

M.Sc. (Geology) (NEP Pattern) Semester-I
NEP-52 / PSCGEOT02 - Paper-II - Igneous Petrology

P. Pages : 2

Time : Three Hours



GUG/W/23/15104

Max. Marks : 80

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- Notes : 1. All questions are compulsory and carry equal marks.
2. Draw neat sketches wherever necessary.

1. Discuss in detail the mantle metasomatism and mantle heterogenetic.

OR

Write short notes on:

- a) Chemical Characteristics of Igneous rocks in continental rift.
 - b) Island Arcs
 - c) Mafic dyke swarms.
 - d) Layered complexes.
2. Write in detail about equilibrium and fractional crystallization of magma.

OR

Write short notes on:

- a) Dynamic melting.
 - b) Influence of volatiles and role of oxygen fugacity in magmatic crystallizations.
 - c) Liquid immiscibility.
 - d) Partial melting.
3. Discuss Major, Trace and Rare Earth Element systematics in igneous rocks.

OR

Write short notes on:

- a) Saturation index.
- b) Common textures of volcanic igneous rocks.
- c) Alteration index.
- d) Silica and alumina saturation.

4. Discuss the IUGS classification of volcanic igneous rocks in detail.

OR

Write short note on:

- a) Kimberlites.
- b) Basalt.
- c) Charnockite
- d) Lamproite.

5. Write short notes on the following.

- a) Plume magmatism.
- b) Hot spots.
- c) AFC process.
- d) Mantle melting.
- e) Lever rule.
- f) Harker variation diagrams.
- g) Anorthosites.
- h) Carbonatite.
