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Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(AE) (2011 Onwards) (Sem.-6)
AUTOMOTIVE HEATING, VENTILATION & 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 have to attempt any **FOUR** questions.
3. SECTION-C contains **THREE** questions carrying **TEN** marks each and students have to attempt any **TWO** questions.

SECTION-A**1. Write briefly :**

- a. Define the term 1 tone refrigeration.
- b. Name two types of compressors used in an air-conditioner.
- c. What is the purpose of compressor in refrigerator?
- d. Name the refrigerant currently used in car air conditioning.
- e. Which expansion device is commonly used in car?
- f. What is the function of condenser?
- g. What is the material of pipe used in refrigerating machine?
- h. Classify various types of refrigerants.
- i. What is the use of low pressure and high pressure switch?
- j. How refrigerants are responsible for ozone layer depletion?

SECTION-B

2. Discuss with neat sketch schematic layout of car air conditioning system.
3. What are the functions of an expansion device? Explain expansion valve calibration.
4. Explain the construction and working of manually controlled air conditioner-heater system.
5. How refrigerants are classified? Discuss the desirable properties of refrigerant.
6. What are different types of air distribution system? Discuss in detail.

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. Sketch and explain different types of psychrometric processes.
9. Explain the process of charging of refrigerant with the help of neat sketch.