

Roll No.

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(AE) (2011 Onwards) (Sem.-6)**  
**AUTOMOTIVE HEATING, VENTILATION AND AIR**  
**CONDITIONING**

Subject Code : BTAE-602

Paper ID : [A2381]

Time : 3 Hrs.

Max. Marks : 60

**INSTRUCTION TO CANDIDATES :**

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students has to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students has to attempt any TWO questions.

**SECTION-A**

**1. Answer briefly :**

- a. Define the term 1 tone refrigeration.
- b. Define the term comfort.
- c. Name any refrigerant responsible for ozone depletion and its reason.
- d. Name the refrigerant currently used in car air conditioning.
- e. What do you mean by climate control system used in cars?
- f. What is the function of condenser?
- g. What will happen if the condenser fan of the car stops?
- h. Classify various types of refrigerants.
- i. What is purging?
- j. What is halide torch test?

### SECTION-B

2. Discuss in detail the construction and working of various types of compressors used in air conditioning system.
3. Explain the construction and working of automatically controlled air conditioner-heater system.
4. How refrigerants are classified? Discuss the desirable properties of refrigerant.
5. What are major difficulties encountered in air- conditioning a car?
6. Explain various types of duct arrangement systems with the help of neat sketches.

### SECTION-C

7. The atmospheric conditions are 25°C DBT and specific humidity of 10 gm/kg of air. Determine the following :
  - a. Partial pressure of vapour.
  - b. Relative humidity.
  - c. Dew-point temperature.
8. Explain the process of charging of refrigerant with the help of neat sketch.
9. Write the possible cause and possible remedies for the following failures :
  - a. Compressor does not start.
  - b. Oil on floor.