



28/5/24

**DOON UNIVERSITY, DEHRADUN**  
**End Semester Examination of B.Sc- II Semester**  
**Academic Year 2023-24**  
**Dr. Nityanand Himalayan Research and Study Centre**  
**Department of Geology**  
**GEC-151 Igneous Petrology**

**Time Allowed 2.00 Hours**

**Maximum Marks: 50**

**SECTION: A**

**Write a note on the following. Attempt any five questions. – (Marks 2 x 5=10)**

1. What is modal and normative mineralogy?
2. What are major, minor and trace elements?
3. Which rock types, IUGS classification does not cover?
4. Elaborate on Laccoliths and Lopoliths.
5. Name four ultra mafic rocks.
6. Lamprophyre Rock
7. Differentiate between Lava and Magma.

**SECTION: B**

**Attempt Four questions. Make appropriate diagrams when needed (Marks 4 x 5= 20)**

1. How does trace element analysis helps in understanding the magma differentiation process?
2. Binary silicate system Diopside - Anorthite series.
3. What are anorthosite? Explain its origin with appropriate figure.
4. Elaborate on Major element indices.
5. What are Ophiolites? Elaborate with figure.

**SECTION: C**

**Attempt Two question. Make appropriate diagrams when needed (Marks 2x 10= 20)**

1. Ternary system diopside, forsterite, and anorthite.
2. What are the igneous rocks associated with the Continental Lithosphere?
3. Elaborate on Igneous Rocks formed in different Convergent Margins with appropriate figures.

10/10/19