



**PRESIDENCY UNIVERSITY  
BENGALURU**

**SCHOOL OF ENGINEERING  
MID TERM EXAMINATION - APR 2023**

**Semester :** Semester VI - B.Tech MEC - 2020

**Course Code :** MEC4009

**Course Name :** Sem VI - MEC4009 - I C Engines and Fuels

**Program :** MEC

**Date :** 15-APR-2023

**Time :** 2PM – 3.30PM

**Max Marks :** 60

**Weightage :** 30%

**Instructions:**

(i) Read all questions carefully and answer accordingly.

(ii) Question paper consists of 3 parts.

(iii) Scientific and non-programmable calculator are permitted.

(iv) Do not write any information on the question paper other than Roll Number.

**PART A**

**ANSWER ALL THE QUESTIONS**

**(5 X 2 = 10M)**

1. What is the main differences between two designs of biogas production? (CO1) [Knowledge]
2. Provide four differences between two stroke and four stroke engines. (CO1) [Knowledge]
3. Provide four differences between petrol and diesel engines. (CO1) [Knowledge]
4. State and write the equations of mean effective pressure and Torque with proper units. (CO2) [Knowledge]
5. Define combustion and provide its types in engines. (CO2) [Knowledge]

**PART B**

**ANSWER ALL THE QUESTIONS**

**(3 X 10 = 30M)**

6. What are the different methods used to find IP of an engine? Explain Morse Test method with equations. (CO1) [Comprehension]
7. Sketch a biogas plant and explain its functioning (CO2) [Comprehension]
8. List the merits and demerits of using Hydrogen as a fuel (CO2) [Comprehension]

**PART C**

**ANSWER THE FOLLOWING QUESTION**

**(1 X 20 = 20M)**

9. Explain with proper sketches the production of Methanol from coal / lignite and Ethanol from grains clearly. (CO2) [Application]