Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER • 2014

Subject Code: 170201 **Date: 25-11-2014**

Subject Name: Automobile Air Conditioning System

Time: 10:30 am - 01:00 pm **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	**(a)**	Define the following terms: 1. Air conditioning, 2. Psychrometry, 3. Dew point temperature, 4. Effective saturation, 5. Wet bulb temperature, 6. Sensible heat Factor, 7. Relative humidity	**07**
	(b)	With the help of schematic diagram, explain Vapour compression refrigeration system. How is it differed from Vapour absorption refrigeration?	**07**
Q.2	**(a)**	Explain following psychrometric processes: i) Cooling and humidification ii) Adiabatic mixing of two air streams	**07**
	(b)	Classify refrigerants. List desirable properties of a good refrigerant.	**07**
		OR	
	(b)	How the refrigerants are designated? List the names of refrigerants used in automobile air conditioning.	**07**
Q.3	**(a)**	Classify Air conditioning systems. Explain Central air conditioning system with a neat sketch.	**07**
	(b)	Write a short note on refrigerant charging procedure.	**07**
		OR	
Q.3	**(a)**	Explain car air conditioning system with a neat sketch.	**07**
	(b)	Write a short note on refrigerated transport vehicle.	**07**
Q.4	**(a)**	Discuss the effect of the factors affecting the load on air conditioning system of an automobile.	**07**
	(b)	Write a short note on air routing and temperature control of air conditioning system.	**07**
		OR	
Q.4	**(a)**	Explain in brief layout of duct systems for automobiles and their impact on load calculations.	**07**
	(b)	Discuss effect of air conditioning load on engine performance in terms of loss of available peak torque and fuel consumption.	**07**
Q.5	**(a)**	Explain in brief testing, diagnosis and trouble shooting of air conditioning system.	**07**
	(b)	Explain in brief working of thermostats, control dampers and relays.	**07**
		OR	
Q.5	**(a)**	List different faults and their remedies for compressors in air conditioning system.	**07**
	(b)	Discuss various sources of noise in air conditioning system.	**07**

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