

Code: 15A01507

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)

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 Semi-arid 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.