



UTKAL INSTITUTE OF ENGINEERING & TECHNOLOGY

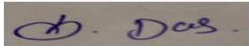
DISCIPLINE: Mechanical Engineering	SEMESTER: 5th Sem	NAME OF THE TEACHING FACULTY: Er.Snehasis Das		
SUBJECT: REFRIGERATION AND AIR CONDITIONING	No of Days/Per week class allotted: 4 Class P/W(60)	Semester From Date:15/09/2022 To Date:22/12/2022 No. Of Weeks: 15		
WEEK	CLASS DAY	THEORY TOPICS	REMARKS	
1 st	1 st	Definition of refrigeration and unit of refrigeration	Date	Dean/Principal
	2 nd	Definition of COP, Refrigerating effect (R.E)		
	3 rd	Principle of working of open and closed air system of refrigeration		
	4 th	Calculation of COP of Bell-Coleman cycle and numerical on it.		
2 nd	1 st	Doubt clear class		
	2 nd	schematic diagram of simple vapors compression refrigeration system' & Types		
	3 rd	Cycle with dry saturated vapors after compression.		
	4 th	Assignment		
3 rd	1 st	Assignment question Discussion		
	2 nd	Cycle with wet vapors after compression.		
	3 rd	Cycle with superheated vapors after compression.		
	4 th	Cycle with superheated vapors before compression. ,Cycle with sub cooling of refrigerant		

4 th	1 st	Representation of above cycle on temperature entropy and pressure enthalpy diagram , Numerical on above (determination of COP, mass flow)		
	2 nd	Simple vapor absorption refrigeration system		
	3 rd	Practical vapor absorption refrigeration system		
	4 th	COP of an ideal vapor absorption refrigeration system		
5 th	1 st	Class Test		
	2 nd	.Numerical on COP.		
	3 rd	Principle of working and constructional details of reciprocating and rotary compressors.		
	4 th	Centrifugal compressor only theory		
6 th	1 st	Revision of Last Class		
	2 nd	Assignment		
	3 rd	Important terms, Hermetically and semi hermetically sealed compressor.		
	4 th	Principle of working and constructional details of air cooled and water cooled condenser		
7 th	1 st	Heat rejection ratio, Cooling tower and spray pond.		
	2 nd	Doubt Clear Class		
	3 rd	Principle of working and constructional details of an evaporator.		
	4 th	Assignment		
8 th	1 st	Assignment question Discussion		
	2 nd	Types of evaporator, Bare tube coil evaporator, finned evaporator, shell and tube evaporator.		
	3 rd	Capillary tube		
	4 th	Doubt Clearing Class and Assignment Questions Discussion.		
	1 st	Automatic expansion valve		
	2 nd	Thermostatic expansion valve		

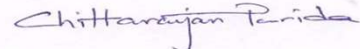
9 th	3 rd	Revision Class		
	4 th	Classification of refrigerants ,Desirable properties of an ideal refrigerant.		
10 th	1 st	Designation of refrigerant. Thermodynamic Properties of Refrigerants.		
	2 nd	Internal Question Discussion		
	3 rd	Doubt clear class		
	4 th	Chemical properties of refrigerants.		
11 th	1 st	Doubt Clear Class		
	2 nd	Revision		
	3 rd	11, R-12, R-22, R-134a, R-717 .Substitute for CFC		
	4 th	Class Test		
12 th	1 st	Doubt Clear Class		
	2 nd	Revision Class		
	3 rd	cold storage , dairy refrigeration		
	4 th	ice plant . water cooler		
13 th	1 st	frost free refrigerator		
	2 nd	Psychometric terms		
	3 rd	Adiabatic saturation of air by evaporation of water		
	4 th	Psychometric chart and uses. Psychometric processes Sensible heating and Cooling		
14 th	1 st	Cooling and Dehumidification		
	2 nd	Heating and Humidification , Adiabatic cooling with humidification		
	3 rd	question discussion for semester exam		
	4 th	Total heating of a cooling process , SHF, BPF,		
15 th	1 st	Adiabatic mixing & Problems on above. Effective temperature and Comfort chart		
	2 nd	Factors affecting comfort air conditioning. . Equipment used in an air-conditioning		
	3 rd	Classification of air-conditioning system, Winter Air Conditioning System		

4th


Summer air-conditioning system.
, Numerical problem solve



HOD



DEAN



PRINCIPAL