



B.E DEGREE EXAMINATIONS: NOV 2015

(Regulation 2009)

Seventh Semester (Fast Track)

AUTOMOBILE ENGINEERING

AUE133 : Modern Automobile Accessories

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The plug gap in spark plug is
 - a) 0.12mm-0.18mm
 - b) 0.06mm-1.2mm
 - c) 0.6mm-1.2mm
 - d) 1.2mm-1.8mm
2. Which of the following emission causes acid rain
 - a) Carbon Monoxide
 - b) Carbon Dioxide
 - c) Nitrogen Oxide
 - d) Hydrocarbons
3. An oscilloscope connected to a wheel speed sensor should show a
 - a) sine wave pattern
 - b) cosine wave pattern
 - c) high resistance
 - d) low resistance
4. Electronically controlled automatic transmissions can prevent surging by controlling:
 - a) hydraulic vacuum
 - b) hydraulic pressure
 - c) feedback vacuum
 - d) feedback pressure
5. Which of the following is a true statement?
 - a) an air conditioning compressor is controlled by an electromagnetic clutch
 - b) an air conditioning compressor is permanently driven
 - c) the compressor is always mechanically controlled
 - d) the compressor is always manually controlled
6. The component that controls the flow of refrigerant as demanded by the system is called the:
 - a) Compressor
 - b) condenser
 - c) Evaporator
 - d) expansion valve
7. The frequency reproduction from a 'tweeter' type speaker would be described as
 - a) High
 - b) Middle range
 - c) Low
 - d) Very low

8. A window lift motor drives through a worm gear because this
- a) increases speed and torque
 - b) reduces speed and torque
 - c) increases speed and reduces torque
 - d) reduces speed and increases torque
9. A system that improves the grip of driven wheels when accelerating is known as
- a) ABS
 - b) ECU
 - c) TCR
 - d) ECAT
10. Which of the following would provide an input signal to an alarm system?
- a) Volumetric sensor
 - b) Volumetric transmitter
 - c) Ignition immobilizer
 - d) Unbroken loop circuit

PART B (10 x 2 = 20 Marks)

- 11. Compare SI and CI engines.
- 12. What are the reasons for pre-ignition?
- 13. Define total vehicle dynamics.
- 14. What are the demerits of pneumatic suspension system?
- 15. State the meaning of 'plenum chamber'.
- 16. State three potential benefits of an electrically driven air conditioning compressor.
- 17. What are the three aims of adaptive cruise control?
- 18. Name two methods of radio signal transmission.
- 19. List the components used in tyre pressure monitoring system.
- 20. What are the three means to disable the vehicle?

PART C (5 x 14 = 70 Marks)

21. a) With block diagram, explain the fuel injection system and its various components.

(OR)

- b) (i) Write about exhaust emission regulations followed in automobiles. (10)
- (ii) List the purposes of catalytic converter (4)

22. a) What do you understand by active suspension system? Discuss its major functions.

(OR)

- b) Discuss the role of ECU in automatic transmission system of automobiles.

23. a) (i) Describe the reason for and the operation of a thermostatic expansion valve. (10)
(ii) List four functional requirements of a seat heater. (4)

(OR)

- b) Discuss the new developments in temperature control system of automobiles.

24. a) (i) Describe with the aid of a block diagram, the operation of a cruise control system. (7)
(ii) Explain the principle of adaptive noise control system. (7)

(OR)

- b) (i) Illustrate the component details of vehicle monitoring system. (7)
(ii) Describe the concept of power steering. (7)

25. a) (i) Describe the operating sequences of a driver's airbag. (8)
(ii) Write the steps followed in seat belt tightening mechanism used in light motor vehicles. (6)

(OR)

- b) (i) In what way antilock braking system is better than conventional one? Justify. (8)
(ii) With block diagram, discuss about traction control system. (6)
