

This question paper contains 2 printed pages]

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S. No. of Question Paper : 1769

Unique Paper Code : 2192013603

Name of the Paper : **Paleoceanography and Paleoclimate (DSC-18)**

Name of the Course : **B.Sc. (Hons.) Geology (NEP)**

Semester : VI

Duration : 3 Hours

Maximum Marks : 90

(Write your Roll No. on the top immediately on receipt of this question paper.)

Answer any *five* questions.

All questions carry equal marks.

1. Define climate and its components. Distinguish it from weather using suitable temporal and spatial examples and explain interactions and feedbacks within the climate system with diagrams.
2. Explain isolation and albedo. Discuss factors controlling insolation (short and long-term) and explain the role of albedo in Earth's energy balance and climate feedbacks with examples.
3. Discuss the formation of the Antarctic Ice Sheet as a result of the opening of two gateways. Provide neat diagrams to explain your answer.

P.T.O.

4. Define greenhouse gases. Explain their sources, sinks and why they are so called and describe the mechanism of infrared absorption and their role in global warming.
5. Explain the origin and evolution of ocean basins in the context of plate tectonics. Discuss the Wilson cycle with examples and its implications for ocean circulation and climate.
6. Discuss the origin of the North and South Equatorial Currents. Explain the phenomenon of El Niño and La Niña. How does the Indonesian Seaway contribute to this phenomenon ?
7. Classify oceanic sediments. Explain their sources, transport, distribution and significance as climate archives with examples.
8. Define aerosols and discuss their natural and anthropogenic sources. Examine the role of aerosols in climate change with reference to their direct and indirect effects on the Earth's radiation balance and atmospheric processes.