

**2023**  
**B.A./B.Sc.**  
**Fourth Semester**  
CORE – 8  
**GEOLOGY**  
*Course Code: GLC 4.11*  
(Metamorphic Petrology)

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. Write notes on the following: 7×2=14
  - (a) Processes of metamorphism
  - (b) Role of temperature and active chemical fluids in metamorphism.
2. Write in detail about the differences between contact and regional metamorphism. 14

**UNIT-II**

3. What are chemographic projections? Explain the ACF phase diagram and its significance in metamorphic petrology. 2+8+4=14
4. Discuss the textures of metamorphic rocks with well-labelled diagrams. 14

**UNIT-III**

5. Elaborate the relationship between tectonics and metamorphic processes. 14
6. Write notes on the following: 7×2=14
  - (a) Deformation and metamorphism
  - (b) Prograde metamorphism

## UNIT-IV

7. What are migmatites? Describe the different types of migmatites basing on their structure. 4+10=14
8. Write notes on the following: 7×2=14
- (a) Anatexis
  - (b) Metasomatism

## UNIT-V

9. Write notes on the following: 7×2=14
- (a) Origin and composition of eclogites
  - (b) Marble
10. What are charnockites? Write in detail the composition, nature, textures, and origin of charnockites. 14
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