



Register Number:.....

B.E DEGREE EXAMINATIONS: NOV 2015

(Regulation 2009)

Seventh Semester

MECHANICAL ENGINEERING

MEC122: Automobile Engineering

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. The minimum number of rings in a piston are
 - a) Two
 - b) Three
 - c) Four
 - d) Six
2. Material used for cylinder block are
 - a) Cast iron and steel
 - b) Cast iron and aluminium alloy
 - c) Steel and aluminium alloy
 - d) Brass and steel
3. When an engine is idling, it requires
 - a) no fuel in air
 - b) Lean fuel-air mixture
 - c) Rich fuel-air mixture
 - d) Stoichiometric mixture
4. The dynamo in automobile
 - a) Converts mechanical energy into electrical energy
 - b) Continuously recharge the battery
 - c) Acts as a reservoir of electrical energy
 - d) Supplies electric power
5. Cushioning springs in clutch plate are meant to reduce
 - a) Torsional vibrations
 - b) Vehicle speed
 - c) Jerky starts
 - d) Engine torque
6. Where is the Hook's joint used in an automobile car?
 - a) Between gear box and propeller shaft
 - b) Between flywheel and clutch
 - c) Between differential gear and wheels
 - d) Between clutch and gear box
7. In the recirculating ball type steering gear the balls travel between the ball nut and the
 - a) Gear rack
 - b) Worm wheel
 - c) Steering wheel shaft
 - d) Worm shaft

8. A shackle with a leaf spring
- a) Prevents squeaking sound
 - b) Allows the spring length to change
 - c) Provides good traction
 - d) Allows pivoting of spring end
9. The specific gravity of diesel is
- a) 1
 - b) 0.7
 - c) 0.85
 - d) 1.25
10. Solar photovoltaic cell converts solar energy directly into
- a) Mechanical energy
 - b) Electricity
 - c) Heat energy
 - d) Transportation

PART B (10 x 2 = 20 Marks)

11. State the purpose of turbo charger.
12. List some of the loads act on vehicle chassis frame.
13. What is the function of float chamber in a simple Carburetor?
14. Name the basic ignition system?
15. List the types of clutches.
16. Mention the advantages hotch kiss drive.
17. Give the requirements of good braking system.
18. What do you mean by the term independent suspension system?
19. What are the reasons to develop fuel cells?
20. Mention the advantages of biodiesel.

PART C (5 x 14 = 70 Marks)

21. a) Explain with neat sketch of engine emission control by three way catalytic converter.
- (OR)**
- b) Draw the layout of an automobile and indicate its various components and explain any four components.
22. a) Explain the working principle of electronic fuel injection system with suitable sketch.
- (OR)**
- b) Discuss the construction, operation and maintenance of lead acid battery with simple sketch.
23. a) With neat diagram describe the working of sliding mesh gear box.

(OR)

b) Discuss in detail about propeller shaft, slip joint and universal joint.

24. a) Explain the working of any two types of steering gear box with neat diagram.

(OR)

b) With a neat sketch explain the principle of operation of hydraulic braking system and mention their merits and demerits.

25. a) With a layout diagram explain the working features of hybrid vehicle.

(OR)

b) Explain the construction and working principle of fuel cells with sketches.
