Enrollment No:	

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech Mid Semester Exam

Semester:6th

Subject Code: (203102355)
Subject Name: (Automotive HVAC)

Date: (31/01/2024) Time: (1hr: 30min) Total Marks: 40

Sr.		Marks	
No.	(A) One line O		
Q.1	(A) One-line Questions:	05	
	1. What is the definition of refrigeration?		
	2. What is the working principle of a condenser?		
	3. Define Sensible heat factor.		
	4. What do you understand by human comfort.		
	5. Define latent heat of vaporization.		
0.0	(B) Differentiate Between Refrigeration and Air Conditioning in details:	05	
Q.2	Attempt any four (Short Questions)	12	
	(1) Draw P-H & T-S diagram for superheating discharge after compression.		
	(2) Define Tones of refrigeration and COP.		
	(3) Write a Short Note on "By-Pass Factor" for heating process.		
	(4) Write a short note on the factors affecting Human comfort.		
	(5) List out the desirable properties of an ideal refrigerant?		
Q.3	Attempt any two	08	
	(1) How will you assign number to the refrigerants: Dichloro difluoro methane and	Vo	
	dichloro tetra fluoro ethane?		
	(2) Explain terms 1) Relative Humidity 2) wet bulb depression 3) Specific humidity		
	4) Saturated air.		
	(3) Explain cooling & dehumidification process with chart.		
Q.4	(A) Describe the simple vapour compression refrigeration system with sketch.	05	
	(B) A machine working on a Carnot cycle operates between 40°C & -5°C. Determine the	05	
	C.O.P. when it is operated as: 1) A Refrigerating Machine 2) A Heat Pump & 3) A	03	
	Heat Engine.		
OR			
(B) For a sample of air having 22oC DBT, Relative humidity 30% at barometric pressure of 05			
	760mm of hg. Calculate vapour pressure, humidity ratio, vapour density. Saturated		
	pressure= 0.0264 bar.		