Roll No. : .....

Total No. of Questions : **10**] [Total No. of Printed Pages : **3**

BFMS–435

M.Sc. (Final) Examination, 2023

GEOLOGY

Paper - V

(Igneous and Metamorphic Petrology)

*Time : **3** Hours*] [*Maximum Marks : **75***

Section–A **(Marks : 2 × 10 = 20)**

Note :– Answer all *ten* questions (Answer limit **50** words). Each question carries **2** marks.

Section–B **(Marks : 5 × 5 = 25)**

Note :– Answer all *five* questions. Each question has internal choice (Answer limit **200** words). Each question carries **5** marks.

Section–C **(Marks : 10 × 3 = 30)**

Note :– Answer any *three* questions out of four (Answer limit **500** words). Each question carries **10** marks.

Section–A

1. Answer the following questions :

   (i) Define "Magma".

   (ii) Define spinifex texture.

(iii) Describe porphyritic texture.

(iv) Give difference between Lapolith and Laccolith.

(v) Give the name of three ultrabasic rocks.

(vi) Give the composition of Basic Rocks.

(vii) What is Hornfelsic Structure ?

(viii) Describe Porphyroblastic Texture.

(ix) Give examples of Eclogites Facies.

(x) Describe Granulite Facies.

Section–B

2. Discuss the petrography and mode of occurrences of Granitic Rock.

Or

Write short notes on the following :

(i) Magma composition

(ii) Mineral zone

(iii) Reaction principle

3. Discuss crystallization of Albite-Anorthite system and also comment on its petrogenetic significance.

Or

Explain crystallization process in Silicate Melts in light of experimental studies for Diopside-Forsterite-Silica.

4. Write detailed notes on the following :

(i) Ophiolite

(ii) Anorthosite and Pegmatite

Or

Discuss on mode of occurrence, classification and petrogenesis of :

(i) Granite and Granodiorite

(ii) Olivine

5. Discuss about ACF and AFM diagrams and their significance.

Or

Describe concept of depth zone and zone of progressive metamorphism.

6. Write detailed notes on the following :

(i) Origin of Charnockites

(ii) Metasomatism

Or

Discuss on contact and regional metamorphism.

Section–C

7. Give the IUGS classification of Igneous Rock.

8. Discuss the role of major, trace and REE in petrogenesis.

9. Describe forms and textures of Igneous Rocks.

10. Describe types and texture of metamorphic rocks.