

AGRICULTURAL AND IRRIGATION ENGINEERING

VI Semester

CE 9306 – Integrated Water Resources Management

(Regulation 2008)

Time: 3 Hours

Answer ALL Questions

Max. Marks 100

Part – A

10X2=20 Marks

1. Draw the finger diagram which shows the relationship between IWRM and its relation to sub-sectors.
2. Bring out any two differences between IWRM strategy and the traditional water plan.
3. State the two key principles of Millennium Development Goals.
4. What is GWP? Why is it important?
5. Define the term *water governance*.
6. Expand XLRM framework.
7. State the blue-green water concept made after Falkenmark, 2013.
8. Differentiate between *water shortage* and *water stress*.
9. Bring out the admirable changes noted between Hariyali Guidelines, 2003 and the Common Guidelines, 2008.
10. Give a brief about the *ecosystem services concept*.

Part – B

5 x 16 = 80 marks

11. Conceptual frameworks have been developed by various international agencies for the implementation of IWRM. Discuss on any one such framework to bring out the challenges that are being faced during implementation. Give your suggestions to bridge the gap between planning and implementation. (16)
12. (a) Elaborate on the four water management principles. (16)

(OR)

- 12.(b) Describe the paradigm shift that has taken place in the management of water resources from the 19th Century to till date. Bring out the differences that exist between the North and the South too. (16)
13. (a)(i) Elaborate on the causes of water scarcity. (8)
- (ii) Water is a cross-cutting issue in MDGs. – Substantiate. (8)

(OR)

13. (b) Explain the goals which are developed to meet out the global challenges tied with water, at the regional level. Discuss the strategies followed and the outcomes expected. (16)

14. (a) (i) Explain the ways of enabling an environment for community-based adaptation measures for climate change. (8)
(ii) Describe the local strategies that could be initiated to cope up the water stress. (8)

(OR)

14. (b) Describe the procedure for conducting a health impact assessment. (16)

15. (a) (i) Elaborate on virtual water and the water trade. (8)
(ii) Establish the link between water foot print and food security. (8)

(OR)

15. (b) (i) Give an elaboration of any four agro-ecosystems highlighting their characteristics and management. (12)
(ii) Write a note on the criteria to be considered for achieving sustainable agriculture. (4)