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**Question Paper Code : 20487**

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2023.

Fifth Semester

Civil Engineering

CE 3038 — WATERSHED CONSERVATION AND MANAGEMENT

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Identify the physical watershed problems.
2. What is Delineation?
3. Identify the types of soil erosion.
4. What is sedimentation in the context of watershed management?
5. Define catchment yield.
6. Recall the purpose of check dams.
7. What is GIS
8. Identify the use of GIS in watershed management.
9. What is Agroforestry?
10. What is integrated watershed management?

PART B — (5 × 13 = 65 marks)

11. (a) Describe the morphological characteristics of the soil and its influence on Engineering properties.

Or

- (b) Discuss the methods to determine the priority and how to prioritize sub watersheds based on soil erosion and sedimentation.

12. (a) Explain any six methods of soil conservation practices.

Or

(b) Explain the methodology to estimate soil loss using USLE model.

13. (a) Describe any three traditional water harvesting techniques with a neat sketch.

Or

(b) Explain the factors to be considered in the design of a farm pond and grassed waterways with its advantages.

14. (a) Explain the role of GIS for successful planning of watershed development.

Or

(b) Discuss a case study based on Decision support system of GIS.

15. (a) Discuss the role of stakeholder's participation in the watershed management programme.

Or

(b) Describe in detail about the Monitoring and evaluation system adopted in watershed development plan.

PART C — (1 × 15 = 15 marks)

16. (a) Illustrate any one case study related to Integrated Watershed Management programmes in India. (15)

Or

(b) Produce a plan for a watershed development program in a semi urban area. (15)