

Roll No. 

Total No. of Pages : 02

Total No. of Questions : 09

**B.Tech.(AE) (2011 onwards) (Sem.-4)**  
**AUTOMOTIVE ELECTRICAL SYSTEM**

Subject Code : BTAE-404

Paper ID : [A1164]

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) What is the electrolyte used in lead acid battery?
  - b) What is the function of separators in a battery?
  - c) What is the purpose of carbon brushes in an alternator?
  - d) Name three types of starting device.
  - e) Why ignition coil is hermetically sealed?
  - f) What does condenser do in an ignition system?
  - g) State the requirements of a spark plug.
  - h) Why does a modern head light bulb contain some inert gas?
  - i) What is the purpose of odometer?
  - j) What do you understand by hybrid vehicles?
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**SECTION-B**

2. Describe the drive arrangement in an electric vehicle with the help of line diagram.
3. Discuss the trouble shooting in starting system.
4. Write a note on distributor less ignition system.
5. With the help of sketch explain the working of oil pressure gauge.
6. Discuss various components of fuel cell.

**SECTION-C**

7. Discuss various tests for ascertaining the fitness of a battery to be used in a vehicle.
8. Discuss the construction and principle of operation of an alternator for automobile charging system.
9. Explain the battery ignition system with line diagram for a four cylinder engine.