

[illegible]

B.Tech. (AE) (2012 to 2017) (Sem.-4)
AUTOMOTIVE FUELS AND EMISSIONS
Subject Code : BTAE-405
M.code : 54126

Max. Marks : 60

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.**

- a. How is Bio diesel manufactured?
- b. Name any two synthetic alternative fuels.
- c. Name any two future alternative fuels.
- d. How the ammonia can be hazardous to humans?
- e. What are water fuel cells?
- f. What do you understand by particulate emissions?
- g. How catalytic converter works?
- h. What is 'unleaded petrol'?
- i. Provide utility of flame ionisation detectors.
- j. What is NDIR analyser?

SECTION-B

2. Give classification of automobile fuels. Explain with reference to present scenario of auto fuel emissions.
3. What are alternative fuels? Why we need them? Provide the complete road map for alternative fuels.
4. What are the performance and safety aspects related to automobile fuels? Explain each fuel with their properties and production process.
5. How the automobile emissions affect the health of humans? Explain briefly.
6. Explain the following :
 - a. Compressed natural Gas
 - b. Liquefied petroleum Gas
 - c. Bio-Fuels

SECTION-C

7. What are the HC, CO and NO emissions, how they are different in CI and SI engines? Explain Briefly.
8. What is NO_x treatment in diesel engine? How it helps to reduce pollutants?
9. What is 'Exhaust gas recirculation'? How it helps to reduce pollutants and enhance efficiency of engines.

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.