

**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) Name the rock which is a hypersthene bearing granite \_\_\_\_\_.
  - (b) The metamorphic structure exhibited by Schist is \_\_\_\_\_.
  - (c) The thermal metamorphism of limestone produces \_\_\_\_\_.
  - (d) ESKOLA recognised \_\_\_\_\_ metamorphic facies.
  - (e) In ACF diagram, F stands for \_\_\_\_\_.
  - (f) Eclogites are dominantly composed of \_\_\_\_\_ and Pyrope.
  - (g) A Gneiss formed as a result of metamorphism of sedimentary rock is called \_\_\_\_\_.
  - (h) The mineral assemblages of chlorite, epidote, albite, muscovite and quartz indicative of \_\_\_\_\_ facies.



[ 2 ]

GROUP – B

2. Write notes on any eight of the following within two to three sentences each. [1½ × 8]
- (a) Gneiss
  - (b) Phyllite
  - (c) Plutonic metamorphism
  - (d) Granulitic metamorphism
  - (e) Migmatite
  - (f) Contact aureole
  - (g) Porphyroblastic texture
  - (h) Granulose structure
  - (i) Grade of metamorphism
  - (j) Scarn

GROUP – C

3. Write notes on any eight of the following within 75 words each. [2 × 8]
- (a) Agents of metamorphism
  - (b) Cataclastic metamorphism
  - (c) Barrovian zone

[ 3 ]

- (d) Green-Schist facies
- (e) Gneissose structure
- (f) Retrograde and prograde metamorphism
- (g) Mineralogical phase rule
- (h) Eclogite
- (i) Schist
- (j) Metasomatism

GROUP – D

Answer **all** questions within 500 words each.

4. Briefly describe the various types of metamorphism. [6]

OR

Write a note on ACF diagram.

5. Give a detail account on metamorphic facies. [6]

OR

Write a note on metamorphic texture and structures.

6. Give a petrographic note on migmatite and its origin. [6]

OR

P.T.O.



[ 4 ]

Bring out the relationship between metamorphism and deformation.

7. Write petrographic notes on Khondalite and Charnokite. [3 + 3]

OR

- Write petrographic notes on Marble and Quartzite. [3 + 3]