

Ex/SC/GEOL/PG/CORE/TH/07/2022

M. Sc. (APPLIED GEOLOGY) EXAMINATION, 2022

(1st Year, 2nd Semester)

SEDIMENTOLOGY

PAPER – CORE/TH/07

Time : Two hours

Full Marks : 40

(Use a separate Answer script for each Part)

PART – I

Answer *any four* questions:

4×5=20

1. What are the major differences between a Rimmed platform and a Ramp? 5
2. What is a parasequence? Why is it generally coarsening upward trend? 2+3=5
3. Mark the following events and surfaces on a hypothetical sea level curve:
 - a) Onset of regression, End of transgression, End of regression, End of forced regression (Events)
 - b) Basal surface of force regression, Maximum regressive surface, Maximum flooding surface, Basal surface of forced regression, Correlative conformity (Surfaces) $2\frac{1}{2}+2\frac{1}{2}=5$
4.
 - a) What is a ‘beach rock’? How does it form?
 - b) How do you account for the higher frequency in occurrence of dolomite within Proterozoic carbonates in comparison to their Phanerozoic counterparts? 3+2=5

3+2=5

[Turn over

[2]

5. a) Why were passive margins initially preferred for sequence stratigraphic analysis?
b) Why is correlative conformity important to define a “Sequence”?
c) How do you recognize a Maximum Flooding Surface (mfs)? 1+2+2=5
6. What are the different modes of mixing of carbonate and siliciclastic sediments in nature? 5

PART – II

Answer **Q. 1** and *any three* questions from the rest.

1. What are the most common fluvial styles encountered in the rock record? How do they differ in sedimentary succession? 1+7=8

Or

Why do aeolian deposits document wider variations in dune morphology and size than their subaqueous counterparts? Write a detailed account of the various types of dunes encountered within aeolian environment.

2+6=8

2. Shallow marine sedimentation record is highly biased towards storm episodes – discuss. 4
3. Write a short note on the depositional mechanism unique to alluvial fan environment. 4

[3]

4. Describe the depositional processes, unique to lacustrine systems. How do they influence sedimentation? 4
5. How tide-dominated linear coastlines differ from wave-dominated ones with respect to the primary structures and sedimentary successions? 4
6. Differentiate between deltaic and estuarine environment. 4
7. Write an account on deep marine sediments and processes of their deposition. 4