



QP CODE: 25004407



Reg No :

Name :

**B.Sc DEGREE (CBCS) SPECIAL REAPPEARANCE EXAMINATIONS, FEBRUARY
2025**

Fifth Semester

CORE COURSE - GL5CRT07 - METAMORPHIC PETROLOGY AND GEOCHEMISTRY

Common for B.Sc Geology Model I & B.Sc Geology and Water Management Model III

2022 Admission Only

E6BA31F3

Time: 3 Hours

Max. Marks : 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. Define metamorphism.
2. Define Katazone of the Grubenmann's depth zones.
3. What does mean by isoreaction grade?
4. Define metamorphic mineral paragenesis.
5. What are the index minerals of Buchan metamorphic zones?
6. What is geothermometry?
7. What are the typical metamorphic minerals formed by the metamorphism of carbonate rock?
8. What are the types of metamorphism associated with convergent plate margins?
9. What does mean by grade of metamorphism?
10. Who was first proposed the periodic table for chemical elements? and on what basis the elements were arranged?
11. What is isomorphism of minerals?
12. What is degree of freedom? Define invariant system.

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*





13. Explain anatexis and petrogenesis of migmatites.
14. Discuss prograde and retrograde metamorphism.
15. Discuss the textures that could form by recrystallisation during metamorphism.
16. Explain different types of cataclastic structures seen in sheared metamorphic rocks.
17. Discuss classification of metamorphic rocks based on the structures present in it.
18. Discuss the important metamorphic rocks of Kerala.
19. Explain exsolution with an example.
20. Discuss lithophile, chalcophile and siderophile elements grouped based on geochemical classification of elements.
21. Illustrate the average chemical composition of the core and mantle of the Earth.

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. Discuss metamorphism, and describe the pressure, temperature and depth limits of metamorphism.
23. Discuss different metamorphic facies with respect to various types of metamorphism and geotechnical settings.
24. Write an essay on various types and origin of foliations and lineations seen in the metamorphic rocks.
25. Illustrate different kinds of bonding between atoms with appropriate examples.

(2×10=20)

