

B.Tech III Year I Semester (R15) Supplementary Examinations June 2018  
**WATER HARVESTING & CONSERVATION**  
 (Civil Engineering)

Time: 3 hours

Max. Marks: 70

**PART – A**  
 (Compulsory Question)

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- 1 Answer the following: (10 X 02 = 20 Marks)
- (a) How do you classify groundwater?
  - (b) What are the laboratory and field methods of sampling of groundwater?
  - (c) What are the methods of rainwater harvesting?
  - (d) What are the purification techniques for direct use of harvested rainwater?
  - (e) What is sewage irrigation?
  - (f) What are the factors affecting the development of water reclamation and reuse?
  - (g) What is integrated farming?
  - (h) Explain the conjunctive use of water resources
  - (i) What is a contour trench? Explain with neat sketch?
  - (j) What is a Gully control structure?

**PART – B**

(Answer all five units, 5 X 10 = 50 Marks)

**UNIT – I**

- 2 (a) Write short notes on: (i) Sources of groundwater. (ii) Hydro geological cycle. (iii) Infiltration.  
 (b) Write short notes on artificial recharge of groundwater.

**OR**

- 3 (a) Define with examples: (i) Aquifers. (ii) Aquifuges. (iii) Aquicludes. (iv) Aquitards in groundwater basin.  
 (b) Explain the: (i) Zones of aeration and saturation. (ii) Effects due to lowering of water table in a groundwater basin.

**UNIT – II**

- 4 (a) Explain the principles of water harvesting.  
 (b) Describe the design of rainwater harvesting structure.

**OR**

- 5 (a) How do you harvest surface runoff?  
 (b) How do you recycle the harvested water?

**UNIT – III**

- 6 (a) Explain the perspective on Recycle and Reuse of waste water.  
 (b) Describe the Wastewater Reclamation and Waste water Recharge for reuse.

**OR**

- 7 (a) Explain the components of water reclamation and reuse.  
 (b) Write short notes on "Waste water treatment requirements for water reuse methods".

**UNIT – IV**

- 8 (a) Explain integrated water resources management.  
 (b) Describe natural resources management.

**OR**

- 9 (a) Write short notes on "Watershed Management Practices in Arid and Semiarid Regions – Case Studies".  
 (b) Write short notes on "Short term and Long term strategic planning for sustainable watershed practice".

**UNIT – V**

- 10 (a) Explain the scope of soil and water conservation.  
 (b) What are the types and causes of EROSION?

**OR**

- 11 (a) Explain the soil erosion control measures.  
 (b) Write short notes on design of farm ponds and percolation ponds.

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