

Code No: 137JF

R16

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech IV Year I Semester Examinations, December - 2019

WATERSHED MANAGEMENT

(Civil Engineering)

Time: 3 Hours

Max. Marks: 75

Note: This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART - A

(25 Marks)

- 1.a) What is the significance of hydrology of small watershed? [2]
- b) List the essentials of watershed management. [3]
- c) List the control measures of soil erosion. [2]
- d) State the importance of slope gradient factor (S), cover and management factor (C), Slope length factor in USL equation. [3]
- e) List the various uses of rain water harvesting methods. [2]
- f) What are the advantages and disadvantages of Tanka method of rainwater harvesting? [3]
- g) Classify various direct surface techniques of artificial recharge. [2]
- h) How do you relate the purpose of Hydrogeological mapping to planning of artificial recharge? [3]
- i) State the characteristics of typical saline soils. [2]
- j) What is the necessity of Reclamation of saline soils? [3]

PART - B

(50 Marks)

2. Define and discuss the various terms of reference and the corresponding outputs for project development and implementation of small watersheds. [10]
3. Explain in detail about the concept and objectives of sustainable development. [10]
4. By means of neat flow diagram, explain the factors and causes of soil erosion. Also explain the interaction between them. [10]
5. With neat sketches, explain various control measures of soil erosion. [10]
6. Explain the salient features of filter method of rainwater harvesting. [10]
7. Explain the general design features of roof top rainwater harvesting method. [10]

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8. Explain the site characteristics and design guide lines of Check dams. [10]

OR

9. Discuss the necessity and site characteristics of Spreading Basins. [10] AG AG AG AG AG AG AG

10.a) Discuss the relation of biomass energy sources on farm.
b) Discuss the objectives and strategies of scheme for reclamation of saline soils. [4+6]

OR

11.a) Explain the causes and treatment methods of saline soils.
b) Explain the various necessity and applications of micro farming. [4+6]

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