

5/H-26 (v) (Syllabus-2015)

2019

(October)

GEOLOGY

(Honours)

(GELH-501)

**(Igneous and Sedimentary and
Metamorphic Petrology)**

Marks : 56

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

**Answer four questions, selecting one
from each Unit**

(GROUP—A : IGNEOUS PETROLOGY)

UNIT—I

(Introduction)

1. (a) Discuss the process of magma formation. 8
- (b) Describe the role of volatiles in magmatic crystallization. 6

2. Define phase rule. Describe the crystallization of diopside-albite-anorthite system.

2+12=14

UNIT—II

(Mineralogy and Petrogenesis)

3. (a) Discuss the origin of porphyritic texture and perthites. $3\frac{1}{2}+3\frac{1}{2}=7$
- (b) Give the mineralogical and textural features of any two of the following :
- (i) Basalt $3\frac{1}{2}\times 2=7$
- (ii) Kimberlite
- (iii) Peridotite

4. Discuss the petrogenesis of anorthosite. Add a note on its distribution in India. $12+2=14$

(GROUP—B : SEDIMENTARY AND METAMORPHIC PETROLOGY)

UNIT—III

(Sedimentary Petrology)

5. (a) Discuss the different types of open-channel flow.

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(Continued)

- (b) What is an 'environment of deposition'? How are environment of deposition classified? $2+5=7$

6. Write short notes on any four of the following : $3\frac{1}{2}\times 4=14$

- (a) Sedimentary facies
- (b) Standard deviation
- (c) Feldspar as provenance indicator
- (d) Heavy minerals
- (e) Significance of evaporite deposits

UNIT—IV

(Metamorphic Petrology)

7. (a) Distinguish between 'recrystallization' and 'neocrystallization'. 2
- (b) Describe the characteristics and mineral assemblage of the Greenschist facies. 6
- (c) Give an account on the contact metamorphism of impure limestone. 6

(Turn Over)

(4)

8. Write short notes on any *four* of the following : 3½×4=14

(a) Retrograde metamorphism

(b) Calc-silicate rocks

(c) Metamorphic zones

(d) Isograd

(e) Eclogite
