



UNIVERSITY OF NORTH BENGAL

B.Sc. Honours 5th Semester Examination, 2020

DSE2-GEOLOGY

Full Marks: 40

ASSIGNMENT

The figures in the margin indicate full marks.

**The question paper contains paper DSE-2A and DSE-2B.
The candidates are required to answer any *one* from *two* papers.
Candidates should mention it clearly on the Answer Book.**

DSE-2A

RIVER SCIENCE

Answer any *four* from the following

10×4 = 40

1. What is Bernoulli's equation? Show that it satisfy the principle of dimensional homogeneity. Also show that consistent units result without additional conversion factor in SI unit.
2. Distinguish between steady and unsteady flow. Distinguish between uniform and nonuniform flow. Define and illustrate the concept of streamline, pathline, streakline.
3. Illustrate the variability in landscape connectivity for an idealized catchment.
4. Discuss control of catchment morphometrics in connection to river character and behavior.
5. Discuss Horton-Strahler stream order scheme using relevant diagrams.
6. How do you define thalweg? What is the relation between river channel pattern and thalweg length?

DSE-2B

FUEL GEOLOGY

Answer any *four* from the following

10×4 = 40

1. Discuss about the chemical composition of gas and crude oil. 10
2. Describe the different factors for the conversion of organic matters to hydrocarbon. 10

3. Discuss about the processes of migration of Petroleum. 10
4. How does the method of coalification operate at various stages? Write down the conditions on which coal accumulation depends. 7+3
5. Describe different fundamental components of coal petrography. Draw the diagrammatic representation of different microlithotype by following classification of scientist Bustin. 7+3
6. How can you differentiate humic and sapropelic coals? How does different mineral matter affects the rank of coal? What is detrital mineral matter? 4+4+2

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