

Ex/SC/GEOL/UG/CORE/TH/05/2024

BACHELOR OF GEOLOGICAL SCIENCE EXAMINATION, 2024

(2nd Year, 1st Semester)

SEDIMENTOLOGY

PAPER : Core/TH/5

Time : Two Hours

Full Marks : 40

Use a separate Answer script for each part.

PART—I (20 Marks)

Answer question no. 1 and *any three* from the remaining.

1. What are the factors controlling the formation of bedforms?
Describe with suitable sketches, different erosional primary
structures encountered in nature. 2+6=8

(OR)

Write a detailed note on shape of the sedimentary grains and
their geological significance. Why are 'b' axis imbrications
of pebbles more common in fluvial conglomerate? 6+2=8

2. Why are primary structures not usually environment-specific?
Describe one environment-specific primary structure
highlighting its significance in specific environment. 1+3=4

GEOL-253

[Turn Over]

(2)

3. How do you define multidirectional flow? Describe two bedforms produced by multidirectional flows. 1+3=4
4. How do you define climbing of ripples? Discuss different kinds of ripple climbs and their geological significance. 1+3=4
5. Define surface texture of grains. Write a short note on surface texture. 1+3=4
6. Justify the following statements : 4
- (i) Well-rounded grains are usually well sorted.
- (ii) Reverse grading is more common within eolian rather than aqueous regime.
7. Differentiate between 4
- (i) load cast and flute cast
- (ii) swaley cross-strata and trough cross-strata

PART—II (20 Marks)

Answer question no. 1 and *any two* from the rest.

1. What are the differences between (2×2=4)
- (a) meandering river and braided river
- (b) laminar flow and turbulent flow

(3)

2. (a) What are major chemical weathering processes and their products?
- (b) What do you mean by 'flow regime' and 'bedforms'?
- (c) Why does shallow marine environment favour carbonate deposition? 3+3+2=8
3. (a) What is the difference between matrix and cement?
- (b) How do you define greywacke?
- (c) What is litharenite? What are the geological significances of quartz arenite? 2+2+2+2=8
4. (a) What is diagenesis? Give an account on diagenesis of siliciclastic sedimentary rocks.
- (b) What do you mean by 'Allochemical' and 'Orthochemical' sedimentary rocks? 2+3+3=8

