

21APG3E2L**M.Sc. III Semester Degree Examination, April/May - 2023****APPLIED GEOLOGY****Watershed Management****(CBCS)**

Time : 3 Hours

Maximum Marks : 70

Note : Answer **any five** of the following questions with Question **No.1 (Q.1) Compulsory**, each question carries **equal** marks.

1. Answer the following : **14**
 - (a) Describe the concept of a watershed and explain how it functions as a hydrologic unit.
 - (b) Discuss the primary objectives of watershed management, including the conservation and protection of water resources.

2. Answer the following : **14**
 - (a) Explain the process of watershed delineation, including the methods used to identify the boundaries of a watershed.
 - (b) Discuss the key natural processes that operate within watersheds, including the water cycle, soil formation and erosion and nutrient cycling.

3. Discuss the potential impacts of land use change and land management practices on watershed degradation, including deforestation, agricultural intensification and urbanization. **14**

4. Add a note on : **14**
 - (a) Describe the different types of soil erosion and their causes.
 - (b) Describe the different parameters used to measure rainfall. Discuss how each parameter affects the hydrological response of a watershed and the potential for flooding or drought.

5. Answer the following : **14**
 - (a) Discuss the different types of conservation methods that can be used to reduce soil erosion on croplands.
 - (b) Discuss the role of check dams in controlling erosion and managing water resources in watersheds.

- 6.** Answer the following : **14**
- (a) Describe the benefits of a watershed approach to natural resource management.
 - (b) Describe the social and economic impacts of floods, droughts and wildfires on communities living in and around watersheds.
- 7.** Describe the different engineering measures that can be used for soil conservation. Evaluate the potential of engineering measures to promote sustainable land use and enhance ecosystem function in watersheds. **14**
- 8.** Write a short note on : **14**
- (a) Elements of watershed management
 - (b) Gully control structures
 - (c) Benefits of farm ponds

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