

2021
M.Sc.
First Semester
CORE – 03
GEOLOGY
Course Code: MGLC 1.31
(Igneous & Metamorphic Petrology)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

UNIT-I

1. Describe in detail the relationship between magmatism and the Earth's plate settings. Give proper illustration whenever necessary. 14
2. Explain the following: 7×2=14
 - (i) CIPW norm classification
 - (ii) IUGS classification for phaneritic ultramafic igneous rocks.

UNIT-II

3. Explain the following: 7×2=14
 - (i) Petrology of ophiolite complex
 - (ii) Carbonatites
4. What are felsic igneous rocks? Explain the petrology of granite and its evolution. 2+12=14

UNIT-III

5. What are isotopes? Explain how isotope chemistry help in the field of geological sciences. 2+12=4
6. Write explanatory notes: 7×2=14
 - (i) Rare earth elements
 - (ii) Application of trace elements in geology

UNIT-IV

7. Explain the various metamorphic zones along with a schematic map. 14

8. Write notes on: 7×2=14
- (i) Clockwise P-T-t path
 - (ii) Textures of thermal metamorphism

UNIT-V

9. Explain the concept of geothermometry in metamorphic petrology using garnet and biotite as examples. 14
10. Write the characteristic mineral assemblages for the following metamorphic facies. 7×2=14
- (i) Albite-Epidote-Hornfel facies
 - (ii) Eclogite facies
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