

2/EH-26 (ii) (Syllabus-2015)

2 0 1 8

( April )

GEOLOGY

( Elective/Honours )

( Petrology )

( GELH-201 )

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

1. (a) What is magma? How does it differ from lava? What happens to the ions present in the magma at high temperature?

2+1+2=5

- (b) Discuss briefly different factors responsible for magma generation.

9

( Turn Over )

( 2 )

2. (a) Give the classification of igneous rocks on the basis of their mode of occurrence.

3

- (b) Classify the following structures as concordant or discordant bodies :

- (i) Dykes
- (ii) Sills
- (iii) Cone sheets
- (iv) Laccoliths
- (v) Lopoliths
- (vi) Phacoliths

Also write on ropey and blocky lava with neat sketches.

$$3+(2 \times 2)=7$$

- (c) Write a note on 'zoning in plagioclase' with reference to continuous branch of Bowen's reaction series.

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#### UNIT—II

3. (a) Define texture. How are microstructures formed? Explain different types of texture on the basis of mutual relations of crystals with neat sketches.

$$1+1+8=10$$

- (b) What is corona structure and spherulitic structure?

$$2+2=4$$

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( Continued )

( 3 )

4. Write petrographic notes on any four of the following :

$$3\frac{1}{2} \times 4 = 14$$

- (a) Pegmatite
- (b) Syenite
- (c) Dolerite
- (d) Peridotite
- (e) Rhyolite

#### GROUP—B

#### ( Sedimentary and Metamorphic Petrology )

#### UNIT—III

5. (a) Define weathering. Write on different types of weathering.

$$1+2=3$$

- (b) Name different processes categorised under decomposition and discuss any three of them.

$$2+9=11$$

6. Write notes on any four of the following :

$$3\frac{1}{2} \times 4 = 14$$

- (a) Mudstone
- (b) Roundness
- (c) Concretions and geodes
- (d) Greywacke
- (e) Allochemical components of limestone

( Turn Over )

8D/1710

UNIT—IV

7. (a) Define metamorphism. Explain different factors of metamorphism. 1+8=9
- (b) Write on metamorphic zones with the help of Barrovian critical minerals. 5
8. Write short notes on any *four* of the following :  $3\frac{1}{2} \times 4 = 14$
- (a) Cataclastic and lepidoblastic texture
- (b) Granulose structure
- (c) Slate
- (d) Quartzite
- (e) Charnockite

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