2023
B.A./B.Sc.
Third Semester
CORE – 5
GEOLOGY
Course Code: GLC 3.11
(Igneous Petrology)

Total Mark: 70 *Pass Mark: 28*
Time: 3 hours

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

UNIT–I

1. Define magma. Elaborate on the origin of magma from the mantle and crust. 2+12=14

2. Write notes on the following: 7×2=14
   (a) Emplacement of magma
   (b) Nature of magma

UNIT–II

3. Explain the different modes of occurrence of igneous rocks. 14

4. Discuss the various structural features that develops within igneous rock masses. 14

UNIT–III

5. Define phase diagram. Elaborate on the phase diagram for one component system calculating degree of freedom for each area, curves lines and triple point. 2+12=14

6. Write in detail the ternary system containing a solid solution series of Ab–An–SiO_2. 14

UNIT–IV

7. What are convergent plate margins? Write in detail about the nature of magmatism occurring along subduction zones. 2+12=14

8. Write notes on the following: 7×2=14
   (a) MORB
   (b) OIB

UNIT–V

9. What are ultramafic rocks? Discuss the petrology of komatiites. Give reasons why komatiites are considered as rare ultramafic rocks. 2+6+6=14

10. Write notes on the following: 7×2=14
    (a) Alkaline rocks
    (b) Petrology of gabbro

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