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7. Define maceral, classifying criterion of maceral groups, and enumerate its diagnostic properties. Explain Liptinite group of macerals in detail and comment on importance of fluorescence microscopy in maceral study.
8. Discuss in brief about proximate and ultimate analysis of coal and its application in coal ranking, grade and type.

(200)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 5551

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Unique Paper Code : 2192013602

Name of the Paper : Fuel Geology (DSC-17)

Name of the Course : **B.Sc. Geology (NEP)**

Semester : VI

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer any **five** questions in all and attempt minimum **two** questions from each section.
3. **All** questions carry equal marks.

Section A: Petroleum Geology

1. Discuss the various depositional processes of organic matter-rich source rock. Also discuss the role of Oxidic and Anoxic environments in depositing organic materials.

P.T.O.

2. Write short notes on any **three** of the followings :

- (i) Secondary porosity in non-clastic reservoir rocks.
- (ii) Effect of temperature on the porosity and permeability of reservoir rocks
- (b) Causes for massive hydrocarbon reserves during the Mesozoic time
- (c) How does sedimentary environment reconstruction help in hydrocarbon exploration?

3. Discuss in detail any **two** of the followings :

- (a) Types I and Type II Kerogen suitability for hydrocarbon generation
- (b) Effect of buoyancy in secondary migration of hydrocarbon
- (c) Petroleum system with a neat sketch

4. Discuss the following :

- (a) Effects of pressure and temperature on primary migration
- (b) Catagenesis and Metagenesis processes of hydrocarbon generation
- (c) Stagnant model for deposition of organic material with examples.

Section B: Coal Geology

5. Write short notes on any **two** of the followings :

- (a) Structures associated within coal seam
- (b) Microlithotypes of hard coal and their application in coal utilization
- (c) Underground coal gasification and comment on its advantage and disadvantages

6. Comment on the clean coal technology and discuss the methods of DCL and ICL, merits and demerits of coal liquefaction. Compare the world vs. Indian scenario of coal liquefaction.