

- (b) Explain with example how growing topography control the orientation and character of drainage networks.
- (c) Explain how the stream gradient index works and why it is useful for studying the effect of tectonics on landscapes.
8. Describe broad morphological features associated with different geomorphic setting present on the Indian subcontinent?

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 4061 H

Unique Paper Code : 2192012401

Name of the Paper : Geomorphology

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

Semester : IV

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Answer any **five** questions.
3. **All** Questions carry equal marks unless mentioned.

1. (a) Describe the plate tectonics with emphasis on forces driving it.

(b) Compare the effects of collision of two similar and two dissimilar plates. Also, give examples.

2. Answer **any three** of the following :
- (a) Briefly explain the types of deserts and their origin.
 - (b) Explain the difference between fluid and impact thresholds.
 - (c) Explain the formation of ventifacts.
 - (d) Explain briefly why most of the deserts are located around 30° latitude?
3. (a) How does newly deposited snow changes over time to become glacier ice?
- (b) With the help of a diagram describe the movement of ice in an alpine glacier using flow lines in a cross section.
- (c) List three observations (with brief explanation) that indicate glaciers are capable of abrading bedrock outcrops.
- (d) Define outwash and outwash plains and explain how they form.

- (e) What are fjords? How and where are they formed?
4. Write detailed notes on the following :
- (a) Hypsometric curve and its application
 - (b) Concept of Magnitude and Frequency
 - (c) Chezy equation and Manning equation
5. Explain the causes and effects of sea level changes. Enumerate the major geomorphic landforms associated with sea level fluctuations.
6. (a) Under what conditions does a landscape achieves steady state over geological time scales?
- (b) What were the contributions of James Hutton, Louis Agassiz and G.K. Gilbert to modern Geomorphology?
7. (a) Explain the role of erosion in driving both rock and surface uplift.