

B.Sc. (Part—I) Semester—II Examination**GEOLOGY (New)****(Igneous, Sedimentary and Metamorphic Petrology)**

Time : Three Hours]

[Maximum Marks : 80

Note :— (1) **All** the questions are compulsory.

(2) Draw well labelled diagrams wherever necessary.

1. (A) Fill in the blanks :

- (i) Rocks crystallized at great depth are called _____ Igneous rocks.
- (ii) Thermal metamorphism is due to a _____ factor.
- (iii) _____ is deposits built at mouth of streams usually triangular in shape.
- (iv) The felsic minerals in igneous rock are _____ color and _____ in density.

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(B) Choose the correct alternatives :

(i) The silica content is less than 45 % then rock is known as :

- (a) Basic rock
- (b) Ultrabasic rock
- (c) Intermediate rock
- (d) Acidic rock

(ii) Gneiss is :

- (a) Igneous rock
- (b) Sedimentary rock
- (c) Metamorphic rock
- (d) Ore

(iii) Why basalt is fine grained than gabbro ?

- (a) Basalt has mafic composition
- (b) Gabbro has mafic composition
- (c) Basalt formed from quick cooling of magma
- (d) Gabbro formed from quick cooling of magma

(iv) The particles or grain size of gravel :

- (a) 0.1 mm to 2 mm
- (b) More than 2 mm
- (c) Less than 1 mm
- (d) 0.01 to 0.1 mm

2

(C) Answer the following in **one** or **two** sentences :

- (i) What is metamorphic rock ?
- (ii) What is rudaceous rock ?
- (iii) What is delta formation ?
- (iv) What is phase rule ?

4

2. What is texture ? Describe in detail the various textures in igneous rock.

12

OR

What is igneous rock ? Describe in detail the structures in igneous rock.

12

3. Explain the following :

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- | | |
|---|---|
| (a) Mineralogical character of basalt. | 4 |
| (b) Assimilation. | 4 |
| (c) Tabular classification of igneous rock. | 4 |

OR

- | | |
|--|---|
| (p) Discontinuous reaction series. | 4 |
| (q) Characteristic of felsic and mafic minerals. | 4 |
| (r) Fractional crystallization. | 4 |

4. Describe in detail ternary system of diopside, albite and anorthite.	12
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OR

Describe in detail one component system of augite and quartz.	12
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5. Explain the following :

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|--------------------------------|---|
| (a) Flood plain deposits. | 4 |
| (b) Stratification. | 4 |
| (c) Clastic sedimentary rocks. | 4 |

OR

- | | |
|------------------------------------|---|
| (p) Graded Bedding. | 4 |
| (q) Types of dunes. | 4 |
| (r) Non-clastic sedimentary rocks. | 4 |

6. Explain the following :

- | | |
|-----------------------------------|---|
| (a) Dynamic metamorphism | 4 |
| (b) Palimpsest or relict texture. | 4 |
| (c) Maculose structure. | 4 |

OR

- | | |
|---|---|
| (p) Thermal metamorphism. | 4 |
| (q) Agents of metamorphism. | 4 |
| (r) Foliated and non-foliated metamorphic rock. | 4 |

7. Explain the following :

- | | |
|---|---|
| (a) Conglomerate. | 4 |
| (b) Autometamorphism. | 4 |
| (c) Organic deposits of sedimentary rock. | 4 |

OR

- | | |
|--------------------------------------|---|
| (p) Stress and anti-stress minerals. | 4 |
| (q) Limestone. | 4 |
| (r) Hornbled schist. | 4 |