3 (Sem–3/CBCS) GLG HC 2

2023

GEOLOGY

(Honours Core)

Paper : GLG–HC–3026

(Sedimentary Petrology)

Full Marks : 60

Time : Three hours

The figures in the margin indicate full marks for the questions.

1. Choose the correct answer : 1×7=7

(a) The size of the silt ranges between —

(i) 2 – 4 *mm*

(ii) $1/16 - 2\ mm$

(iii) $1/256 - 1/16\ mm$

(iv) $< \frac{1}{256}\ mm$

(b) In orthoquartzite the percentage of quartz is

(i) < 50%

(ii) > 75%

(iii) > 95%

(iv) < 70%

(c) In which of the following sedimentary environments would gravel most likely to be deposited ?

(i) Alluvial

(ii) Delta

(iii) Deep sea

(iv) Continental

(d) Cement in a detrital sedimentary rock is

(i) pre-depositional

(ii) post-depositional

(iii) syn-depositional

(iv) All of the above

(e) If a grain size distribution has excess coarse material, the sediment is said to possess

(i) positive skewness

(ii) negative skewness

(iii) zero skewness

(iv) None of the above

(f) An authigenic growth forms during

(i) Sedimentation

(ii) Diagenesis

(iii) Palingenesis

(iv) Anatexis

(g) Which of the following sedimentary structure is erosional in nature ?

(i) Cross-stratification

(ii) Flute cast

(iii) Graded bedding

(iv) Ripple marks

2. Write brief notes on following : 2×4=8

(a) Intraformational conglomerate

(b) Heningbone cross stratification

(c) Roundness

(d) Exfoliation

3. Answer the following questions : ***(any three)*** 5×3=15

(a) What is Reynold and Froude number ? How to distinguish different types of flow based on Reynold and Froude number ? 2+3=5

(b) Write a note on Penecontemporaneous deformation structure.

(c) Discuss folk classification of limestone.

(d) Define pressure solution. Explain how grain contact of sediments changes in diagenesis with neat sketches. 1+4=5

(e) Discuss the characteristic features of sediments in a fluvial environment.

4. Answer the following : ***(any three)*** 10×3=30

(a) Define clast, matrix and cement. Write an elaborate note on classification of sandstone. 3+7=10

(b) Write the definition of diagenesis. Write a detailed note about different stages of diagenesis. 2+8=10

(c) Define sedimentary texture. Elaborate different parameters which are used to study sedimentary texture. 2+8=10

(d) Write a detailed note on different primary sedimentary structure.

(e) Define Paleocurrent. How we can interpret paleocurrent by using different sedimentary tools ?

(f) Explain different statistical size parameters used to study sedimentary texture. Add a note about its significance.
