Seat No.:	Enrolment No.

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VII (OLD) - EXAMINATION - SUMMER 2017 Subject Code: 170201 Date: 09/05/2017 **Subject Name: Automobile Air Conditioning System** Time: 02:30 PM to 05:00 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** Define the following terms: **07** (a) 1. Air conditioning, 2. Saturated air, 3. Dew point temperature, 4. Humidity, 5. Relative humidity, 6. Sensible heat Factor, 7. Wet bulb temperature Explain Simple vapour compression refrigeration system with a neat sketch. **(b)** 07 0.2 Explain following psychrometric processes: 07 (a) i) Cooling and dehumidification. ii) Heating and humidification. List desirable characteristics of refrigerants. Explain how are refrigerants 07 **(b)** designated? **(b)** Explain Automobile air conditioning system with a schematic diagram. 07 **Q.3** (a) Write a short note on types of compressor used in automobile air conditioning. 07 Write a short note on refrigerant charging procedure. **07 (b) Q.3** (a) Explain various leak detection methods in automobile air conditioning. 07 Explain the refrigeration system in various transport vehicles. **(b)** 07 Explain the following functional parts: **Q.4** (a) 07 (1) Air conditioner relay (2) Thermostats (3) Pressure switch Describe the construction and working of various expansion devices. **07 (b)** OR **Q.4** Define Cooling load, and calculate the cooling load of a passenger car. **07** (a) Discuss Control systems for automobile air conditioning. **(b)** 07 List various symptoms their probable causes and their correction of automobile 0.5 **07** (a) air conditioning systems. Explain in brief Sources of noise in automobile system. **07 (b)**

Explain Troubleshooting of compressor in Automobile air conditioning.

Describe the different methods of duct design.

Q.5

(a)

(b)

07

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