

Code No: RT42013D

**R13**

**Set No. 1**

**IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2019**

**WATERSHED MANAGEMENT**

**(Civil Engineering)**

**Time: 3 hours**

**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) Explain the basic objectives of watershed management. [4]  
b) Explain Watershed delineation. [3]  
c) Explain the effect of erosion on land fertility. [4]  
d) Define RWH. What are the benefits of RWH? [4]  
e) What is land use and land cover? [4]  
f) What is reservoir routing? [3]

**PART-B (3x16 = 48 Marks)**

2. a) Explain in detail about the integrated watershed management approach. [8]  
b) Discuss watershed management as a part of sustainable development. [8]
3. a) Discuss about different runoff measuring devices in watershed. [8]  
b) Classify the various watershed characteristics & its importance in watershed management. [8]
4. a) Explain Universal soil loss equation in detail. [8]  
b) Discuss in detail about Erosion control methods:  
(i) Furrowing (ii) ploughing (iii) rock fill dams. [8]
5. a) Write a short note on Check dams and Farm ponds. [8]  
b) Explain in detail the methods use for artificial recharge. [8]
6. a) Explain reclamation procedure for alkaline and salt affected soils. [8]  
b) Discuss about the land capability classification. [8]
7. a) What is strip cropping? Discuss different types of biomass management. [8]  
b) What is crop husbandry and sustainable agriculture? Explain them. [8]

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**Set No. 2**

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**WATERSHED MANAGEMENT**

**(Civil Engineering)**

**Time: 3 hours**

**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) What is the function of a watershed? [3]  
b) Bring out the role of peoples participation in watershed management. [4]  
c) List out the different types of erosion. What are the consequences of soil erosion? [5]  
d) What are the various types of rain water harvesting? [3]  
e) Write a short note on land grading operation. [4]  
f) What is the role of ecosystem? [3]

**PART-B (3x16 = 48 Marks)**

2. a) Explain in detail the importance of watershed management in India. [6]  
b) Define watershed development programme. Also Explain how integrated and multi disciplinary approach will help watershed management? [10]
3. a) Discuss in detail various characteristics of watershed. [10]  
b) Explain various methods of runoff calculation. [6]
4. a) What is meant by term erosion? Explain the causes of erosion. [8]  
b) Discuss in detail about contour techniques and rock fill dams erosion control methods. [8]
5. a) What are the basic steps to begin the process of Rain Water Harvesting? [4]  
b) Describe the role of check dam, farm ponds and percolation tanks in Rain Water Harvesting. [12]
6. Explain land use and land capability. List out the different objectives of land capability classification. Explain in detail about the classification of land capability? [16]
7. a) Explain in detail inter, mixed and strip cropping. [8]  
b) Give a brief explanation on social forestry and afforestation. [8]

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**Set No. 3**

**IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2019**

**WATERSHED MANAGEMENT**

**(Civil Engineering)**

**Time: 3 hours**

**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) What do you mean by watershed management? [3]  
b) What are the important watershed factors to be considered in watershed management? [3]  
c) List out the climatic factors that influence the Erosion. Explain them. [4]  
d) What are the benefits of RWH? [4]  
e) Write a short note on Reclamation of saline and alkaline soils. [4]  
f) Explain social forestry and afforestation. [4]

**PART-B (3x16 = 48 Marks)**

2. a) Explain about the watershed deterioration and its consequences. [8]  
b) Discuss watershed approach –planning, implementation & management. [8]
3. a) Give a brief explanation on hydrology and socio-economic characteristics of watershed. [8]  
b) Write a short on Watershed delineation. [8]
4. a) Explain types of erosion in detail. [8]  
b) Explain in detail the Contour techniques to control Erosion. [8]
5. What are harvesting structures? Explain any three in detail with figures. [16]
6. Define land capability. Explain classification of land under several categories and their purpose. [16]
7. a) Write a short on the agri-horticulture cropping patterns and afforestation. [8]  
b) Bring out the importance of people's participation in the preparation of action plan and management activities of watershed. [8]

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**Set No. 4**

**IV B.Tech II Semester Regular/Supplementary Examinations, April/May - 2019**

**WATERSHED MANAGEMENT**

**(Civil Engineering)**

**Time: 3 hours**

**Max. Marks: 70**

*Question paper consists of Part-A and Part-B*

*Answer ALL sub questions from Part-A*

*Answer any THREE questions from Part-B*

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**PART-A (22 Marks)**

1. a) Explain the basic objectives of watershed management. [4]
- b) Discuss any three characteristics of watershed. [3]
- c) Write a short note on land grading operation. [4]
- d) What do you mean by percolation tanks? [4]
- e) What is land use and land cover? [4]
- f) What is reservoir routing? [3]

**PART-B (3x16 = 48 Marks)**

2. a) Describe watershed deterioration and its consequences. [8]
- b) What is the need for watershed development? Explain. [8]
3. a) Give a brief explanation on hydrology and socio-economic characteristics of watershed. [8]
- b) Write a short on Watershed delineation. [8]
4. a) Explain the various factors affecting erosion. [8]
- b) Discuss any model to estimation of soil loss. [8]
5. a) Write a short note on Check dams and Farm ponds. [8]
- b) Discuss the rain water harvesting from roof top. [8]
6. Explain land use and land capability. List out the different objectives of land capability classification. Explain in detail about the classification of land capability. [16]
7. a) What do you mean by model calibration and validation? Explain. [8]
- b) Give a brief explanation on social forestry and afforestation. [8]