[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 1715 **C** **Roll No.....**

Unique Paper Code : 219601

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

Name of the Paper : Applied River Science (ET–1)

Semester : VI

Duration : 3 Hours Maximum Marks : 75

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.

1. What are the different errors associated with rainfall measurement. Mention different extrapolation methods to compute basin average rainfall value from point (rainfall) data.

2. What is the difference between runoff and river discharge ? Discuss the various models for runoff generation process.

3. Mention the four major channel patterns. Arrange them in order of increasing energy in river system. Discuss the processes responsible for maintenance of meandering nature and its dynamics behaviour.

4. Write short notes on the following :–

   (a) Flow duration curve

   (b) E-flow

   (c) Sediment delivery ratio

   (d) River continuity concept

P.T.O.

5. Critically evaluate aggradational and degradational processes associated with river and glacier in a mountainous region. Comment on the connectivity between these glacial and fluvial processes.

6. What is Random Topology (RT) model ? Discuss its application in the study of drainage network evolution.

7. How can an understanding of small process like movement of sediment grain be helpful in the analysis of the landscape evolution pattern and its controls.

8. Mention different scenarios and causes of flooding hazards. Discuss channel shifting process and its controls in detail.