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14 (SEM-IV) GGY 4206 (B)

2025

GEOGRAPHY

Paper : GGY-4206 (B)

(Spl. Paper)

(Fluvial Geomorphology)

Full Marks : 80

Time : Three Hours

***The figures in the margin indicate
full marks for the questions.***

Unit-I

Marks : 40

Answer Q. No. 1 and ***any three*** questions from the rest.

1. Describe the flow types and explain the factors affecting the velocity of flow in a channel with citing examples. 6+10=16

Or

Discuss the impact of sediment transport mechanics and processes on sediment discharge and deposition in a channel. 16

2. Describe how water discharge effects channel variables with appropriate examples. 8
3. Discuss the processes of channel erosion and deposition and their impact on river morphology with citing examples from the Brahmaputra River. 4+4=8
4. Explain *any two* methods of water discharge estimation with necessary illustrations. 4+4=8
5. Write short notes on ***any two*** of the following : 4×2=8
 - (a) Velocity distribution pattern in a channel
 - (b) Types of sediment load
 - (c) Channel aggradation and degradation

Part-II*Marks : 40*

Answer Q. No. **6** and ***any three*** questions from the rest.

6. Discuss the impact of land use/land cover changes on river channel hydrology and catchment ecosystem. 16

Or

Present a systematic description of the fluvial geomorphology of the Brahmaputra river with a special focus on floodplain characteristics.

7. Critically discuss the sedimentation process and its effect on the river channel and the surrounding ecosystem. 4+4=8
8. Describe the formation process and significance of wetlands of the Brahmaputra floodplain from ecological perspectives. 4+4=8
9. Discuss how climate change affects the frequency and intensity of extreme hydrological events in a river basin. 8

10. Write short notes on ***any two*** of the following : 4×2=8

- (a) River basin planning and development
 - (b) Fluvio-geomorphological characteristics of Majuli island
 - (c) Bank erosion as a fluvio geomorphic hazard.
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