

This question paper contains 3 printed pages.]

Your Roll No.

1321

A

B.Sc. (Hons.)/II

GEOLOGY—Paper VI

(Igneous and Metamorphic Petrology)

(Admissions of 2004 and onwards)

Time : 3 Hours

Maximum Marks : 45

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

*Answer five questions in all, selecting
at least two questions from each section.*

All questions carry equal marks.

Use a separate answer sheet for each section.

SECTION—A

(Igneous Petrology)

1. Discuss the role of mantle in the generation of basic magma. Comment upon open and closed system of differentiation.
2. What do you understand by NORMATIVE and MODAL composition of a rock. Discuss IUGS classification of mafic and felsic rocks.

[P.T.O.]

3. Write short notes on any *two* of the following :
- (a) Incongruent melting
 - (b) Magma mixing
 - (c) Binary eutectic.
4. Write short notes on any *two* of the following :
- (a) Alkaline rocks
 - (b) Anorthosites
 - (c) Ultramafic rocks.

SECTION-B

(Metamorphic Petrology)

5. What do you understand by zones, facies and grades of metamorphism. Discuss with the help of ACF and AKF diagrams about the mineralogical assemblages of the green schist-facies of rocks.
6. Discuss any *two* of the reactions :
- (a) Calcite + quartz \rightleftharpoons Wollastonite + CO₂
 - (b) Chlorite + muscovite + quartz \rightleftharpoons Garnet + H₂O
 - (c) Quartz \rightleftharpoons Coesite

7. Write short notes on any *two* of the following :
- (a) Charnockite
 - (b) Anatexis
 - (c) Skarn
8. Write short notes on any *two* of the following :
- (a) Calc-schist
 - (b) Blue-schist facies
 - (c) Ocean floor metamorphism