

[This question paper contains 3 printed pages]

Your Roll No. :

Sl. No. of Q. Paper : **5965** **I.**

Unique Paper Code : 2172551201

Name of the Paper : DSC : Fossil Fuels and
Cleansing Agents

Name of the Course : **Bachelor of Science**
(prog) – Industrial
Chemistry

Semester : II

Time : 2 Hours **Maximum Marks : 60**

Instructions for Candidates :

- (a) Write your Roll No. on the top immediately on receipt of this question paper.
 - (b) There are **six** questions in all. Attempt any **four** questions.
 - (c) Each Question carries **15 marks**.
- 1.** (a) Differentiate between renewable and non-renewable sources of energy.
- (b) What is Iodine Number ? How does the Iodine number help in characterizing oils and fats ?
- (c) Write short notes on producer gas and water gas.

5×3

P.T.O.

2. (a) Give the composition and uses of coal gas.
 (b) What is the difference between distillation and fractional distillation ? Explain.
 (c) What is acid value of an oil/fat ? Explain the significance of determining it. 5×3
3. (a) What is biofuels ? Give the characteristics of biofuels.
 (b) Define fats/oils. Why is hydrogenation of oil needed ?
 (c) Differentiate between thermal cracking and catalytic cracking. 5×3
4. (a) Differentiate between Primary and Secondary fuels. Give two characteristics of a good fuel ?
 (b) What are surfactants ? Give their classification with example.
 (c) Write the steps involved in refining of petroleum. Why do we need to refine it ? 5×3

5. (a) What is coking ? What are the prerequisites of good metallurgical coke ?
 (b) What do you mean by saponification number ? Write a note on "preparation of soap".
 (c) What is reforming of gasoline ? Why is it done ?
6. (a) What is calorific value of a fuel ? How is it determined ? How can we increase the anti-knocking capacity of a fuel ?
 (b) Explain Octane number and Cetane number.
 (c) What are soaps and detergents ? Explain the cleansing action of soaps with diagram. 5×3
