Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–VII • EXAMINATION – WINTER 2013

Subject Code: 170201 **Date: 26-11-2013**

Subject Name: Automobile Air Conditioning System

Time: 10:30 TO 01:00 **Total Marks: 70**

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Use Phychrometric chart.**
5. **Assume suitable data if necessary.**

Q.1 **(a)** Explain Simple vapour absorption refrigeration system with a neat sketch. **07**

(b) Explain Automobile air conditioning system with a schematic diagram. **07**

Q.2 **(a)** Define the following terms : **07**

(i) Wet bulb temperature (v) Air conditioning
(ii) Sensible heat factor (vi) Psychrometry
(iii) Dew point temperature (vii) Relative humidity
(iv) Wet bulb depression

(b) Explain Car air conditioning types and its features. **07**

OR

(b) Classify Air conditioning systems. Explain Central air conditioning system with a suitable diagram. **07**

Q.3 **(a)** Write the sound properties of refrigerant. Explain in brief 'eco-friendly refrigerants **07**

(b) Discuss Control systems for car air conditioner. **07**

OR

Q.3 **(a)** Explain the following functional parts : **09**

(1) Air conditioner relay (2)Thermostats (3) Pressure switch

(b) Explain the following psychometric processes: **05**

(1) Sensible Heating (2) Cooling and dehumidification

Q.4 **(a)** With the help of schematic diagram, explain Vapour compression refrigerating system. How is it differed from Vapour absorption refrigerator? **07**

(b) Discuss Refrigerant charging procedure and servicing of heater system. **07**

OR

Q.4 **(a)** Explain in brief Sources of noise in automobile system. **06**

(b) Explain Cooling load and Cooling capacity. Discuss cooling load of a passenger car. **08**

Q.5 **(a)** Write note on 'Trouble shooting method of Automobile air conditioning system'. **07**

(b) Explain Duct system for automobiles and its impact on load. **07**

OR

Q.5 **(a)** Write short note on : (1) Sling Psychrometer (2) Filters **08**

(b) Write note on 'Repair of air conditioning components'. **06**

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