

Register Number.....

B.E. DEGREE EXAMINATIONS: NOV/DEC 2012

Seventh Semester

MECHATRONICS ENGINEERING

MCT119: Automotive Electronics

Time: Three Hours

Maximum Marks: 100

Answer All Questions:-

PART A (10 x 1 = 10 Marks)

1. Strictest emission norms are initiated in the world first
a) London b) New Delhi c) Tokyo d) California
2. Alternator working principle is
a) Electro static b) Electro- magnetic Induction c) Field theory d) Mutual Inductance
3. In a four-stroke IC engine cam shaft rotates at
a) Same speed as a Crank shaft b) Twice speed as a Crank shaft
c) Half speed as a Crank shaft d) Quarter speed as a crank shaft
4. Battery ignition system
a) occupies more space b) has more maintenance problem
c) is commonly employed in four wheelers d) all the above
5. Knock sensor use
a) Thermister b) thermocouple c) Piezo-electric pick-up d) MAP Sensor
6. Maximum possible exhaust gas re-circulation
a) 30 % b) 40% c) 50% d) 55%
7. ECU is an electronics injection system used for
a) Calculating the appropriate injection timing
b) Meeting only certain operating conditions
c) Closing the injection valve
d) opening the injection valve
8. CAN Protocol Developed by
a) Rockwell Automation b) Ford c) Tata Motors d) Bosch
9. MEMS Stands for
a) Micro-Mechanical System b) Micro electro mechanical system
c) Micro electrical system d) Micro electrical system

10. Traction control is used to arrest
a) Fuel leakage b) Wheel motion c) Wheel spinning d) Vehicle motion

PART B (10 x 2 = 20Marks)

11. What is meant by Euro norms?
12. List the classification of Starter motors.
13. Define clearance volume
14. Write the disadvantages of carburetor
15. What is the purpose of using a crank shaft sensor?
16. Write the advantages of exhaust gas recirculation system
17. What is meant by CAN?
18. What is closed loop control in engine management?
19. Write the advantages of ABS.
20. What is meant by active suspension system?

PART C (5 x 14 = 70Marks)

21. a) Discuss in detail about Euro I, Euro II, Euro III, Euro IV, Euro V with respect to Engine development.

(OR)

- b) Explain in detail about charging system with neat diagram.

22. a) Explain the Working principle of two Stroke Petrol engine with neat diagram

(OR)

- b) Explain about the programmed ignition system with neat diagram

23. a) Explain the working principle of permanent magnet stepper motor with help of neat sketch.

(OR)

- b) Explain the working principle of crank shaft position sensor and accelerometer with neat diagram

24. a) Explain in detail about electronic engine management system with neat diagram.

(OR)

b) Discuss in detail about the On- board diagnostics with neat diagram.

25. a) With a neat sketch give details about the working principle of traction control system.

(OR)

b) Enumerate the working principle of airbag system with appropriate diagrams.
