

**B.E DEGREE EXAMINATIONS: MAY/JUNE 2013**

Fourth Semester

**AUTOMOBILE ENGINEERING**

AUE106 Automotive Engines

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. In a 4 stroke cycle petrol engine during suction stroke,
  - a) only air is sucked in
  - b) only petrol is sucked in
  - c) mixture of petrol and air is sucked in
  - d) None of the above
2. Compression ratio of diesel engines may have a range
  - a) 8 to 10
  - b) 10 to 15
  - c) 17 to 21
  - d) None of the above
3. Carburetor is used for
  - a) Petrol Engines
  - b) Gas Engines
  - c) Diesel Engines
  - d) None of the Above
4. If compression ratio is increased,
  - a) Thermal Efficiency will be increased
  - b) Volumetric efficiency will be increased
  - c) Air standard efficiency is increased
  - d) Air standard efficiency is decreased
5. In a four cylinder petrol engine the standard firing order is
  - a) 1-2-3-4
  - b) 1-4-3-2
  - c) 1-3-2-4
  - d) 1-3-4-2
6. The Combustion process in Diesel Engine is
  - a) Constant Pressure Process
  - b) Isothermal Process
  - c) Constant Volume Process
  - d) Adiabatic Process
7. The radiator tubes are manufactured using
  - a) Cast iron tubes
  - b) Aluminum tubes
  - c) Brass tubes
  - d) Steel Tubes
8. Immediately after ignition, combustion chamber temperatures may reach a value of
  - a) 1500°C
  - b) 5500°C
  - c) 2500°C
  - d) 7500°C
9. If we know the engines speed, bore, stroke, number of cylinders and m.e.p in the cylinders, we can calculate
  - a) FHP
  - b) IHP
  - c) BHP
  - d) None of these

10. The ratio between the power output of an engine and the energy in the fuel burned to produce that power is called
- a) Volumetric Efficiency
  - b) Thermal Efficiency
  - c) Mechanical Efficiency
  - d) None of these

**PART B (10 x 2 = 20 Marks)**

- 11. Draw the Otto cycle on P-V diagram.
- 12. What is a Hybrid Electric Vehicle?
- 13. What are the three basic types of carburetors?
- 14. What is the advantage of Fuel Injector over Carburettor?
- 15. What is meant by Knocking?
- 16. What is meant by Abnormal Combustion?
- 17. Write the reasons why cooling is required for an engine?
- 18. What is the difference between by Wet Sump and Dry Sump lubrication systems?
- 19. What are the Parameters based on which the I. C. Engines are tested?
- 20. What is the main difference between Supercharger and Turbocharger?

**PART C (5 x 14 = 70 Marks)**

21. a) Explain in brief about 2-stroke and 4-stroke engines with neat sketch.

**(OR)**

- b) Write about Otto Cycle and Diesel Cycle? Elaborate the differences between the actual and theoretical cycles.

22. a) What is a Carburetor? List its types and Explain any two in brief with neat sketch.

**(OR)**

- b) Explain briefly the electronic fuel injection system used in modern cars.

23. a) Explain with figures various types of combustion chambers used in SI engines.

**(OR)**

b) Explain in detail about Stages of Combustion in S. I. Engines and C. I. Engines.

24. a) With suitable sketches explain the Air Cooling and Liquid Cooling Systems of an Automobile

**(OR)**

b) (i) Why do we need Lubrication System for an Automotive Engine? (4)

(ii) Sketch and Explain Mist Type Lubrication System. (10)

25. a) Explain in detail about construction and working of Supercharger and Turbocharger.

**(OR)**

b) (i) List the types of test carried to measure Friction Horse Power of an Engine. (4)

(ii) Explain in detail about Eddy Current Dynamometer. (10)

\*\*\*\*\*