



GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR

SESSION PLAN

5TH SEMESTER, BRANCH-MECHANICAL(GROUP 1)

REFRIGERATION AND AIR CONDITIONING(TH-5)

Name of the Faculty – ER. DATI JAYARAM						
Topics to be taken				Actually taken		
SL NO & CHAPTER	No. of Periods assigned by SCTE & VT	Details of the topics	PLANNED DATE	Details of the topics	ACTUAL DATE	Remarks
1. AIR REFRIGERATION CYCLE.	5	1.1 Definition of refrigeration and unit of refrigeration 1.2 Definition of COP, Refrigerating effect (R.E) 1.3 Principle of working of open and closed air system of refrigeration. 1.3.1 Calculation of COP of Bell-Coleman cycle and numerical on it	16/09/2022 TO 24/09/2022	1.1 Definition of refrigeration and unit of refrigeration 1.2 Definition of COP, Refrigerating effect (R.E) 1.3 Principle of working of open and closed air system of refrigeration. 1.3.1 Calculation of COP of Bell-Coleman cycle and numerical on it	16.09.2022 20.09.2022 21.09.2022 23.09.2022 24.09.2022	

<p>2. SIMPLE VAPOUR COMPRESSION REFRIGERATION SYSTEM</p>	<p>10</p>	<p>2.1 schematic diagram of simple vapors compression refrigeration system' 2.2 Types 2.2.1 Cycle with dry saturated vapors after compression. 2.2.2 Cycle with wet vapors after compression. 2.2.3 Cycle with superheated vapors after compression. 2.2.4 Cycle with superheated vapors before compression. 2.2.5 Cycle with sub cooling of refrigerant 2.2.6 Representation of above cycle on temperature entropy and pressure enthalpy diagram 2.2.7 Numerical on above (determination of COP,mass flow)</p>	<p>27/09/2022 TO 21/10/2022</p>	<p>2.1 schematic diagram of simple vapors compression refrigeration system' 2.2 Types 2.2.1 Cycle with dry saturated vapors after compression. 2.2.2 Cycle with wet vapors after compression. 2.2.3 Cycle with superheated vapors after compression. 2.2.4 Cycle with superheated vapors before compression. 2.2.5 Cycle with sub cooling of refrigerant 2.2.6 Representation of above cycle on temperature entropy and pressure enthalpy diagram 2.2.7 Numerical on above (determination of COP,mass flow)</p>	<p>27.09.2022 28.09.2022 30.09.2022 11.10.2022 12.10.2022 14.10.2022 15.10.2022 18.10.2022 19.10.2022 21.10.2022</p>	
<p>3. VAPOUR ABSORPTION REFRIGERATION SYSTEM</p>	<p>7</p>	<p>3.1 Simple vapor absorption refrigeration system 3.2 Practical vapor absorption refrigeration system 3.3 COP of an ideal vapor absorption refrigeration system 3.4.Numerical on COP.</p>	<p>22/10/2022 TO 4/11/2022</p>	<p>3.1 Simple vapor absorption refrigeration system 3.2 Practical vapor absorption refrigeration system 3.3 COP of an ideal vapor absorption refrigeration system 3.4.Numerical on COP.</p>	<p>22.10.2022 26.10.2022 28.10.2022 29.10.2022 1.11.2022 2.11.2022 4.11.2022</p>	

<p>4. REFRIGERATION EQUIPMENTS</p>	<p>8</p>	<p>4.1 REFRIGERANT COMPRESSORS 4.1.1 Principle of working and constructional details of reciprocating and rotary compressors. 4.1.2 Centrifugal compressor only theory 4.1.3 Important terms. 4.1.4 Hermetically and semi hermetically sealed compressor. 4.2 CONDENSERS 4.2.1 Principle of working and constructional details of air cooled and water cooled condenser 4.2.2 Heat rejection ratio. 4.2.3 Cooling tower and spray pond. 4.3 EVAPORATORS 1.6.1 Principle of working and constructional details of an evaporator. 1.6.2 Types of evaporator. 1.6.3 Bare tube coil evaporator, finned evaporator, shell and tube evaporator.</p>	<p>5/11/2022 TO 22/11/2022</p>	<p>4.1 REFRIGERANT COMPRESSORS 4.1.1 Principle of working and constructional details of reciprocating and rotary compressors. 4.1.2 Centrifugal compressor only theory 4.1.3 Important terms. 4.1.4 Hermetically and semi hermetically sealed compressor. 4.2 CONDENSERS 4.2.1 Principle of working and constructional details of air cooled and water cooled condenser 4.2.2 Heat rejection ratio. 4.2.3 Cooling tower and spray pond. 4.3 EVAPORATORS 1.6.1 Principle of working and constructional details of an evaporator. 1.6.2 Types of evaporator. 1.6.3 Bare tube coil evaporator, finned evaporator, shell and tube evaporator.</p>	<p>5.11.2022 9.11.2022 11.11.2022</p> <p>12.11.2022 15.11.2022 18.11.2022</p> <p>19.11.2022 22.11.2022</p>	
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<p>5. REFRIGERANT FLOW CONTROLS, REFRIGERANTS & APPLICATION OF REFRIGERANTS</p>	<p>10</p>	<p>5.1 EXPANSION VALVES 5.1.1 Capillary tube 5.1.2 Automatic expansion valve 5.1.3 Thermostatic expansion valve 5.2 REFRIGERANTS 5.2.1 Classification of refrigerants 5.2.2 Desirable properties of an ideal refrigerant. 5.2.3 Designation of refrigerant. 5.2.4 Thermodynamic Properties of Refrigerants. 5.2.5 Chemical properties of refrigerants. 5.2.6 commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717 5.2.7 Substitute for CFC 5.3 Applications of refrigeration 5.3.1 cold storage 5.3.2 dairy refrigeration 5.3.3 ice plant 5.3.4 water cooler 5.3.5 frost free refrigerator</p>	<p>23/11/2022 TO 9/12/2022</p>	<p>5.1 EXPANSION VALVES 5.1.1 Capillary tube 5.1.2 Automatic expansion valve 5.1.3 Thermostatic expansion valve 5.2 REFRIGERANTS 5.2.1 Classification of refrigerants 5.2.2 Desirable properties of an ideal refrigerant. 5.2.3 Designation of refrigerant. 5.2.4 Thermodynamic Properties of Refrigerants. 5.2.5 Chemical properties of refrigerants. 5.2.6 commonly used refrigerants, R-11, R-12, R-22, R-134a, R-717 5.2.7 Substitute for CFC 5.3 Applications of refrigeration 5.3.1 cold storage 5.3.2 dairy refrigeration 5.3.3 ice plant 5.3.4 water cooler 5.3.5 frost free refrigerator</p>	<p>23.11.2022 25.11.2022</p> <p>26.11.2022 29.11.2022 30.11.2022 2.12.2022</p> <p>3.12.2022 6.12.2022 7.12.2022 9.12.2022</p>	
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<p>6. PSYCHOMETRICS &COMFORT AIR CONDITIONING SYSTEMS</p>	<p>10</p>	<p>6.1 Psychometric terms 6.2 Adiabatic saturation of air by evaporation of water 6.3 Psychometric chart and uses. 6.4 Psychometric processes 6.4.1 Sensible heating and Cooling 6.4.2 Cooling and Dehumidification 6.4.3 Heating and Humidification 6.4.4 Adiabatic cooling with humidification 6.4.5 Total heating of a cooling process 6.4.6 SHF, BPF, 6.4.7 Adiabatic mixing 6.4.8 Problems on above. 6.5 Effective temperature and Comfort chart</p>	<p>10/12/2022 TO 27/12/2022</p>	<p>6.1 Psychometric terms 6.2 Adiabatic saturation of air by evaporation of water 6.3 Psychometric chart and uses. 6.4 Psychometric processes 6.4.1 Sensible heating and Cooling 6.4.2 Cooling and Dehumidification 6.4.3 Heating and Humidification 6.4.4 Adiabatic cooling with humidification 6.4.5 Total heating of a cooling process 6.4.6 SHF, BPF, 6.4.7 Adiabatic mixing 6.4.8 Problems on above. 6.5 Effective temperature and Comfort chart</p>	<p>10.12.2022 13.12.2022 14.12.2022 16.12.2022 17.12.2022 20.12.2022 21.12.2022 23.12.2022 24.12.2022 27.12.2022</p>	
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<p style="text-align: center;">7. AIR CONDITIONING SYSTEMS</p>	<p style="text-align: center;">10</p>	<p>7.1 Factors affecting comfort air conditioning. . 7.2 Equipment used in an air-conditioning. 7.3 Classification of air-conditioning system 7.4 Winter Air Conditioning System 7.5 Summer air-conditioning system. 7.6 Numerical on above</p>	<p style="text-align: center;">28/12/2022 TO 13/01/2023</p>	<p>7.1 Factors affecting comfort air conditioning. . 7.2 Equipment used in an air-conditioning. 7.3 Classification of air-conditioning system 7.4 Winter Air Conditioning System 7.5 Summer air-conditioning system. 7.6 Numerical on above</p>	<p>28.12.2022 30.12.2022 31.12.2022 3.01.2023 4.01.2023 6.01.2023 7.01.2023 10.01.2023 11.01.2023 13.01.2023</p>	
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S. Jayaram

CLASS COVERED BY

L. Panda
H.O.D
Mechanical Engineering
Gandhi School of Engg.
HOD, MECHANICAL



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D. Jayaram

CLASS COVERED BY

Lipanda
H.O.D
Mechanical Engineering
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HOD, MECHANICAL