LESSON PLAN

SPINTRONIC TECHNOLOGY & ADVANCE RESEARCH, TARABOI, KHURDHA

Name of Subject : **REFRIGERATION AND AIR CONDITIONING**
Subject Code : **TH:4(a)**
Semester : 4th Semester
Branch : Mechanical Engg.
Name of faculty : Er. P.M.PADHI

Sl. No.	Topic Name	No. of Classes Required	Cumulative No. of Classes (Total 45)
1	Introduction to Refrigeration & Definition	1	1
2	Refrigerating Effect and Unit of Refrigeration	1	2
3	Coefficient of Performance (COP)	1	3
4	Types of Refrigeration: Ice & Dry Ice	1	4
5	Types of Refrigeration: Steam Jet & Throttling	1	5
6	Liquid Nitrogen Refrigeration	1	6
7	Carnot Refrigeration Cycle	1	7
8	Air Refrigeration System	1	8
9	Bell–Coleman Cycle with PV & TS Diagram	1	9
10	Advantages, Disadvantages & Problems on Air Refrigeration	1	10
11	Basic Components of Refrigeration System	1	11
12	Working of Vapour Compression Cycle	1	12
13	VCR Cycle on P-H Diagram	1	13
14	VCR Cycle on T-S & P-V Diagram	1	14
15	Refrigerating Effect, Work & Power Calculations	1	15
16	Types of Vapour Compression Cycle	1	16
17	Effect of Superheating	1	17
18	Effect of Undercooling	1	18
19	Vapour Absorption Refrigeration System	1	19
20	Electrolux System & Comparison with VCR	1	20
21	Compressors: Types and Classification	1	21
22	Hermetically & Semi-Hermetically Sealed Compressors	1	22
23	Condensers: Air Cooled Type	1	23
24	Condensers: Water Cooled Type	1	24
25	Natural & Forced Draught Cooling Systems	1	25
26	Evaporators: Natural Convection Type	1	26
27	Evaporators: Forced Convection Type	1	27
28	Comparison of Condensers & Evaporators	1	28
29	Refrigerant Flow Controls: Capillary Tube	1	29
30	Automatic Expansion Valve	1	30
31	Thermostatic Expansion Valve	1	31
32	Float Valves: High Side & Low Side	1	32
33	Solenoid Valve	1	33
34	Evaporator Pressure Regulator	1	34
35	Application of Refrigeration: Cold Storage & Freezing	1	35
36	Applications: Dairy, Ice Making & Water Coolers	1	36
37	Introduction to Air Conditioning	1	37
38	Factors Affecting Air Conditioning	1	38
39	Psychrometric Chart & Properties of Air	1	39
40	Psychrometric Processes	1	40
41	Sensible Heating & Cooling	1	41
42	Humidification & Dehumidification	1	42
43	Adiabatic Saturation Process	1	43
44	Air Conditioning Equipment & Plants	1	44
45	Refrigeration & AC Tools and Installation Procedure	1	45

REFERENCES:

1. Refrigeration and Air Conditioning – Sadhu Singh, Khanna Book Publishing Co., New Delhi
2. Refrigeration and Air Conditioning – S. Domakundawar, Dhanpat Rai publications. 9

3. Refrigeration and Air Conditioning – A.S.Sarao & G.S. Gabi, 6th edition, Satya Prakashan publications, New Delhi, 2004.

4. Principles of Refrigeration – Roy J.Dossat, 5th edition, Pearson Publications, 2001.

5. Refrigeration and Air Conditioning – M.Zakria Baig, Premier/ Radiant Publishing House.

6. Refrigeration and Air Conditioning – C.P Arora, Tata McGraw Hill Education, 2000.