



B.E DEGREE EXAMINATIONS: MAY 2015

(Regulation 2013)

Fourth Semester

AUTOMOBILE ENGINEERING

U13AUT404: Automotive Petrol Engines

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. Minimum number of valves required for a four stroke engine is
 - a) 1
 - b) 2
 - c) 3
 - d) 4
2. Engine block Sleeves used for _____
3. Carburetor controls
 - a) Air flow to engine
 - b) fuel flow to engine
 - c) Ignition timing
 - d) Quantity and quality of air and fuel mixture
4. Idling the engine requires _____ mixture.
5. Thermostat in an engine is used to maintain _____.
 - a) Flow of fuel
 - b) Temperature of coolant
 - c) Pressure of coolant
 - d) Fuel flow
6. Air cooling is used in _____ size engines
7. Knocking occurs due to
 - a) High pressure inside the cylinder
 - b) Less air in the cylinder
 - c) Low temperature in the cylinder
 - d) Presence of exhaust gas in the cylinder
8. _____ is used as antiknocking agent.
9. Roots blower is used for
 - a) Cooling the inlet air
 - b) Scavenging of two stroke engines
 - c) Exhaust gas dilution
 - d) Blowing air into the passenger area
10. Scavenging method preferred in two stroke engines is _____

PART B (10 x 2 = 20 Marks)

(Not more than 40 words)

11. What are the advantages of battery ignition system?
12. What are the possible firing orders for a four cylinder engine?
13. What is Multi point fuel injection?
14. What are the demerits of fuel injection system?
15. Name some disadvantages of liquid cooled system?
16. What is the effect of freezing of coolant?
17. Sketch any two types of combustion chamber.
18. What is flame front?
19. With a sketch show the cross flow scavenging.
20. What are the advantages of two stroke engines?

PART C (5 x 14 = 70 Marks)

(Not more than 400 words)

Q.No. 21 is Compulsory

21. Explain - Otto cycle with indicator diagrams.
22. a) Explain the working of a Constant vacuum carburetor

(OR)

- b) What are the requirements of a carburetor? Explain in detail.

23. a) With a sketch explain the pump assisted cooling system

(OR)

- b) Explain the function of wet sump lubrication system with a sketch

24. a) Summarize the effect of various parameters in affecting the combustion process in a SI engine.

(OR)

- b) (i) Discuss the various factors affecting the knocking. (7)
(ii) With a sketch, show the effect of spark plug location on flame front travel (7)

25. a) Discuss the advantages of using various types of scavenging pumps in a two stroke engine.

(OR)

- b) Differentiate two stroke and four stroke engine operation with necessary diagrams.
