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3 SEM TDC GEOH (CBCS) C 7

2023

(Nov/Dec)

GEOLOGY

(Core)

Paper : C-7

(Metamorphic Petrology)

Full Marks : 53

Pass Marks : 21

Time : 3 hours

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

UNIT—1

(Marks : 15)

1. Choose the correct option : 1×5=5

(a) While taking a 100 mile traverse, the lithology observed includes shale followed by slate and then phyllite. The traverse direction indicates

- (i) increasing metamorphic grade
- (ii) decreasing metamorphic grade
- (iii) increasing degree of contact metamorphism
- (iv) None of the above

- (b) _____ pressure results in the parallel alignment of metamorphic mineral.
- (i) Contact
 - (ii) Directed
 - (iii) Confining
 - (iv) Chemical
- (c) _____ leads to changes in the bulk composition of a rock.
- (i) Increase in pressure
 - (ii) Increase in temperature
 - (iii) Reaction with hydrothermal fluid
 - (iv) None of the above
- (d) Marble is formed due to metamorphism of
- (i) granite
 - (ii) limestone
 - (iii) sandstone
 - (iv) shale
- (e) _____ mineral is responsible for strong foliation in a schist.
- (i) Quartz
 - (ii) Calcite
 - (iii) Mica
 - (iv) Foliate

(3)

2. Write short notes on any *two* of the following : $5 \times 2 = 10$
- (a) Controlling factors of metamorphism
 - (b) Fault zone metamorphism
 - (c) Chemographic projections

UNIT—2

(Marks : 10)

3. Discuss any *two* of the following : $5 \times 2 = 10$
- (a) Equilibrium in metamorphism
 - (b) Univariant and bivariant reactions
 - (c) Mineralogical phase rule of closed and open system

UNIT—3

(Marks : 10)

4. Write short notes on any *two* of the following : $5 \times 2 = 10$
- (a) Foliated and non-foliated metamorphic textures
 - (b) S-C fabric in metamorphic rocks
 - (c) Prograde and retrograde metamorphisms

(4)

UNIT—4

(Marks : 8)

5. Briefly discuss any *two* of the following :

4×2=8

- (a) Metasomatism
- (b) Origin of migmatites
- (c) Types of migmatite

UNIT—5

(Marks : 10)

6. Write short notes on any *five* of the following :

2×5=10

- (a) Charnockite
- (b) Phyllite
- (c) Marble
- (d) Blueschist
- (e) Gneiss
- (f) Khasi greenstone
- (g) Quartzite
