

November 2025
M.Sc.
Third Semester
DISCIPLINE SPECIFIC ELECTIVE – 01
GEOLOGY
Course Code: MGLD 3.11 (A)
(Fuel Geology & Geochemistry)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. Write an account of the rank, grade, and types of coal. 14
2. Write a note on each of the following: 7×2=14
 - (a) Chemical characterisation of coal
 - (b) Concept of macerals and microlithotypes

UNIT-II

3. Describe primary and secondary migration of hydrocarbons. Give the difference between them. 10+4=14
4. Write a note on each of the following: 7×2=14
 - (a) Trapping mechanisms for oil and gas
 - (b) Maturation of organic matter into kerogen

UNIT-III

5. Write an account of major oil-bearing basins of India. 14
6. Write a note on each of the following: 7×2=14
 - (a) Source rock and cap rock
 - (b) Geology of Bombay High

UNIT-IV

7. Explain the origin and abundance of elements in the Solar System and in the Earth. 14

8. Write a note on each of the following: 7×2=14
(a) Geochemical classification of elements
(b) Difference between transition and rare Earth elements

UNIT-V

9. Compare and contrast U-Pb dating with another radiometric dating method. Discuss the relative advantages, limitations, and geological applications of each technique. 7+7=14
10. Write a note on each of the following: 7×2=14
(a) Difference between radiogenic and radioactive isotopes
(b) Abundance and fractionation of stable isotopes
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