Seat No.:	Enrolment No
-----------	--------------

Subject Code: 170201

## **GUJARAT TECHNOLOGICAL UNIVERSITY**

## **BE - SEMESTER-VII EXAMINATION – WINTER 2015**

Date:12/12/2015

Tir	ne: 1	Name: Automobile Air Conditioning System 0:30am to 1:00pm Total Marks: 70	
Inst	2.	Attempt all questions.  Make suitable assumptions wherever necessary.  Figures to the right indicate full marks.	
Q.1	(a)	With the help of schematic diagram, explain Vapour compression refrigerating system. How is it differed from Vapour absorption refrigeration system?	07
	<b>(b)</b>	Explain the following psychometric processes: (1) Sensible Heating (2) Cooling and dehumidification	07
Q.2	(a)	Give classification of Refrigerants. List desirable properties of a good refrigerant.	07
	<b>(b)</b>	With neat sketch explain construction and working of a thermostatic expansion valve.	07
	<b>(7.</b> )	OR	0=
	<b>(b)</b>	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
Q.3	(a)	Give comparison between: i.) Central air conditioning and unitary air-conditioning system. ii.) Water cooled condenser and Air cooled condenser.	07
	<b>(b)</b>	Discuss effect of air conditioning load on engine performance in terms of loss of available peak torque and fuel consumption.	07
		OR	
Q.3	(a)	List various loads to be considered for deciding capacity of air conditioning system in a car.	07
	<b>(b)</b>	Classify Air conditioning systems. Explain Central air conditioning system with a neat sketch.	07
Q.4	(a)	Write a short note on refrigerant charging procedure.	07
	<b>(b)</b>	How are ducts classified? List common duct materials and suitable shapes of ducts.	07
		OR	
Q.4	(a)	Describe sources of noise in an automobile air conditioning system.	07
	<b>(b)</b>	Describe different duct designing methods.	07
Q.5	(a) (b)	Explain electrical wiring diagram for automobile air conditioning system.  Write a short note on servicing of compressor and heater in automobile air Conditioning system.	07 07
		OR	
Q.5	(a) (b)	Explain in brief working of thermostats, control dampers and relays.  Write a short note on air routing and temperature control of air conditioning system.	07 07
		*********	