



GOVERNMENT POLYTECHNIC, BALASORE

Government of Odisha

ସରକାରୀ ବହୁବଳି ଅନୁଷ୍ଠାନ, ବାଲେଶ୍ୱର

Academic Lesson Plan for Winter semester-2023-2024

Name of the teaching faculty: Gopabandhu Ghadai

Department: Mechanical Engineering

Semester: 5th

Subject: Refrigeration & AC

No. of periods per week: 4

Total Periods: 60

End semester exam: 80

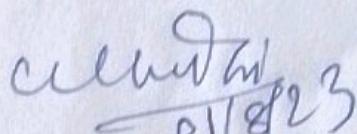
Class test: 20

Total Marks: 100

Sl. No.	Week	Period	Topic to be covered
1.	1 st	1 st	Definition of refrigeration and unit of refrigeration
2.		2 nd	Definition of COP, Refrigerating effect(R.E)
3.		3 rd	Principle of working of open and closed air system of refrigeration.
4.		4 th	Calculation of COP of Bell-Coleman cycle
5.	2 nd	1 st	Solve Numerical
6.		2 nd	Schematic diagram of simple vapors compression refrigeration system'
7.		3 rd	About Types
8.		4 th	Cycle with dry saturated vapors after compression.
9.	3 rd	1 st	Cycle with wet vapors after compression:
10.		2 nd	Cycle with superheated vapors after compression.
11.		3 rd	Cycle with superheated vapors before compression.
12.		4 th	Cycle with sub cooling of refrigerant
13.	4 th	1 st	Representation of above cycle on temperature entropy and pressure enthalpy diagram
14.		2 nd	Solve Numerical
15.		3 rd	Solve Numerical
16.		4 th	Simple vapor absorption refrigeration system
17.	5 th	1 st	Practical vapor absorption refrigeration system
18.		2 nd	Analysis.
19.		3 rd	COP of an ideal vapor absorption refrigeration system
20.		4 th	Analysis
21.	6 th	1 st	Numerical on COP.
22.		2 nd	Solve Numerical

23.	7 th	3 rd	About Refrigerant Compressor
24.		4 th	Principle of working and constructional details of reciprocating and rotary compressors.
25.		1 st	Centrifugal compressor only theory & Important terms.
26.		2 nd	Hermetically and semi hermetically sealed compressor
27.	8 th	3 rd	Condenser Principle of working and constructional details of air cooled and water cooled condenser
28.		4 th	Heat rejection ratio & Cooling tower and spray pond
29.		1 st	Evaporator. Principle of working and constructional details of an evaporator. Types of evaporator.
30.		2 nd	Bare tube coil evaporator, finned evaporator, shell and tube evaporator.
31.	9 th	3 rd	Expansion Valve. Capillary tube & Automatic expansion valve
32.		4 th	Thermostatic expansion valve
33.		1 st	Refrigerant. Classification of refrigerants
34.		2 nd	Desirable properties of an ideal refrigerant.
35.	10 th	3 rd	Designation of refrigerant.
36.		4 th	Thermodynamic Properties of Refrigerants.
37.		1 st	Chemical properties of refrigerants.
38.		2 nd	Commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717
39.	11 th	3 rd	Substitute for CFC
40.		4 th	About Application
41.		1 st	About Psychometric terms
42.		2 nd	Adiabatic saturation of air by evaporation of water
43.	12 th	3 rd	Psychometric chart and uses.
44.		4 th	Psychometric processes
45.		1 st	Sensible heating and Cooling & Cooling and Dehumidification
46.		2 nd	Heating and Humidification & Adiabatic cooling with humidification .Total heating of a cooling process
47.	13 th	3 rd	SHF, BPF
48.		4 th	Adiabatic mixing Solve numerical
49.		1 st	Solve numerical
50.		2 nd	AIR CONDITIONING SYSTEMS Effective temperature and Comfort chart
51.		3 rd	Factors affecting comfort air conditioning.

52.		4 th	Equipment used in an air-conditioning.
53.	14 th	1 st	Do
54.		2 nd	Classification of air-conditioning system
55.		3 rd	Winter Air Conditioning System
56.		4 th	Summer air-conditioning system.
57.	15 th	1 st	Do
58.		2 nd	Solve Numerical
59.		3 rd	Do
60.		4 th	Do


01/8/23

Gopabandhu Ghadai

(Sr.Lect)

MECHANICAL DEPARTMENT

