'समानो मन्त्रः समितिः समानी'

UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 2nd Semester Examination, 2022

CC4-GEOLOGY

STRUCTURAL GEOLOGY

Time Allotted: 2 Hours | Full Marks: 40

The figures in the margin indicate full marks.

1. Answer any ***five*** questions from the following: 1×5 = 5

   (a) Is load cast a sole mark? Give reason to your answer.

   (b) Name two primary igneous structures that are useful to structural geologist in determining the sequence of rocks in an area.

   (c) An inclined bed contains a lineation. Is it possible that the plunge amount of the lineation may be higher than the dip amount of the bed?

   (d) State the angular relationship between fold axis and transverse profile plane.

   (e) Name the fault that shows no apparent displacement on section or outcrop.

   (f) Name one penetrative and one non-penetrative structure.

   (g) Which of the following is not a stress term? (a) mega Pascal, (b) Pascal, (c) kilobars, (d) kilometers

   (h) The orientation of a plane in space is expressed by its attitude; a term consisting of two components, strike and dip. Define strike and dip.

2. Answer any ***three*** questions from the following: 5×3 = 15

   (a) Explain how primary igneous structures can help to resolve the sequence of rocks in an area?

   (b) Write about five structural elements of fold.

   (c) What is oblique slip fault? Explain with a suitable diagram.

   (d) Compare and contrast between ductile deformation and brittle deformation.

   (e) How Rheology plays role in causing deformation?

3. Answer any ***two*** questions from the following: 10×2 = 20

   (a) Give the definition of fault. Write about four criteria (with suitable sketches if necessary) that are helpful in recognizing a fault in nature. 2+8 = 10

   (b) Name different types of unconformity found in nature. Describe all types with sketches. 4+6 = 10

   (c) Write in detail fold classifications based on fold axis orientation, axial plane orientation and relative age of different layers. Draw diagram (s) whenever necessary. 3+4+3 = 10

   (d) Draw a nice Stress-Strain diagram and explain behaviour of all types of materials, Elastic, Viscous and Plastic.

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