

Dr Dehashish Das

6/5/2023

National Institute of Technology, Hamirpur (HP)

Name of the Examination: End Semester

Branch: Mechanical Engineering (B.Tech.)

Semester: 8th

126

Title of the course: Alternative Fuel Technology

Course Code: ME-460

Maximum Marks: 50

Time: 3 Hours

Note: Answer all the question & Consider suitable Values if required.

1. Write short notes with proper discussion: (5 X 4 = 20)
 - (a) Parameters counted during engine testing
 - (b) Potential of alternative fuel in India
 - (c) Methanol as future fuel for India
 - (d) Reduction zone of gasifier
 - (e) Uncertainty analysis by J. P. Holman
2. Why use of nano-particles into the biodiesel help to increase better performance and less emission? (3)
3. What is Degumming and why pure biodiesel is not advisable to run in IC Engine? (5)
4. Advantages and disadvantages of using Hydrogen as a fuel. (Write five each) (5)
5. Show and discuss the trends of the following graphs with the comparisons of biodiesel and mineral diesel.
 - (a) BTE Vs BP
 - (b) BSFC Vs BP
 - (c) NO_x Vs BP(2 X 3 = 6)
- (6) Write five advantages and disadvantages of Bio mass gasification. (5)
- (7) Draw a neat sketch of Updraft gasifier and discuss its process of generation of biogas. (6)