

The Assam Royal Global University, Guwahati

Royal School of Environmental and Earth Sciences

B.Sc. Geology 2nd Semester

Semester End Examination, July 2022

Course Title: Sedimentary Petrology

Course Code: GEOL162C203

Time: 3 Hours

Maximum Marks: 70

Note: Attempt all questions as per instructions given.

The figures in the right-hand margin indicate marks.

Section – A

1. Attempt **all questions**. (Maximum word limit 50) **2 x 8**
- a. Give the phi scale conversion of Udden-Wentworth Grade scale.
 - b. Define Mollisols and Oxisols.
 - c. Define cementation undergone by sediment grains.
 - d. State the range of Reynolds number for defining Laminar and Turbulent fluid flows.
 - e. What are primary sedimentary structures?
 - f. Mention some chemically formed sedimentary rocks.
 - g. Define rudaceous rocks.
 - h. Under what sedimentary environment can limestones form?

Section – B

2. Attempt **any two** of the following: **6 x 2**
- a. Illustrate the Udden-Wentworth grade scale in detail stating the size ranges for different sediment classes.
 - b. Discuss elaborately about the relevant statistical parameters in textural analysis.
 - c. Describe how heavy minerals are significant in provenance studies.
3. Attempt **any two** of the following: **7 x 2**
- a. Explain the processes of sediment transport in running water with the help of representative diagrams.
 - b. Write an account of the various stages of diagenesis.
 - c. Critically discuss about the formation of different types of grain boundaries.
4. Attempt **any two** of the following: **7 x 2**
- a. Give an elaborate classification of various types of sedimentary facies.
 - b. Describe the role of some sedimentary structures in geology.
 - c. Illustrate and explain the sedimentary facies model representing transgression and regression events of sea.
5. Attempt **any one** of the following: **14 x 1**
- a. Discuss Dott's standard classification of sandstones in detail.
 - b. Write a detailed note on siliciclastic rocks.