

Code :R7420104

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IV B.Tech II Semester(R07) Regular Examinations, April 2011
WATER SHED MANAGEMENT
(Civil Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. (a) Write a detailed account on integrated watershed management practices in India.
(b) What disciplines take part in integrated watershed management practices?
2. Write in detail about the following watershed characteristics. How are they useful in planning a watershed development?
 - (a) Drainage.
 - (b) Land Use.
 - (c) Size and shape
 - (d) Physiography
3. (a) Discuss how land fertility and land capability are affected in a watershed due to soil erosion.
(b) What is universal soil loss equation? Write in detail about its adoption?
4. Explain how these measures control soil erosion
 - (a) Gully control
 - (b) Bushwood dam
 - (c) Gabion
 - (d) Trenching
5. (a) What is rain water harvesting? What are the structures to harvest rainwater?
(b) How can conserve soil moisture through farm ponds, check dams and percolation tanks?
6. (a) How do you reclaim soil and alkaline soils?
(b) How do you classify land use and land capability in a watershed?
7. (a) What is an eco system? What is its relation to watershed management?
(b) Discuss the following in an eco system management plan:
 - i. Crop husbandry
 - ii. Soil enrichment
 - iii. Social forestry
 - iv. Dry land agriculture
8. (a) Write an account on the role of stake holders in watershed management.
(b) What are the administrative requirements necessary to implement a watershed development plan?

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1. (a) What is watershed? Why do we need to develop them?
(b) How do you justify that watershed management is multi disciplinary in nature?
2. What are different characteristics of a watershed that influence the planning of a watershed development? Discuss in detail.
3. (a) Discuss the effects of soil erosion on land fertility and land capability in a watershed.
(b) Discuss in detail about universal soil loss equation.
4. How do the following control the soil erosion in a watershed? Use sketches wherever necessary.
 - (a) Furrowing
 - (b) Ploughing
 - (c) Trenching
 - (d) Gabion
5. (a) What is water harvesting? How do we achieve the same in residential buildings?
(b) What are the soil moisture control structures? Discuss any two with sketches.
6. (a) Explain the management practices of forest and agricultural land in a watershed development plan.
(b) How do soil turn saline and alkaline soils? What are reclamation measures?
7. (a) What is the role of an ecosystem in watershed management?
(b) Write details accounts on the following in an eco system management plan.
 - i. Biomass management
 - ii. Dry land agriculture
 - iii. Afforestation
 - iv. Social forestry
8. (a) How do you prepare action plans to implement a watershed development plan?
(b) Explain the role of stake holders in a watershed management.

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1. What do you understand by watershed management? Discuss in detail the need to have integrated watershed development.
2. (a) What are the basic data and inputs useful in implementing a watershed development plan?
(b) Write detailed accounts on the following characteristics of a watershed
 - i. Land use patterns.
 - ii. Hydrology.
 - iii. Socio Economic characteristics.
 - iv. Drainage.
3. (a) What are the types of soil erosion in a watershed?
(b) Explain how you will estimate the soil loss due to erosion in a watershed.
4. List out the measures to arrest soil erosion in a watershed. Discuss each measure in detail and compare them.
5. (a) How do you achieve soil moisture conservation through check dams and percolation tanks?
(b) What are the means by which you harvest rainwater? Use neat sketches wherever necessary.
6. (a) What are reclamation measures for saline and alkaline soils?
(b) How do you manage the following in a watershed development programme.
 - i. Forest.
 - ii. Grass lands.
 - iii. Wild lands.
7. (a) What is an eco system? Explain its significance in a watershed management programme.
(b) Write detailed accounts on social forestry and afforestation.
8. (a) Explain the role of people participation in watershed management.
(b) How are action plans prepared to implement a new watershed management plan.

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1. (a) What are the broad objectives of watershed management? Discuss them.
(b) Validate how watershed management is interdisciplinary.
2. List out characteristics of a watershed that influence the implementation of the watershed programme. Discuss each one of them in detail.
3. (a) What are the factors influencing the erosion of soil in a watershed?
(b) Explain how you will estimate the soil erosion using universal soil equation.
4. List out all soil erosion control measures in a watershed and discuss any four measures in detail.
5. (a) Discuss in detail about water harvesting structures.
(b) How do we get soil moisture conservation through checks dams, farm ponds and percolation tanks?
6. (a) What the reasons for soils to turn into saline and alkaline soils? How do you reclaim to normal state?
(b) How do you manage forest, grass land and wild land in a watershed programme?
7. (a) What is the role of eco system in a watershed management?
(b) Discuss how horticulture, dry land agriculture and silvi culture are managed in an ecosystem.
8. (a) What is the role of people participation in a watershed management initiative?
(b) What are the planning activities for a watershed development plan.
