

PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Winter 2019-20 Examination

Semester: 5**Subject Code: 03102301****Subject Name: Automobile Engines****Date: 28/11/2019****Time: 10:30am to 01:00pm****Total Marks: 60****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (Each of one mark) (15)

1. Which of the following is the lightest and most volatile liquid fuel?
 A) Diesel B) Kerosene C) Fuel oil D) Gasoline
2. The ignition of the charge by some hot surface within the engine before the passage of spark is called
 A) Pre-ignition B) Detonation C) Ignition delay D) Auto-ignition
3. The ignition quality of petrol is expressed by
 A) Cetane number B) Octane number C) Calorific value
4. The distributor shaft of a four stroke I.C. engine which running at 1000 rpm will run at
 A. 1000 B. 500 C. 2000 D.1500
5. During compression stroke the air is compressed according to
 A) Isothermal process B) Hyperbolic process
 C) Adiabatic process D) Constant pressure process
6. Define Clearance volume.
7. What do you mean by governing system?
8. What do you mean by a stoichiometric air-fuel ratio?
9. What do you understand by overlapping of valve?
10. What do you mean by firing order?
11. What is a catalyst?
12. Define Volumetric efficiency
13. In an Internal Combustion engine, the process of removing the burnt gases from the combustion chamber of the engine cylinder is known as _____.
14. During idling, a petrol engine requires _____ mixture.
15. The ignition quality of Diesel is expressed by _____.

Q.2 Answer the following questions. (Attempt any three) (15)

- A) What is the function of Lubrication system? Differentiate Wet sump and Dry sump Lubrication system.
- B) Compare S.I. engines with C.I engines.
- C) Explain Rope brake dynamometer with figure.
- D) Explain various losses occur in actual cycle.

Q.3 A) Define supercharging and give its advantages. Explain the different methods of Supercharging. (07)

- B) What do you mean by ignition system? Explain with neat sketch of Magneto ignition system. (08)

OR

- B) Explain the ignition lag and engine variable that affect ignition lag. (08)

Q.4 A) Why cooling system is required? List out the types of cooling system & Explain any one method of cooling system. (07)

OR

- A) List out limitations of carburettor and Explain MPFI system with neat sketch. (07)

- B) Explain port timing diagram for IC-Engine with neat sketch. (08)