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Anna University Exams Nov/Dec 2015 – Regulation 2013
Rejinpaul.com Unique Important Questions – 5th Semester BE/BTECH
AT6502 AUTOMOTIVE ELECTRICAL AND ELECTRONICS SYSTEMS

Unit I

1. Discuss various battery parameters in detail. Also give nominal battery parameters for any four types of any four types of automotive batteries.
2. Explain different battery charging types and state of charge methods.
3. Explain with the aid of neat sketch, the principle, construction and working principle of alkaline battery.
4. (i) Explain with the aid of neat sketch, the principle, construction and working principle of lead acid battery. (ii) Discuss any three problem caused in a battery along with possible cause and remedial measures.

Unit II

1. Explain in detail the procedure adopted to test the working of a generator regulator system. Discuss the common faults occur in generators.
2. Explain the circuit diagram of charging system using D.C generator and functions of each component
3. Explain the construction and working of Cut-out relay. Draw a circuit layout of voltage and current regulator and discuss in detail
4. In detail explain the various types of starter drive. Explain the construction and working of alternator generating system.
5. Describe the construction and working of overrunning clutch type starting drive. What is the function of solenoid switch in a pre-engaged starter motor
6. Explain the working of electric horn, wiper system and Trafficator.

Unit III

1. Explain the components of a magneto ignition system in detail. Mention the advantages of magneto ignition system over battery coil ignition system.
2. Explain the mechanism of centrifugal and vacuum advance methods. Justify the need for combined method.
3. Explain Multiplexing and Demultiplexing with an application in automobile.

Unit IV

1. Explain the working of Oxygen sensor, hot wire mass air flow sensor with simple sketch.
2. With the aid of block diagram, explain the various components of Electronic Powertrain Control Module.
3. (i) With the aid of block diagram, explain the various components of Electronic Engine Control Module. (ii) With the aid of block diagram, explain the various components of Electronic Powertrain Control Module.
4. Sketch and explain the working of solenoids and stepper motor as actuators in vehicle?
5. Explain the operation and principle of fuel level indicator, oil level indicator, and coolant temperature indicator.

Unit V

1. Explain the components of programmed ignition system with a lay out
2. How does a breaker-triggered system work? Explain the working of capacity discharge ignition system with its advantages.
3. Write short notes on the following (i) PID control (ii) Formulation of Engine map (iii) Onboard diagnostics system.
4. State the purpose of keyless entry and anti-theft system list the main components used in both systems?
5. Explain the construction and working of wiper motor. Also explain the how an electric horn works.

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