



Government College (Autonomous), Rajahmundry
(Affiliated to Adikavi Nannaya University)
II B.Sc., GEOLOGY 2024-25
IV SEMESTER
Model Question Paper
Course 10: IGNEOUS, SEDIMENTARY AND METAMORPHIC PETROLOGY

Time: 2 1/2 Hours

Max.Marks: 50

SECTION - A

Answer any **FIVE** of the following questions. Each question carries **7 Marks**.

5 x 7 = 35 Marks

1. Explain the formation of igneous rocks and the crystallization process of unicomponent and bicomponent magmas.
2. Discuss the origin, composition, and constitution of magmas.
3. Describe Bowen's Reaction Principle and its significance in igneous petrology.
4. Explain the processes of magmatic differentiation, fractional crystallization, and assimilation.
5. Describe the various structures and textures of metamorphic rocks with examples.
6. Explain the classification of metamorphic rocks based on grades and zones of metamorphism.
7. Define lithification and diagenesis. Explain their role in the formation of sedimentary rocks.
8. Write a detailed note on non-marine sedimentary environments like glacial, aeolian, lacustrine, and fluvial environments.

SECTION - B

Answer any **FIVE** of the following questions. Each question carries **3 Marks**.

5 x 3 = 15 Marks

9. Define magmatic differentiation.
10. What are ACF, AKF, and AFM diagrams in metamorphic petrology?
11. Explain the concept of metamorphic facies.
12. What are the different forms of igneous rocks?
13. Differentiate between clastic and non-clastic sedimentary rocks.
14. Write a short note on the provenance of sedimentary rocks.
15. What are shelf and deep-sea sediments?
16. Define rudaceous, arenaceous, and argillaceous rocks with examples.