0712E739

Candidate's Seat No :_____

Integ M.Sc. Sem.-3 (App. Geo.) Examination

AGL 203

Sendimentary Petrology

December 2021

Time : 2-00 Hours] **[Max. Marks : 50**

Instructions: All questions in Section-1 carry equal marks
Attempt any Three questions in Section-1 and draw appropriate sketches wherever required
Questions in Section 2 is COMPULSORY

Section-1 Descriptive type questions

Q-1 A. Arrange the following minerals according to their increasing resistance to weathering and give reason: a. pyroxene b. biotite c. Amphibole d. Muscovite e. Quartz f. Olivin

Q-1 B. Write short notes on Folks classification of limestone

Q-2 A. Write short notes onPettijohn classification of sandstone.

Q-2 B. Difference between clast's roundness and sphericity.

Q-3 A. What classification scheme or method do sedimentologist use to describe grain size? Give a brief description of at least two common methods of describing grain size and relationship.

Q-3 B. Describe wave ripples and current ripples with diagrams.

Q-4 A Explain Hjulstrom diagram with sketch and notes.

Q-4 B Draw distinction between Planer cross-laminations and trough cross-laminations. (Draw appropriate skeches)

Q-5 A. Describe Dunham's classification of limestone. (Draw appropriate skech)

Q-5 B. DescribeZingg's classification of shape of sediments.

Q-6 A. Explain grain fabric, grain's roundness and sphericity, and grain contacts as a degree of compaction.

Q-6 B. Explain Laminar and turbulent flow.

Q-7 A. Explain in detailed: Normal and reverse bedding.

P.T.O.

Q-7 B. What is the Wilson cycle? Briefly describe the various stages of Wilson cycle with the help of diagram.

Q-8 A. Name and briefly explain the various chemical processes that occurs during diagenesis of sediments

Q-8 B. Write short notes on post depositional structures formed due to **fluidisation** and **loading.**

Section-2 Multiples Choice Questions

1. What is the approximate temperature of a sediment that is buried to a depth of 3 km?

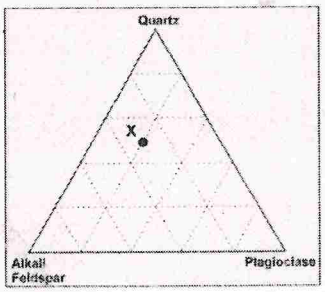
A) 0 degrees C
B) 100 degrees C
C) 300 degrees C
D) 1000 degrees C

2. Match the sedimentary rocks given in Group-I with their characteristics in Group-II

Group – I	Group – II
(i) Sandstone	(P) Chemical sediment
(ii) Arkose	(Q) Grain size 1/16 – 2 mm
(iii) Limestone	(R) Feldspar-rich
(iv) Shale	(S) Grain size < 1/16 mm

A) (i) – R, (ii) – P, (iii) – S, (iv) – Q
B) (i) – Q, (ii) – R, (iii) – P, (iv) – S
C) (i) – Q, (ii) – R, (iii) – S, (iv) – P
D) (i) – P, (ii) – S, (iii) – R, (iv) – Q

3. In the given diagram, the percentage of Plagioclase in a rock of composition 'X' is_____.



A) 45 %
B) 20 %
C) 80 %
D) 35 %

4. the particles movement in a series of jumps,periodically leaving the bed surface, and carried short distances within the body of the fluid before returning to the bed again, is called :

A) Suspension
B) Rolling

C) Jumping
D) Saltation

5. Identification of Calcite in sedimentary rock can be done by using
A) the rock will glow in the dark
B) the rock will break to form smooth surfaces
C) the rock will taste salty
D) hydrochloric acid will cause the calcite to fizz

6. Which of the following sedimentary rock types is most likely to form by the mechanical weathering of a granite?
A) Quartz wacke
B) litharenite
C) arkose
D) shale

7. All of the following statements about cross-bedding are true EXCEPT:
A) cross-beds are formed when a sedimentary layer is deposited at an angle to the underlying bed.
B) cross-bedding is usually formed by deposition of sediments from wind or water.
C) changes in direction of wind or water currents are recognizable within cross-beds.
D) cross-beds form when particles drop from still water

8. The tendency for variations in current velocity to segregate sediments on the basis of particle size is called _____.
A) Lilthification
B) Compaction
C) Diagenesis
D) sorting