

**GEOLOGY**

Serial No.

1500218

Time : 1:30 Hours]

[Full Marks : 100

Instructions :

- The figures in the margin indicate full marks.
 - Answer **five** questions including Question No. 1 which is compulsory.
 - Candidates are required to give their answers in their own words as far as practicable.
 - All questions have been printed in English.
 - Parts of the same question must be answered together and must not be interposed between answers to other questions.
1. Write short answers for the following questions. Give the sketches wherever required. **[10×2=20]**
- a) Difference between pure shear and simple shear.
 - b) Draw a sketch of fourth order pinacoid.
 - c) Alteration of olivine.
 - d) What is banded gabbro?
 - e) Write a note on sphericity and roundness.
 - f) What is palingenesis?
 - g) Migrating oceanic volcanoes.
 - h) What is stratotype?
 - i) Radioactive waste.
 - j) Logging of boreholes.

2. Describe the dip isogon classification of fold. What are its advantages over the other methods of classification? [20]
3. Describe the chemical composition, mineral, structures, physical, optical properties and paragenesis of pyroxene group. [20]
4. Discuss diopside- albite- anorthite system in relation to fractionation of basaltic magma. [20]
5. How minerals help in understanding the provenance of sediments and their environment of deposition? [20]
6. Give an account of the mineralogical textural and chemical criteria for the existence of chemical equilibrium in metamorphic rocks. How can it be verified by the mineralogical phase rule? [15+5=20]
7. Give principle, method and procedure of plane table and theodolite in surveying. [10+10=20]
8. State the principle of gravity and magmatic prospecting methods. Mention the corrections to be made for such survey. Briefly state the applications of such survey for various mineral deposits. [10+10=20]

