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Question Paper Code : 20157

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Seventh Semester

Automobile Engineering

AT 6701 – ENGINE AND VEHICLE MANAGEMENT SYSTEM

(Regulations 2013)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is fuzzy logic?

2. What is meant by Look up tables?

3. What is the necessity for measuring the crank, cam shaft positions and engine speed in SI engine management system?

4. How the tyre pressure and brake pressure are measure in automobile control systems?

5. What is the need for cold start and warm up phases in fuel injection system?

6. Define the term fuel control maps.

7. List the components of the common rail fuel injection system.

8. Why Exhaust Gas Recirculation is necessary for an engine.

9. What is meant by supplementary restraint system?

10. List the types of crash sensor.

PART B — (5 × 13 = 65 marks)

11. (a) Discuss in detail the parameters of to be controlled in SI and CI engines.

Or

(b) Explain the operation of a PID controller in an IC engine.

12. (a) Discuss the construction and working of a sensor based on piezo electric effect and its application in car.

Or

(b) What is the necessity for measuring the steering position and steering torque and how they are measured?

13. (a) Explain the construction and working principle of a three way catalytic converter with neat sketch and discuss the efficiency versus lambda with a suitable graph. (8 + 5)

Or

(b) Elaborate on how the ignition control system works in an engine management system and what is the function of knock sensor in engine management system.

14. (a) Discuss in detail the various components of an electronically controlled common rail fuel injection system with a neat sketch.

Or

(b) Describe the operation of a unit injector system with neat sketch.

15. (a) Explain collision avoidance Radar warning system with a schematic.

Or

(b) Describe about electronic control of suspension – damping control.

PART C — (1 × 15 = 15 marks)

16. (a) What is ABS? How it ensures stability of a vehicle under braking. Discuss with suitable sketches. (3 + 3 + 9)

Or

(b) Elaborate the working of a Bosch LH jetronic injection system with a schematic. (9 + 6)

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