of refrigerants.
	4th	commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717
4th(Nov)	1st	commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717
	2nd	Substitute for CFC
	3rd	cold storage, dairy refrigeration
	4th	ice plant, water cooler
1st(Dec)	1st	ice plant, water cooler
	2nd	frost free refrigerator
	3rd	frost free refrigerator
	4th	Psychometric terms
2nd(Dec)	1st	Psychometric terms
	2nd	Adiabatic saturation of air by evaporation of water
	3rd	Adiabatic saturation of air by evaporation of water
	4th	Adiabatic saturation of air by evaporation of water
3rd(Dec)	1st	Psychometric chart and uses.
	2nd	Psychometric chart and uses.
	3rd	Psychometric processes
	4th	Psychometric processes
4th(Dec)	1st	Sensible heating and Cooling
	2nd	Sensible heating and Cooling
	3rd	Cooling and Dehumidification
	4th	Cooling and Dehumidification
1st(Jan)	1st	Heating and Humidification

	2nd	Heating and Humidification
	3rd	Adiabatic cooling with humidification
	4th	Adiabatic cooling with humidification
2nd(Jan)	1st	Total heating of a cooling process
	2nd	Total heating of a cooling process
	3rd	SHF, BPF,
	4th	SHF, BPF,
3rd(Jan)	1st	Adiabatic mixing
	2nd	Adiabatic mixing
	3rd	Problems on above.
	4th	Problems on above.
4th(Jan)	1st	Problems on above.
	2nd	Effective temperature and Comfort chart
	3rd	Effective temperature and Comfort chart
	4th	Effective temperature and Comfort chart
1st(Feb)	1st	Factors affecting comfort air conditioning. .
	2nd	Factors affecting comfort air conditioning. .
	3rd	Equipment used in an air-conditioning.
	4th	Equipment used in an air-conditioning.
2nd(Feb)	1st	Equipment used in an air-conditioning.
	2nd	Classification of air-conditioning system
	3rd	Classification of air-conditioning system
	4th	Winter Air Conditioning System
3rd(Feb)	1st	Winter Air Conditioning System
	2nd	Winter Air Conditioning System
	3rd	Summer air-conditioning system.
	4th	Summer air-conditioning system.
4th(Feb)	1st	Summer air-conditioning system.
	2nd	Numerical on above
	3rd	Numerical on above
	4th	Numerical on above

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