PRN:		Course Code:	MET 403

Final Year **B. Tech** End Semester Examination Summer 2023

Refrigeration and Air Conditioning

Day and Date: wednesday, 14/06/2023 Max Marks: **100**

Time: 2.00 to 5.00 PM Duration: **03** hrs

Instructions: All questions are compulsory.

			Marks	Bloom's Level	CO
Q.1		**Attempt the following.**			
	a)	Discuss the Limitations of Carnot Cycle with Gas as a Refrigerant.	08	L1	403.1
	b)	Define Refrigeration and Explain the meaning of 1TR capacity of refrigeration.	08	L1	403.1
		OR			
	b)	Discuss the comparison between reversed Carnot cycle and Reversed Brayton cycle.	08	L1	403.1
Q.2		**Attempt the following.**			
	a)	Explain with neat sketch Vapour Compression Refrigeration system.	08	L2	403.2
	b)	Explain how the COP of VCR system can be improved by using flash chamber.	08	L2	403.2
		OR			
	b)	Explain Cascade Refrigeration System with neat sketch.	08	L2	403.2
Q.3		**Attempt any two from the following.**			
	a)	Write a note on compressors used in refrigeration system.	08	L2	403.3
	b)	Classify Refrigerants with suitable examples.	08	L3	403.3
	c)	Write a note on ASHRAE nomenclature of refrigerants.	08	L3	403.3
Q.4		**Attempt any two from the following.**			
	a)	Explain summer and winter air conditioning system with neat sketch.	08	L3	403.4
	b)	Define Relative humidity and Degree of saturation.	08	L3	403.4
	c)	Discuss the various processes associated with Air conditioning on Psychrometric chart and discuss.	08	L3	403.4

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Q.5	**Attempt any Two of the following.**			
a)	Differentiate between summer air conditioning system and winter air conditioning system with neat sketch.	09	L4	403.5
b)	Explain: i. Room Sensible Heat Factor ii. Gross Sensible Heat Factor iii. Effective Room Sensible Heat Factor	09	L4	403.5
c)	Write different Heat sources in designing air conditioning systems.	09	L4	403.5
Q.6	**Attempt any Two of the following.**			
a)	Explain with suitable layout for Pharmaceutical and hospital air conditioning systems.	09	L4	403.5
b)	With neat sketch discuss the various duct layouts. Also write the requirements of air distribution.	09	L4	403.5
c)	What are the Energy Conservation methods? Explain the concept of Green Buildings.	09	L4	403.5

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