

Register Number:

B.E DEGREE EXAMINATIONS: APRIL/MAY 2014

(Regulation 2009)

Sixth Semester

AUTOMOBILE ENGINEERING

AUE116: Advanced Automotive Systems

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Capacitive discharge ignition system stores charged energy for the spark in -----
 - a) ECU
 - b) Capacitor
 - c) Timing sensor
 - d) Coil on plug
2. Which is not considered to be a component of a typical Electronic Fuel Injection System?
 - a) MAP Sensor
 - b) TP Sensor
 - c) G Sensor
 - d) IAT Sensor
3. ----- is used to control and configure CAN module.
 - a) Registers
 - b) Interfaces
 - c) RAM and softwares
 - d) ECU
4. Which of the following In addition to becoming projectiles in the event of a crash , what is the common danger of dash mounted accessories.
 - a) Interference with in dash electronics
 - b) Brain tumour
 - c) Distracting other drivers
 - d) Restricted life of sight
5. What is night vision?
 - a) A set of extra light that can help you see in fog or complete darkness
 - b) An infrared camera connected to a dashboard mounted screen
 - c) A series of green light that allow for better vision at night
 - d) Extra strong fog lights that improves your night vision
6. The "Heart" of a vehicle's electronic fuel injection system is-----
 - a) Carburetor
 - b) Fuel injector
 - c) Fuel pump
 - d) Power train Control Module
7. ----- is the example of closed loop control system.
 - a) Cruise control
 - b) Central lock control
 - c) Electronic window control
 - d) Sensors and Actuators
8. In TCS ----- is not used to ensure passenger comfort.

- a) Brake sensor
 - b) Hydraulic modulator
 - c) Maximum brake pressure
 - d) Minimum brake pressure
9. Which of the following is main component of airbag control system?
- a) ECU
 - b) Pyrotechnic inflates
 - c) Warning light
 - d) Belt tensioners
10. Which of the following is not a seat belt tensioners?
- a) Spring tension
 - b) Pyrotechnic
 - c) Airbag
 - d) All of the above

PART B (10 x 2 = 20 Marks)

11. What are the advantages of using electronics in automobile?
12. What is lambda sensor?
13. What is meant by geographical information system?
14. State: remote keyless entry system?
15. Draw the block diagram of electronic diesel control system?
16. What is sequential multipoint injection?
17. What is meant by adaptive cruise control system?
18. Compare TCS with ABS?
19. Give the advantages of seat belt pre-tensioner system?
20. State how air bags are actuated?

PART C (5 x 14 = 70 Marks)

21. a) Explain briefly the Electronic engine control unit with neat sketch.

(OR)

- b) (i) List the types of sensors and actuators used in automobile? (6)
- (ii) Explain any two sensors and actuators in detail? (8)

22. a) What is global positioning system? Explain with a neat layout?

(OR)

- b) Draw the circuits of power seats and power windows and give its working principle.

23. a) (i) Brief the following: feedback carburetor system (7)
- (ii) Throttle body injection (7)

(OR)

b) What is meant by solid state ignition system with neat sketch explain antilock braking system and Explain its working Principle and operation with neat layout?

24. a) (i) Why is TCS system employed in automobiles? (7)
(ii) What do you mean by collision avoidance control and cruise control system? (7)

(OR)

b) What is the need of vehicle stabilization system? Compare vehicle motion control with vehicle stabilization system?

25. a) State the working principle of air bags. Also explain its operation and its need in automobiles.

(OR)

b) List any two types driver monitoring system with neat layout.
