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Total No. of Pages: 02
Total No. of Questions: 09

B. TECH (Sem.-4th)
AUTOMOTIVE FUELS AND EMISSIONS
Subject Code: BTAE-405
Paper ID: [A1165]

Time: 3 Hrs.**Max. Marks: 60****INSTRUCTIONS TO CANDIDATE:**

1. Section-A is compulsory.
2. Section-B Attempt any four questions.
3. Section-C Attempt any two questions.

SECTION-A

(10x2=20)

Q. 1.

- (a) What is the effect of rich mixture of air fuel ratio in C.I. Engine.
- (b) What are the disadvantages of CNG fuel?
- (c) Draw with neat sketch Pressure-time diagram of combustion for C.I. Engine.
- (d) What is Sonex system for emission control.
- (e) Write any one reason for Low CO and Hydrocarbon emission in CI Engine.
- (f) How auto-ignition is responsible for knocking in S.I. Engines.
- (g) What is meant by ignition delay.
- (h) Draw with neat sketch NDIR analyzer.
- (i) What is chromatography?
- (j) What is catalytic converter?

Section-B

(4x5=20)

- Q. 2.** Discuss in detail the two types of crankcase ventilation systems used in automobiles.
- Q. 3.** Explain clearly how the atmospheric pollution from the carburetor and the fuel tank is Prevented.
- Q. 4.** What is the problem experienced while using vegetable oil in diesel engine.
- Q. 5.** Brief about bio-fuel and its characteristics.
- Q. 6.** Explain the performance characteristics and limitations of the bio diesel fuel.

Section-C

(2x10=20)

- Q. 7.** Describe the phenomenon of detonation or knocking in S.I. Engines. How can it be controlled?
- Q. 8.** Write the short notes on following: (i) CNG fuel (ii) SMOKE meter
- Q. 9.** Explain the performance and emission characteristics of engine running on LPG.

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