

This question paper contains 3 printed pages]

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S. No. of Question Paper : 8582

Unique Paper Code : 219303

C

Name of the Paper : GEHT-302 : Igneous Petrology

Name of the Course : B.Sc. (Hons.) Geology Part II

Semester : III

Duration : 3 Hours

Maximum Marks : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Answer any five questions.

All questions carry equal marks.

Question No. 1 is compulsory.

1. Answer the following :

4+1+2+4+4

(i) Match the plutonic rocks with their volcanic equivalents :

Group I

Group II

(P) Granite

(a) Dacite

(Q) Granodiorite

(b) Trachyte

(R) Diorite

(c) Rhyolite

(S) Syenite

(d) Andesite

(ii) What is crystal mush ?

(iii) In a binary phase diagram the temperature at which two minerals crystallize simultaneously is called _____ point, the temperature below which only _____ are present.

P.T.O.

- (iv) Define the following :
- (a) Equilibrium condition
 - (b) Peritectic point
 - (c) Congruent melting
 - (d) Closed system
- (v) Describe exsolution in feldspars.
2. (a) Discuss the mechanism of crystal fractionation. 7.5
- (b) What is magma mixing ? What are its evidences ? 7.5
3. Write a concise account of magmatism at : 5×3=15
- (a) Constructive plate margin
 - (b) Destructive plate margin
 - (c) Intraplate setting.
4. Write notes on : 7.5×2=15
- (a) Granitic rocks
 - (b) Evolution of alkaline rock suites.
5. Describe the rock/sequence (any *three*) : 5×3=15
- (a) Dunite
 - (b) Komatiite
 - (c) Carbonatites
 - (d) Kimberlites
 - (e) Ophiolites.

6. Explain : 5×3=15
- (a) The diversity of igneous rocks in nature.
 - (b) The factors responsible for magma generation.
 - (c) How would you identify crustal contamination in basaltic magma ?
7. Answer the following : 7.5×2=15
- (a) What are the processes that cause diversity in magma ?
 - (b) How would you classify igneous rocks on the basis of mineralogy ?
8. Importance of textures and structures in the interpretation of formation of igneous rocks. 15