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Total No. of Pages : 02

Total No. of Questions : 09

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

Subject Code : BTAE-404

Paper ID : [A1164]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS 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) Draw symbols for condenser and motor.
 - b) Define "reach" of spark plug.
 - c) Why voltage regulation is required?
 - d) Write the function of a distributor.
 - e) Draw the diagram 'battery cell'.
 - f) What do you mean by half charged battery?
 - g) Write firing order of Maruti Alto car.
 - h) Write the functions of ignition coil.
 - i) Why earthing of electrical circuit of an automobile is necessary?
 - j) What do you mean by heat dissipation of fuel cells?
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SECTION-B

- 2 Describe the various torque characteristics of starter motor.
- 3 Explain the working of engine temperature gauge with its wiring diagram.
- 4 Explain with neat sketch the working of wiper motor.
- 5 Describe the chemical action taking place in a lead acid battery during charging & discharging.
- 6 Draw the line diagram and explain the difference between Hot & Cold spark plug.

SECTION-C

- 7
 - a) Explain the hydrometer test of the automobile battery.
 - b) Draw and explain the circuit diagram of six diodes rectifier for Star & Delta connection of an alternator.
- 8
 - a) Discuss in detail the battery ignition system with the help of neat sketches.
 - b) Explain with the help of neat sketches the working of speedometer.
- 9 Write note on **any two** of the followings :
 - a) Electrical vehicles
 - b) Methanol fuel cells
 - c) Positive and negative earthing system