

2023

Time - 3 hours

Full Marks - 60

Answer all groups as per instructions.

Figures in the right hand margin indicate marks.

GROUP - A

1. Fill in the blanks. (all) [1 × 8]
- (a) A monomineralic igneous rock having labradorite is called _____.
 - (b) If most of the grains in an equigranular texture are Euhedral shape, the texture is called _____.
 - (c) Ophitic texture is characteristic of _____ rock.
 - (d) The volcanic equivalent of Gabbro is _____.
 - (e) Igneous rocks containing less than 45% of silica are called _____ rock.
 - (f) Essential mineral of Granite are _____ and _____.
 - (g) The point at which simultaneous crystallisation of both the constituents in a binary system take place, is called _____ point.

[2]

- (h) Saucer-shaped concordant igneous body bent downward like a basin is called _____.

GROUP – B

2. Write notes on any eight of the following within two to three sentences each. [1½ × 8

- (a) Magma and Lava
- (b) Graphic texture
- (c) Laccolith
- (d) Heat flow
- (e) Liquid immiscibility
- (f) Magmatism in Island arcs
- (g) Plutonic rocks
- (h) Kimberlite
- (i) Pegmatite
- (j) Basic rock

GROUP – C

3. Write notes on any eight of the following within 75 words each. [2 × 8

- (a) Porphyritic texture
- (b) Lopolith and Phacolith

[3]

- (c) Discontinuous reaction series
- (d) Assimilation process
- (e) Magmatism in Oceanic domain
- (f) Geothermal gradient through time
- (g) Carbonatite
- (h) Dunite
- (i) Batholith
- (j) Basalt

GROUP – D

Answer *all* questions within 500 words each.

4. Briefly describe the crystallisation behaviour of binary magma showing Eutectic relation. [6

OR

Briefly describe the crystallisation behaviour of unicomponent magma.

5. Briefly describe the forms of igneous rocks. [6

OR

Briefly describe the mega and micro-structures of igneous rocks.

[4]

6. Briefly describe the Bowen's reaction series. Add a note on its significance. [6]

OR

Classify igneous rocks.

7. Write petrographic notes on Anorthosite and Peridotite. [3 × 2]

OR

Write petrographic notes on Granite and Dolerite. [3 × 2]