

**Lesson Plan**

<b>Discipline: Mechanical, Semester:5TH, Name of Faculty : B.SIVA SANKAR ACHARY</b>		
<b>Subject: REFRIGERATION AND AIR CONDITIONING</b>	<b>No. of days/ week Class allotted: 04</b>	<b>Semester From Date: 15.09.2022 To date : 22.12.2022</b>
<b>WEEK</b>	<b>Class</b>	
<b>1<sup>ST</sup></b>	<b>01</b>	<b>INTRODUCTION TO SUBJECT</b>
	<b>02</b>	<b>AIR REFRIGERATION CYCLE.</b> Definition of refrigeration and unit of refrigeration. Definition of COP, Refrigerating effect (R.E )
	<b>03</b>	Principle of working of open and closed air system of refrigeration. Calculation of COP of Bell-Coleman cycle and numerical on it.
	<b>04</b>	<b>SIMPLE VAPOUR COMPRESSION REFRIGERATION SYSTEM</b> schematic diagram of simple vapors compression refrigeration system' Types
<b>2<sup>ND</sup></b>	<b>05</b>	Cycle with dry saturated vapors after compression. Cycle with wet vapors after compression.
	<b>06</b>	Cycle with superheated vapors after compression. Cycle with superheated vapors before compression.
	<b>07</b>	Cycle with sub cooling of refrigerant Representation of above cycle on temperature entropy and pressure enthalpy diagram
	<b>08</b>	Numerical (determination of COP, mass flow)
<b>3<sup>RD</sup></b>	<b>09</b>	<b>VAPOUR ABSORPTION REFRIGERATION SYSTEM</b> Simple vapor absorption refrigeration system Practical vapor absorption refrigeration system
	<b>10</b>	COP of an ideal vapor absorption refrigeration system
	<b>11</b>	Numerical on COP.
	<b>12</b>	<b>REFRIGERANT COMPRESSORS</b> Principle of working and constructional details of reciprocating and rotary compressors.
<b>4<sup>TH</sup></b>	<b>13</b>	Centrifugal compressor only theory Important terms.
	<b>14</b>	Hermetically and semi hermetically sealed compressor.
	<b>15</b>	<b>CONDENSERS</b> Principle of working and constructional details of air cooled and water cooled condenser
	<b>16</b>	Heat rejection ratio. Cooling tower and spray pond.
<b>5<sup>TH</sup></b>	<b>17</b>	<b>EVAPORATORS</b> Principle of working and constructional details of an evaporator.
	<b>18</b>	Types of evaporator. Bare tube coil evaporator, finned evaporator, shell and tube evaporator
	<b>19</b>	<b>EXPANSION VALVES</b> Capillary tube
	<b>20</b>	Automatic expansion valve Thermostatic expansion valve
<b>6<sup>TH</sup></b>	<b>21</b>	<b>REFRIGERANTS</b> Classification of refrigerants Desirable properties of an ideal refrigerant
	<b>22</b>	Designation of refrigerant. Thermodynamic Properties of Refrigerants.

6 <sup>TH</sup>	23	Chemical properties of refrigerants
	24	commonly used refrigerants, R-11, R-12
7 <sup>TH</sup>	25	R-22, R-134a, R-717 Substitute for CFC
	26	quiz
	27	quiz
	28	Applications of refrigeration -cold storage ,water cooler
8 <sup>TH</sup>	29	frost free refrigerator, ice plant
	30	<b>PSYCHOMETRIC PROCESS</b> Psychometric terms
	31	Adiabatic saturation of air by evaporation of water
	32	Psychometric chart and uses.
9 <sup>TH</sup>	33	Psychometric chart and uses.
	34	Psychometric processes Cooling and
	35	Dehumidification
	36	Heating and Humidification
10 <sup>TH</sup>	37	Adiabatic cooling with humidification
	38	Total heating of a cooling process
	39	SHF, BPF
	40	Adiabatic mixing
11 <sup>TH</sup>	41	numerical
	42	numerical
	43	numerical
	44	Effective temperature and Comfort chart
12 <sup>TH</sup>	45	Factors affecting comfort air conditioning
	46	Factors affecting comfort air conditioning.
	47	Equipment used in an air-conditioning.
	48	Classification of air-conditioning system
13 <sup>TH</sup>	49	Classification of air-conditioning system
	50	Winter air-conditioning system.
	51	Winter air-conditioning system.
	52	Summer air-conditioning system.
14 <sup>TH</sup>	53	Summer air-conditioning system.

	54	Numerical
	55	Numerical
	56	Numerical
15 <sup>TH</sup>	57	Test
	58	test
	59	Test
	60	Test

B. Shiva Sankar Achary  
Concerned faculty

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