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Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, APRIL 2022

Fifth Semester

Core Course—METAMORPHIC PETROLOGY AND GEOCHEMISTRY

(Common for B.Sc. Geology and B.Sc. Geology and Water Management)

[2013 to 2016 Admissions]

Time : Three Hours

Maximum Marks : 80

Draw neat sketches wherever necessary.

Part A

Answer all questions.

Each question carries 1 mark.

Name the following :

1. A rock formed at zones of cataclastic metamorphism.
2. Mosaic texture is exhibited by this rock.
3. The diagnostic mineral or blueschist facies.
4. The most important chemical fluid which promotes metamorphism.
5. A metamorphic rock which exhibits fissility.
6. The atomic number of calcium.
7. A monomineralic metamorphic rock.
8. Name an atmophile element.
9. A pyroxene common in eclogites.
10. The type of bonding in the mineral diamond.

(10 × 1 = 10)

Part B (Short Answer Questions)

Answer any eight questions in not more than 100 words each.

Each question carries 2 marks.

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|--------------------------------------|----------------------------------|
| 11. Foliation. | 12. Metasomatism. |
| 13. Stress and anti-stress minerals. | 14. Khondolite. |
| 15. Phyllite. | 16. pH and Eh. |
| 17. Index mineral. | 18. Palimpsest texture. |
| 19. Anatexis. | 20. Granulite. |
| 21. Idioblastic texture. | 22. Metamorphic differentiation. |

(8 × 2 = 16)

Turn over

Part C (Short Essays)

Answer any six questions in not more than 300 words each.

Each question carries 4 marks.

23. Metamorphic textures.
24. Changes in chemical composition of rocks during metamorphism.
25. Pressure-Temperature limits of various types of metamorphism.
26. Isomorphism, Polymorphism and Psuedomorphism in minerals.
27. Lithophile elements.
28. Schistose and gneissic structure.
29. Chalcophile elements.
30. Types of bonding of atoms in minerals.
31. Metamorphism associated with convergent plate margins.

(6 × 4 = 24)

Part D (Essay Questions)

Answer any two questions in not more than 1000 words each.

Each question carries 15 marks.

32. Describe in detail the factors, agents and types of metamorphism on rocks. Add a note on their important products.
33. Describe in detail the concept of metamorphic facies and explain the aspects of important facies.
34. Give a detailed account of the probable average composition of Crust, Mantle and Core.
35. Give an account of the rock type, its distribution, composition, grade and age of metamorphic rocks of Kerala.

(2 × 15 = 30)