

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

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(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 ?

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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.

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3. Explain the following :
- (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
- OR**
- Describe in detail one component system of augite and quartz. 12
5. Explain the following :
- (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