

Roll No : .....

Total No. of Questions : 10 ]

[ Total No. of Printed Pages : 3

# SP-690

M.Sc. (Final) Examination, 2021

GEOLOGY

Paper - V

(Igneous and Metamorphic Petrology)

Time : 1½ Hours ]

[ Maximum Marks : 75

## Section-A

(Marks : 2 × 10 = 20)

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

(खण्ड-अ)

(अंक : 2 × 10 = 20)

**नोट :-** सभी दस प्रश्नों के उत्तर दीजिए (उत्तर-सीमा 50 शब्द)। प्रत्येक प्रश्न 2 अंक का है।

## 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.

(खण्ड-ब)

(अंक : 5 × 5 = 25)

**नोट :-** सभी पाँच प्रश्नों के उत्तर दीजिए। प्रत्येक प्रश्न में विकल्प का चयन कीजिए (उत्तर-सीमा 200 शब्द)। प्रत्येक प्रश्न 5 अंक का है।

## Section-C

(Marks : 10 × 3 = 30)

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

(खण्ड-स)

(अंक : 10 × 3 = 30)

**नोट :-** चार में से किन्हीं तीन प्रश्नों के उत्तर दीजिए (उत्तर-सीमा 500 शब्द)। प्रत्येक प्रश्न 10 अंक का है।

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SP-690 P.T.O.

### Section–A

1. (i) Describe Reaction Rim.
- (ii) Describe Porphyritic Texture with example.
- (iii) Describe Graphic Texture with example.
- (iv) Describe Phase Rule.
- (v) Describe Augen-Gneiss.
- (vi) Describe Anatexis.
- (vii) Describe Metasomatism.
- (viii) Describe Incongruent Melting.
- (ix) Describe Metamorphic Zones.
- (x) Describe Retrograde Metamorphism.

### Section–B

2. Describe various processes responsible for differentiation of Magma.

*Or*

Describe Magma generation and its relation with plate margins.

3. Describe the Alkaline rocks of Rajasthan. Comment on their origin.

*Or*

Describe texture, mineralogy and petrogenesis of Lamprophyres.

4. Discuss various intergrowth textures with suitable diagrams.

*Or*

Write petrogenetic notes on Komatiites.

5. Discuss the working of AAS (Atomic Absorption Spectrophotometer).

*Or*

Explain the structures of metamorphic rocks with suitable diagram.

6. What is ACF Diagram ? Discuss calculation for plotting ACF diagrams.

*Or*

Describe Metamorphic facies and its classification.

### **Section–C**

7. Discuss the crystallization behaviour of Diopside-Anorthite-Albite melt with the help of suitable diagram.
8. Discuss the textural, chemical and mineralogical classification of Igneous Rocks.
9. Discuss the mineralogy, textures and genesis of charnockite rocks with special reference to Indian occurrences.
10. Describe the field occurrence, mineralogical, textural account and origin of granulitic rocks.