UNIVERSITY OF NORTH BENGAL

B.Sc. Honours Part-II Examination, 2020

GEOLOGY

PAPER-VI

STRUCTURAL GEOLOGY AND METAMORPHIC PETROLOGY

Time Allotted: 1 Hour | Full Marks: 25

The figures in the margin indicate full marks.

GROUP-A
(STRUCTURAL GEOLOGY)

Answer any *one* from the following $12\frac{1}{2}\times1 = 12\frac{1}{2}$

1. What are tectonites? What is axial planar cleavage? What is transacted cleavage? What is lineation? Describe different types of lineation with suitable diagrams. $1+2+2+2+5\frac{1}{2}=12\frac{1}{2}$

2. Discuss Ramsay's classification of folds with illustrations whenever required. $12\frac{1}{2}$

3. Discuss the geometric features associated with single and multi-layered folds. $12\frac{1}{2}$

GROUP-B
(METAMORPHIC PETROLOGY)

4. Answer any ***one*** question from below: $7\frac{1}{2}\times1 = 7\frac{1}{2}$

   (a) What is granulite? How are the index minerals in granulite grade different from high pressure blueschist facies index minerals?

   (b) What is RCMP? How can that get affected by partial melting process? How does fracture networks and grain boundary diffusion help the melt during metamorphism flee through network?

   (c) What is porphyroblast? Distinguish between porphyroclast and the aforementioned. What are pre-kinematic and syn-kinematic porphyroblast? Exemplify with neat sketches. How can you explain zoning in garnet during prograde metamorphism?

5. Answer any ***one*** question from below: $5\times1 = 5$

   (a) What are the prograde metamorphic minerals they can be found during metamorphism of politic rocks?

   (b) What is isograd and what is its difference with isoreaction grad?

   (c) Define role of Gibbs free energy during phase transformation during metamorphism.

   (d) What is recrystallization? What are BLG and SGR processes?

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