



'সমানো মন্ত্র: সমিতি: সমানী'

**UNIVERSITY OF NORTH BENGAL**

B.Sc. Honours 3rd Semester Examination, 2021

**CC5-GEOLOGY**

**IGNEOUS PETROLOGY**

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) Acidic rock
  - (b) Rapakivi texture
  - (c) Tholeiitic Basalt
  - (d) Phacolith
  - (e) Pa hoe hoe lava
  - (f) Liquidus and solidus
  - (g) Ultramafic rock
  - (h) Norm.
  
2. Answer any **three** questions from the following: 5×3 = 15
  - (a) Describe Bowen's Reaction principle and its importance in the evolution of Igneous rocks. 5
  - (b) Write down short notes on Laccoliths, Lopoliths and Batholiths with proper sketch. 5
  - (c) Draw TAS diagram for volcanic rocks and show different fields on the diagram. 5
  - (d) Using a proper phase diagram, describe Zoning in plagioclase and its significance with proper explanation. 5
  - (e) Differentiate between granophyric and myrmekitic texture. 5
  
3. Answer any **two** questions from the following: 10×2 = 20
  - (a) Describe with the suitable sketches the dominant mechanism of mantle melting in the different tectonic settings. 10
  - (b) Describe briefly some important physical properties of magma. 10
  - (c) What is the basis of the IUGS classification of plutonic rocks? Describe with a diagram, the QAP classification of Plutonic rocks. 10
  - (d) Define eutectic and peritectic point. Explain these points in  $Mg_2SiO_4 - SiO_2$  system with relevant diagram. What is congruent melting? 8+2

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