Roll No. ☐☐☐☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages : 02**

Total No. of Questions : 09

B.Tech.(AE) (2011 Onwards)   (Sem.–4)
AUTOMOTIVE FUELS AND EMISSIONS
Subject Code : BTAE-405
M.code : 54126

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. **Answer briefly :**

   (a) Can one use solid fuels for automotive? If so how.

   (b) What are the disadvantages of Bio-fuel?

   (c) What is wood gas?

   (d) What is NO formation?

   (e) What is the function of EGR?

   (f) What is catalytic converter?

   (g) What air fuel ratio gives best fuel economy?

   (h) What is Tyre Pyrolysis oil?

   (i) Write any two properties of blends.

   (j) Is CO_2 a pollutant? Why?

SECTION-B

2. Discuss the mechanism in catalytic converter.

3. Brief about resent scenario of conventional auto fuels. Explain in detail about the effect of combustion time and spark timing on Nitric oxide formation in spark ignition engine.

4. How the temperature of cylinder gases and flame speed are affected by A/F ratio in C.I engine?

5. Explain the use of ammonia in stationary engine application.

6. How does fuel injection help to reduce automobile pollution? Discuss.

SECTION-C

7. Describe how proper design of combustion chamber helps to reduce exhaust emission.

8. Write the short notes on following :

   a) Methanol fuel

   b) Bio diesel fuel

9. How does an automobile contribute towards pollution of the atmosphere? Discuss various methods to reduce the emission of pollutants in exhaust gases.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.