

**PNS SCHOOL OF ENGINEERING & TECHNOLOGY, MARSHAGHAI, KENDRAPARA**  
**LESSON PLAN**

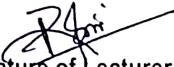
**DISCIPLINE-MECHANICAL, SEMESTER-4TH , SUBJECT-R&AC(TH-4)**

**NAME OF THE FACULTY-Er. RAMAKANT SWAIN**

**NO.OF HOURS ALLOTED per WEEK-4.5 NO. OF WEEKS REQUIRED-10**

1ST	CHAPTER-1 Introduction to Refrigeration: Definition of Refrigeration; Refrigerating effect
2ND	unit of refrigeration- Coefficient of performance
3rd	Types of Refrigeration-Ice, dry ice
4th	Steam jet, Throttling, Liquid nitrogen refrigeration;
5th	Carnot refrigeration cycle
6th	Air refrigeration- Bell - Coleman cycle, PV& TS diagram
7th	Advantage and disadvantages in air refrigeration
8th	simple numericals solved
9th	NUMERICALS SOLVED
10th	NUMERICALS SOLVED
11th	CHAPTER-2 Refrigeration systems: Basic Components
12th	Flow diagram of working of Vapour COMPRESSION CYCLE
13th	Representation of the vapour compression cycle on P-H, T-S & P-V DIAGRAM
14th	Refrigerating effect, work done and power Required
15th	Types of Vapour Compression cycle; Effects of super heating and under cooling
16th	Simple Vapour absorptions cycle its flow diagram;
17th	Simple Electrolux system for domestic units
18th	Vapour absorption vs vapour compression system;
19th	NUMERICALS SOLVED
20th	NUMERICALS SOLVED
21st	chapter-3 Refrigeration equipment: Compressor - types of compressors;
22nd	Hermetically sealed and Semi hermetically sealed compressor;
23rd	Condensers - Air Cooled, water cooled
24th	Condensers - natural and forced draught cooling system;
25th	Advantages and disadvantages of Air Cooled, water cooled
26th	Evaporators -natural
27th	Evaporators -convection
28th	forced convection types
29th	CHAPTER-4 Refrigerant flow controls
30th	Capillary tube; Automatic Expansion valve

31st	Thermo-static expansion valve
32nd	High side and low side float valve; Solenoid valve
33rd	Evaporator pressure regulator
34th	Application of refrigeration: Slow and quick freezing; Cold storage and Frozen storage
35th	Dairy refrigeration; Ice making industry;
36th	Water coolers
37th	CHAPTER-5 Air conditioning: Introduction to Air conditioning;
38th	FACTORS AFFECTING AC
39th	Psychometric chart and its use
40th	Psychometric process-sensible heating and cooling, Humidifying and dehumidifying;
41st	Adiabatic saturation process; Equipment used in air conditioning cycle;
42nd	Air conditioning units and plants
43rd	Tools used in refrigeration and Air conditioner installation; Installation procedure;
44th	Faults in refrigeration and air conditioning system;
45th	Servicing procedure.

  
Signature of Lecturer

  
Signature of H.O.D.

**HEAD OF THE DEPARTMENT**  
Department of Mechanical Engineering  
PNS School of Engg. & Tech.

  
Signature of Principal  
**PRINCIPAL** 1/26  
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Nishamani Vihar, Morhaunai