

M.Sc.(Geology) (CBCS Pattern) Semester - II
PSCGEOT07 - Paper-III : Geochemistry and Instrumentation Techniques

P. Pages : 2

Time : Three Hours



GUG/S/23/11209

Max. Marks : 100

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

1. Describe in detail origin and abundance of elements in the solar system.

OR

Write short notes on:

- a) Chalcophile elements.
- b) Geochemical cycle.
- c) Hydrosphere.
- d) Properties of minor elements.

2. Describe in detail basic principles, decay scheme and radiometric dating methods of K-Ar and Sm-Nd.

OR

Write short notes on:

- a) Stable isotope geochemistry of sulphur.
- b) Petrogenetic implications of Rb-Sr.
- c) Geochemistry of Thorium in rocks.
- d) Radiogenic dating of whole rocks.

3. Describe in detail geochemical process involved in rock weathering and soil formation.

OR

Write short notes on:

- a) Element partitioning between minerals and melts.
- b) Gibbs free energy.
- c) Principles of ionic substitution in minerals.
- d) Concept of internal energy.

4. Describe in detail principle and geological application of flame photometry.

OR

Write short notes on:

- a) Instrumental neutron activation analysis.
- b) Optical emission spectrometry.
- c) Cathodoluminescence.
- d) Gas source mass spectrometry.

5. Write short notes:

- a) Atmophiles elements
- b) Transition elements.
- c) Isotopes of oxygen.
- d) Stable isotopes.
- e) Entropy.
- f) Henry's law.
- g) Polished section making.
- h) Staining.
