(b) Discuss the factors affecting Spark Plug Operation. 5

7. What are the various methods for controlling of Air pollution in IC engines ? Discuss in detail. 15

❖❖❖❖❖❖❖

25/5 M

Roll No. ..... Total Pages : 04

013604

May 2026

B.Tech. (ME) (Sixth Semester)

Internal Combustion Engine

(PEC-ME-603-21)

Time : 3 Hours] [*Maximum Marks : 75*

Note : It is compulsory to answer all the questions (1.5 marks each) of Part A in short. Answer any *four* questions from Part B in detail. Different sub-parts of a question are to be attempted adjacent to each other.

Part A

1. (a) What are the different types of Engines ? 1.5

(b) What are the different fuels used in IC Engines ? 1.5

(c) What are different strokes used in IC Engines ? 1.5

(d) What is the EFI system ? 1.5

(e) What is the Ignition System ? 1.5

(f) What is the Friction Power ? 1.5

(g) What is the need of combustion in IC Engines ? 1.5

(h) What is the Cooling system ? 1.5

(i) What are the scavenging systems ? 1.5

(j) What are the benefits of pollution control methods ? 1.5

Part B

2. (a) What are the differences between 2 Stroke Diesel and 4 Stroke Diesel Engine ? 10

(b) Explain Valve Timing Diagram for 4-Stroke Petrol Engine. 5

3. (a) What are the different functions of Carburettor system ? Discuss in detail. 10

(b) Discuss the Main Metering system of Carburettor used in IC Engine. 5

4. During the test (60 minutes) on a single-cylinder oil engine operating on a cylinder diameter 250 mm, stroke 600 mm a four-stroke cycle, the following observations were made : total usage Fuel = 10.6 litres, Calorific value of fuel = 42000 kJ/kg, Total number of revolutions = 12542 Gross indicated mean effective pressure = 8.02 bar, pumping m.e.p. = 0.55 bar, Net load at brake = 2740 N, diameter of brake wheel drum = 3.58 m, diameter of rope = 45 mm, cold water circulating = 450 litres, temperature rise of cooling water = 410 C, specific gravity of oil, Determine : (i) Thermal Efficiency (ii) Mechanical Efficiency. 15

5. (a) What is the wet sump Lubrication system ? 5

(b) What are the factors affecting knocking system in IC Engines ? 10

6. (a) What is the difference between Battery Ignition system and Magneto Ignition System ? 10