



'সমানো মন্ত্র: সমিতি: সমানী'

**UNIVERSITY OF NORTH BENGAL**

B.Sc. Honours 6th Semester Examination, 2023

**DSE-P4-GEOLOGY**

**PHYSICS AND CHEMISTRY OF EARTH**

Time Allotted: 2 Hours

Full Marks: 40

*The figures in the margin indicate full marks.*

1. Write short notes on any **five** of the following: 1×5 = 5
  - (a) Abyssal plains
  - (b) Low-velocity layer
  - (c) Bouguer Anomaly
  - (d) Conrad discontinuity
  - (e) Stable Isotopes
  - (f) Oddo-Harkins rule
  - (g) Radioactivity
  - (h) Asthenosphere.
  
2. Answer any **three** questions from the following: 5×3 = 15
  - (a) Write in brief the geochemical classification of elements. 5
  - (b) Briefly explain what are the applications of oxygen isotopes in geological studies. 5
  - (c) What is P-Wave? What is a Shadow zone? 2+3
  - (d) Are Orthoclase and Microcline suitable for the K-Ar dating? Explain with reasons. 5
  - (e) What are the differences between the Ridge push and Slab pull? 5
  
3. Answer any **two** questions from the following: 10×2 = 20
  - (a) Define Isostasy. What is the basic difference between the Pratt and Airy models of Isostasy? 2+8
  - (b) Write in brief the different geological disposal methods of Nuclear waste. 10
  - (c) What is Tonalite - Trondhjemite - Granodiorite (TTG)? What is the hot Subduction model for the formation of the TTG? 3+7
  - (d) What do you mean by Radioactive isotopes? What are the advantages of Sm/Nd method for age dating? What are the disadvantages of the K-Ar age dating methods? 3+3+4

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