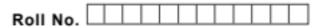


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Total No. of Pages : 02

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 :**

- SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
- SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
- 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 CO2 a pollutant? Why?

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#### SECTION-B

- 2. Discuss the mechanism in catalytic converter.
- 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.
- Write the short notes on following :
  - a) Methanol fuel
  - b) Bio diesel fuel
- How does an automobile contribute towards pollution of the atmosphere? Discuss various methods to reduce the emission of pollutants in exhaust gases.

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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.



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