DEPARTMENT: CIVIL
YEAR/SEM:II/II

NAME OF THE SUBJECT	**:**	**WATERSHED MANAGEMENT**
REGULATION	**:**	**R13**
COURSE	**:**	**B.TECH**
BRANCH	**:**	**CIVIL**
YEAR / SEMESTER	**:**	**IV YEAR – II SEM**

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UNIT-I

1.Explain in detail about the objectives of watershed management
2.explain about concept and need for watershed development
3.what is integrated multidisciplinary approach in watershed management
4.discuss about the principles of watershed development
5.what are the factors affecting watershed management?explain in detail

UNIT – II

1. Geomorphologic Characteristics of watershed.
2. Explain in detail about the different characteristics of watersheds?
3. Explain the affect of socio-economic characteristics of a watershed?
4. Discuss various basic database required within the perspective of holistic development of a watershed.
5. By means of a case study, explain the hydrology and hydrogeology characteristics of a watershed.
6. Explain about shape factor of a watershed.
7. Explain the soils characteristics of a watershed.
8. Discuss about

i)Compactness coefficient ii) Drainage density

UNIT – III

1. What are the effects of soil erosion on land fertility?
2. Write a note on the methods of soil erosion estimation.
3. Write in detail about the Gully erosion control measures.
4. Enumerate the limitation and advantages of Gabion as a control measure of erosion.
5. State and explain the factors affecting the erosion..
6. By means of neat sketch, explain the principles of process involved

ploughing and trenching as a soil control measure.

7. Brushwood dam, Gabion and gully control
8. Briefly explain the classification of soil erosion.
9. Discuss the factors affecting and its causes of soil erosion.

UNIT – IV

1. Farm ponds with neat sketch.
2. Distinguish between surface flow harvesting and subsurface flow harvesting.
3. Write short note on percolation tanks.
4. List out the techniques adopted for rain-water harvesting.
5. Differentiate between the process involved in surface and subsurface flow harvesting.
6. What are the various limitations applicable and assumptions required for proper application of rain water harvesting?
7. What are the objectives of social forestry?
8. What is terracing? Explain bench terracing.
9. Discuss in detail about sustainable agriculture and afforestation.

UNIT – V

1. Explain two management strategies of watershed development.
2. Explain in detail about the planning of watershed management activities.
3. Explain the methods of reclamation of saline and alkaline soils.
4. Explain about maps by using remote sensing, as a part of watershed management.
5. Explain about the management of
   i) Grass land ii) Wild land
6. Write a note on the management of forest land and agricultural land.
7. Explain in detail about land use and sustainable land management.
8. Write a detailed note on future of watershed management.

9. Discuss about the economic viability of watershed management.
10. Give the detailed classification of land capability and land use adopted in land management.

UNIT – VI

1. What are the spatial considerations required in watershed modeling? Explain.
2. Explain various advances made in the physically-based watershed models.
3. What are the advantages of watershed modeling techniques?
4. Explain the validation methods of a watershed model.
5. Explain about the watershed modeling practices in India.
6. Explain in detail about calibration and validation of watershed models.
7. Explain various types of basic resource data/ surveys needed for watershed
8. Explain different data used for watershed modeling methods.
9. What are the advances of watershed models?
10. Write a note on history and evolution of watershed modeling. Mention different models that are being developed.
11. Write short notes on advances of watershed models.