



'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Major 1st Semester Examination, 2023

UGELMAJ11001-GEOLOGY

EARTH SYSTEM SCIENCE

Time Allotted: 2 Hours

Full Marks: 40

The figures in the margin indicate full marks.

GROUP-A

Answer any *five* from the following

1×5 = 5

1. How can you separate a mineral from a rock?
2. How can you separate a chondrite from an achondrite?
3. What is the basic difference between continental and oceanic crust in terms of their composition?
4. What sort of magmatism should you expect at mid oceanic ridge?
5. Name a mineral that can be scratched by nail.
6. What is the difference between silicate, oxide and carbonate?
7. Is plume tectonics different from plate tectonics?

GROUP-B

Answer any *three* from the following

5×3 = 15

8. What do you mean by cosmic nucleo-synthesis of elements?
9. How can you explain compositional changes from crust to mantle?
10. Can you classify silicates depending upon their atomic structure? Explain.
11. Define Bode's law, Oddo Harkins Rule and theory of isostasy.
12. What are abyssal plain, continental rise/slope?

GROUP-C

Answer any *two* from the following

10×2 = 20

13. Explain the process of plate tectonics with suitable schematic sketch and explain.
14. Why do scientist(s) try to find about chondrite and especially carbonaceous chondrites?
15. How can isotopes help us in radiometric dating and what is the main mathematical calculative equation that may help us in that? Explain with any systematic like Rb-Sr or Sm-Nd.
16. What are the comparative characterization of Continental Drift Theory and Plate Tectonics?

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