

Roll No

MEEM-203

M.E./M.Tech., II Semester Examination, June 2020

Fuel Technology and Air Pollution

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) Give a brief classification of coal. Discuss each type.
b) What is natural gas? Discuss its composition, application and safety concerns.
2. a) Explain the phenomenon of combustion. What are the various types of combustion?
b) What is octane and cetane number? Discuss the importance of these numbers in the selection of fuel.
3. a) Discuss the process of distillation of petroleum product.
b) What is liquefaction of coal? Discuss in brief.
4. a) Explain the method of determination of calorific value of fuel.
b) Explain the different types of gaseous fuel with their applications.
5. a) Write a brief note on purification of gaseous fuel.
b) What is gasifier? Explain the various types of gasifiers with their applications.
6. a) Discuss the importance of biofuels. Give a brief description of biofuels for petrol and diesel engines separately.
b) Explain the process of converting the plant oil into the biodiesel. Write a brief note on characterization of biodiesel.
7. a) What are the various air pollutants? Discuss the effect of various air pollutants on the human health.
b) Explain the methods of measuring particulate matters in ambient air. How to control the particulates?
8. Write short note on:
 - a) Knocking
 - b) Nuclear fuel
 - c) Biomass based power generation
