B.TECH. DEGREE EXAMINATION
Fifth Semester 2013 Scheme
Branch: Automobile Engineering
13.505 Auto Electricals/ Electronics (U)

Time: 3 Hours Maximum: 100 Marks

(Answer All Questions in Part A and one question from each Module in Part B)

Part- A (10 X 2 = 20 Marks)

1. Give any four symbols used in Automobile Electrical System.
2. What is Battery Capacity?
3. Why specific gravity test can not be conducted in Alkaline batteries?
4. What is armature reaction?
5. Why cutout relay is not needed in Alternators?
6. What are the different types of starting switches used in Automobiles?
7. What is the advantage of sealed beam head light?
8. What is the need of firing order in Engines?
9. What sensors are used for level, position and speed measurement?
10. What is the major difference between L- Jetronic and D Jetronic Injection.

Part- B (20 x 4 = 80 Marks)

Module 1 20 Marks x 1 = 20 Marks

1. a) Draw the layout of the automobile Electrical system indicating various sub systems.
   b) Draw the construction of Lead acid battery with a neat sketch.

OR

2. What are the various maintenance steps required for lead acid battery? What are the different Battery Charging methods used for external charging of the battery?

Module 2 20 Marks x 1 = 20 Marks

3. a) With the help of a neat sketch Explain the Overrunning clutch Drive
   b) Explain the starting switch suitable for pre-engaged drive.

OR

4. Describe the construction and working of Alternator with a neat sketch? Discuss the different types of stator windings used with the system in detail.

Module 3 **20 Marks x 1 = 20 Marks**

5. a) What do you mean by focusing and aiming of head lights? How it is carried out?
   b) With the help of a neat sketch explain the construction and working of a fuel level gauge.

OR

6. a) Why ignition advance system is needed? Explain how it works with the help of sketches.
   b) Explain the construction and working of a contactless distributor ignition system.

Module 4 **20 Marks x 1 = 20 Marks**

7. a) What is lambda Sensor? Explain the construction and working of Lambda Sensor with a neat sketch.
   b) What is OBD II? How it helps in detecting the troubles in the system? Explain

OR

8. Explain the construction and working of a MPFI with a block diagram indicating all the systems. How does CRDI differs from MPFI. Explain in detail.