

Discipline: Mechanical	Semester: 5th	Name of the Teaching Faculty T. K. Panda	
Subject: RAC	No of Days/Week Class Allotted: 04	Semester From date: _____ To date _____	No. of Weeks: _____

WEEK	Class Day	Theory Topics
01	1st	<u>Air Refrigerator cycle</u> : definition of refrigeration & unit of refrigeration
	2nd	definition of COP
	3rd	Refrigerating effect (R.E.)
	4th	Principle of working of open & closed air system of refrigeration
	5th	
02	1st	Calculation of COP of Bell-Coleman Cycle & numerical on it
	2nd	<u>Simple Vapour Compression Refrigeration System</u> : Schematic diagram
	3rd	Types of Simple Vapour Compression Refrigeration System.
	4th	Cycle with dry saturated vapour after compression
	5th	Cycle with wet vapour after compression
03	1st	Cycle with super heated vapour after compression
	2nd	Cycle with super heated vapour before compression
	3rd	Cycle with sub cooling of refrigerant.
	4th	
	5th	

WEEK	Class Day	Theory Topics
1	1st	Representation of above cycle on temp entropy & pressure enthalpy diagram
	2nd	Numerical on above (determinating of COP, mass flow)
	3rd	<u>Vapour Absorption Refrigeration System</u> Simple Vapour absorption refrigeration system.
	4th	Practical Vapour absorption refrigeration system.
	5th	
1	1st	COP of an ideal vapor absorption refrigeration system.
	2nd	COP of an ideal vapor absorption refrigeration system.
	3rd	Numerical on COP
	4th	Numerical on COP
	5th	
1	1st	(Unit Test - I)
	2nd	Discussion with students.
	3rd	<u>Refrigeration Equipments</u> :- Refrigerant compressors principle,
	4th	principle of working & constructional details of reciprocating & rotary compressors
	5th	

04

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Discipline: Mech.	Semester: 5th	Name of the Teaching Faculty T. K. Panda.	
Subject: RAC	No of Days/Week Class Allotted: 04	Semester From date: _____ To date _____	No. of Weeks:

WEEK	Class Day	Theory Topics
07	1st	Centrifugal compressor only theory & important terms.
	2nd	Hermetically & semi-hermetically sealed compressors.
	3rd	Condensers :- principle of working & constructional details of air & water cooled.
	4th	Heat Rejection ration by cooling tower & spray pond.
	5th	
08	1st	Evaporators :- principle of working & construction details of an evaporator
	2nd	Types of evaporator
	3rd	Bare tube coil evaporator, finned evaporator, shell & tube evaporation
	4th	S.O. Refrigerant flow control, refrigerants Application of refrigerants :-
	5th	Expansion Valve: Capillary tube Automatic expansion valve.
09	1st	Thermostatic expansion valve.
	2nd	Refrigerants, classification of refrigerant.
	3rd	Desirable properties of an ideal refrigerant, designation of
	4th	Thermodynamic properties of refrigerant.
	5th	

WEEK	Class Day	Theory Topics
1	1st	Thermodynamic Properties of Refrigerants
	2nd	Chemical Properties of refrigerants.
	3rd	Commonly used refrigerant R-11, R-12, R-22, R-134a, R-717, Substitute for CFC
	4th	Application of refrigerant - cold storage dairy refrigerant.
	5th	
10	1st	Application: - ice plant, water cooler, frost free refrigerator.
	2nd	Psychrometry & comfort air conditioning system: - psychometric terms.
	3rd	Adiabatic saturation of air by evaporation of water,
	4th	Psychrometric chart & uses, - Psychometric processes.
	5th	
11	1st	Sensible heating & cooling, cooling & dehumidification.
	2nd	Heating & Humidification
	3rd	Adiabatic cooling with humidification
	4th	Total heating of a cooling process SHF, BPF
	5th	
12	1st	Sensible heating & cooling, cooling & dehumidification.
	2nd	Heating & Humidification
	3rd	Adiabatic cooling with humidification
	4th	Total heating of a cooling process SHF, BPF
	5th	

Line: **Mech.** Semester: **5th** Name of the Teaching Faculty: **T. K. Panda.**
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WEEK	Class Day	Theory Topics
13	1st	Adiabatic mixings, problems on above.
	2nd	Effective temp. & Comfort chart.
	3rd	<u>Air Conditioning System</u> : Conditioning factors affecting comfort air.
	4th	Equipment used in an air-conditioning
	5th	
14	1st	Classification of air conditioning system.
	2nd	Winter Air Conditioning system
	3rd	Summer Air Conditioning system.
	4th	Numerical on Air conditioning system
	5th	
15	1st	Numerical on Air conditioning system
	2nd	(Unit Test - II)
	3rd	Discussion with students.
	4th	Doubt clearing class.
	5th	