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C 3406

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2008.

Seventh Semester

Mechatronics Engineering

MH 1402-AUTOMOTIVE ELECTRONICS

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write short notes on Euro II Emission norms.
2. Why series type of motor is used for engine starting purpose?
3. Compare and contrast the advantage of fuel injection system with respect to carburetor system.
4. Differentiate throttle body injection with respect to multi point fuel injection.
5. Mention the significance of measuring throttle angle.
6. Define Lamda and Stoichiometric ratio.
7. Briefly explain about the role of Look up table in engine management system.
8. State the need for diagnostics system.
9. Differentiate traction control and antilock braking system.
10. Write short notes on central locking system.

PART B — (5 × 16 = 80 marks)

11. (a) Justify the role of electronics in the modern automobile.

Or

- (b) Describe the construction, working principle and characteristics of alternator used in automobile.

12. (a) (i) With the aid of neat sketch, explain the working principle of Electronic ignition system. (12)
(ii) List out the advantages of Electronic ignition system. (4)

Or

- (b) With the simplified sketch, explain the construction, working principle and different circuits of a simple carburetor.

13. (a) With the aid of simple sketch, describe the construction and working principle of mass air flow sensor and coolant temperature sensor. (12+4)

Or

- (b) Discuss the role of different actuators applied in a vehicle along with its applications.

14. (a) Explain with a neat block diagram, the various components of a typical engine management system.

Or

- (b) Write short notes on (8+8)

- (i) Open and Closed loop control mode engine operation
(ii) Format of CAN standard

15. (a) Explain the role of electronics in suspension system and explain how ride comfort is achieved.

Or

- (b) (i) State the need for automatic transmission. (4)
(ii) Explain how electronics is playing a vital role in automatic transmission. (12)