

RAJA KISHORE CHANDRA ACADEMY OF TECHNOLOGY
NILGIRI, BALASORE
DEPARTMENT OF MECHANICAL ENGINEERING
LESSON PLAN

SUBJECT- REFRIGERATION AND AIR CONDITIONING

BRANCH-MECHANICAL

NAME OF THE FACULTY- ER. BADRI NARAYAN PATRA
SESSION-

SEMESTER-5TH

UNIT	DATE	LECTURE NO	TOPIC TO BE COVERED
1		1	DEFINITION OF REFRIGERATION AND UNIT OF REFRIGERATION.
		2	DEFINITION OF COP, REFRIGERATING EFFECT (R.E)
		3	PRINCIPLE OF WORKING OF OPEN AND CLOSED AIR SYSTEM OF REFRIGERATION.
		4	CALCULATION OF COP OF BELL-COLEMAN CYCLE
		5	NUMERICALS ON BELL COLEMAN CYCLE
2		6	SCHEMATIC DIAGRAM OF SIMPLE VAPOUR COMPRESSION REFRIGERATION SYSTEM ,COMPONENTS AND WORKING
		7	CYCLE WITH DRY SATURATED VAPORS AFTER COMPRESSION, REPRESENTATION IN TEMPERATURE-ENTROPY AND PRESSURE AND ENTHALPY SYSTEM
		8	NUMERICALS OF VAPOUR COMPRESSION SYSTEM WITH DRY SATURATED VAPOUR AFTER COMPRESSION
		9	CYCLE WITH WET VAPORS AFTER COMPRESSION, REPRESENTATION IN TEMPERATURE-ENTROPY AND PRESSURE AND ENTHALPY SYSTEM
		10	NUMERICALS OF VAPOUR COMPRESSION SYSTEM WITH WET SATURATED VAPOUR AFTER COMPRESSION
		11	CYCLE WITH SUPERHEATED VAPORS AFTER COMPRESSION, REPRESENTATION IN TEMPERATURE-ENTROPY AND PRESSURE AND ENTHALPY SYSTEM
		12	NUMERICALS OF VAPOUR COMPRESSION SYSTEM WITH SUPERHEATED VAPOUR AFTER COMPRESSION
		13	CYCLE WITH SUPERHEATED VAPORS BEFORE COMPRESSION, REPRESENTATION IN TEMPERATURE-ENTROPY AND PRESSURE AND ENTHALPY SYSTEM
		14	NUMERICALS OF VAPOUR COMPRESSION SYSTEM WITH SUPERHEATED VAPOUR BEFORE COMPRESSION
		15	CYCLE WITH SUB COOLING OF REFRIGERANT, REPRESENTATION IN TEMPERATURE-ENTROPY AND PRESSURE AND ENTHALPY SYSTEM
3		16	SIMPLE VAPOR ABSORPTION REFRIGERATION SYSTEM
		17	PERFORMANCE TEST
		18	COMPONENTS SUCH AS GENERATOR, ABSORBER, EVAPORATOR, CONDENSER
		19	TYPES SUCH AS WATER- AMMONIA, LITHIUM BROMIDE - WATER REFRIGERATION SYSTEM
		20	PRACTICAL VAPOR ABSORPTION REFRIGERATION SYSTEM
		21	COP OF AN IDEAL VAPOR ABSORPTION REFRIGERATION SYSTEM
		22	NUMERICALS ON COP OF VAPOUR ABSORPTION REFRIGERATION SYSTEM

4		23	CLASSIFICATION OF REFRIGERANT COMPRESSOR, PRINCIPLE OF WORKING AND CONSTRUCTIONAL DETAILS OF RECIPROCATING AND ROTARY COMPRESSORS
		24	. WORKING OF CENTRIFUGAL COMPRESSOR, IMPORTANT TERMS RELATED TO CENTRIFUGAL COMPRESSOR,
		25	HERMETICALLY AND SEMI HERMETICALLY SEALED COMPRESSOR.
		26	PRINCIPLE OF WORKING AND CONSTRUCTIONAL DETAILS OF AIR COOLED AND WATER COOLED CONDENSER
		27	HEAT REJECTION RATIO, COOLING TOWER AND SPRAY POND.
		28	PRINCIPLE OF WORKING AND CONSTRUCTIONAL DETAILS OF AN EVAPORATOR, TYPES OF EVAPORATOR.
		29	BARE TUBE COIL EVAPORATOR, FINNED EVAPORATOR, SHELL AND TUBE EVAPORATOR.
5		30	CAPILLARY TUBE , AUTOMATIC EXPANSION VALVE
		31	THERMOSTATIC EXPANSION VALVE
		32	CLASSIFICATION OF REFRIGERANTS , DESIRABLE PROPERTIES OF AN IDEAL REFRIGERANT.
		33	DESIGNATION OF REFRIGERANT.
		34	THERMODYNAMIC PROPERTIES OF REFRIGERANTS
		35	CHEMICAL PROPERTIES OF REFRIGERANTS.
		36	COMMONLY USED REFRIGERANTS, R-11, R-12, R-22, R-134A, R-717 SUBSTITUTE FOR CFC
		37	CLASS TEST
		38	APPLICATIONS OF REFRIGERATION- COLD STORAGE
		39	DAIRY REFRIGERATION, ICE PLANT
		40	WATER COOLER AND FROST FREE REFRIGERATOR
6		41	PSYCHOMETRIC TERMS
		42	ADIABATIC SATURATION OF AIR BY EVAPORATION OF WATER AND NUMERICALS
		43	PSYCHOMETRIC CHART AND USES.
		44	SENSIBLE HEATING AND COOLING AND NUMERICALS
		45	COOLING AND DEHUMIDIFICATION AND NUMERICALS
		46	HEATING AND HUMIDIFICATION AND NUMERICALS
		47	ADIABATIC COOLING WITH HUMIDIFICATION AND NUMERICALS
		48	TOTAL HEATING OF A COOLING PROCESS AND NUMERICALS
		49	SHF, BPF AND NUMERICALS
		50	ADIABATIC MIXING AND NUMERICALS EFFECTIVE TEMPERATURE AND COMFORT CHART
7		51	FACTORS AFFECTING COMFORT AIR CONDITIONING, EQUIPMENT USED IN AN AIR-CONDITIONING.
		52	CLASSIFICATION OF AIR-CONDITIONING SYSTEM, WINTER AIR CONDITIONING SYSTEM
		53	SUMMER AIR-CONDITIONING SYSTEM.
		54	NUMERICALS ON SUMMER AND WINTER AIR CONDITIONING
		55	DISCUSSION OF IMPORTANT QUESTIONS
		56	CLASS TEST

	57	PREVIOUS SEMESTER QUESTION DISCUSSION
	58	PREVIOUS SEMESTER QUESTION DISCUSSION
	59	DISCUSSION OF IMPORTANT QUESTIONS
	60	DISCUSSION OF IMPORTANT QUESTIONS

Bachhi Narayan Patra

SIGNATURE OF FACULTY MEMBER

SIGNATURE OF H.O.D