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**Question Paper Code: 54104**

B.E. / B.Tech. DEGREE EXAMINATION, APRIL 2019

Fourth Semester

Civil Engineering

15UCE404- WATER RESOURCES AND IRRIGATION ENGINEERING

(Regulation 2015)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Irrigation is basically required in CO1- R  
(a) Humid regions      (b) Arid regions      (c) Semi arid regions      (d) All the above
2. With the increase in supplied irrigation water, the yield of crops CO1- R  
(a) Increases continuously      (b) Increases upto a certain and then becomes constant.  
(c) Decreases continuously      (d) increases up to a certain limit and then decreases
3. The most expected crops in a hot arid district of Rajasthan State in CO2- R  
India, in the month of September are  
(a) Rice and sugarcane      (b) Bazar and maize  
(c) Wheat and maize      (d) Tobacco and cotton
4. The maximum irrigation requirement of rice crop is exhibited by its CO2- R  
(a) Maximum delta value      (b) Maximum duty value  
(c) Minimum duty value      (d) Minimum delta value
5. If two canals are taken off from both the flanks of a river at the side of a CO3- R  
diversion headwork, then the number of undersluices and divide walls will  
respectively be  
(a) 1 and 1      (b) 1 and 2      (c) 2 and 1      (d) 2 and 2

6. In a barrage project, a divide wall is provided to CO3- R
- (a) Separate the lower crest ‘undersluice side’ from the higher crest ‘weir side’  
 (b) Separate the higher crest ‘undersluice side’ from the lower crest ‘weir side’  
 (c) Keep the cross currents away from the barrage body  
 (d) Serve none of the above purposes
7. A canal headworks has nothing to do with a CO4- R
- (a) Weir                      (b) Guide bank              (c) Head regulator              (d) Safety ladder
8. Silt excluders are constructed CO4- R
- (a) On the river bed downstream of the head regulator  
 (b) On the river bed upstream of the head regulator  
 (c) On the canal bed downstream of the canal head regulator  
 (d) None of these
9. The efficiency of water conveyance does not depend upon CO5- R
- (a) Climatic conditions  
 (b) Geometry of the conveyance system  
 (c) Nature of the boundary of the conveyance system  
 (d) Method of application of water
10. Which one of the following does not contribute to water logging? CO5- R
- (a) Inadequate drainage                      (b) Seepage from unlined canals  
 (c) Frequent flooding                      (d) Excessive tapping of ground water

PART – B (5 x 2= 10 Marks)

11. What is the need of irrigation? CO1- R
12. Distinguish between crop period and base period. CO2- R
13. Sketch the cross section of weir and label its parts. CO3- R
14. Classify various types of canal. CO4- R
15. Discuss about participatory Irrigation Management in India. CO5- R

PART – C (5 x 16= 80 Marks)

16. (a) (i) Explain the benefits of irrigation CO1- U (8)  
(ii) Write the various Irrigation projects in Tamilnadu. CO1- U (8)

Or

- (b) (i) Briefly explain about Soil Water Potential and its components. CO1- U (8)  
(ii) Write short notes on Planning and development of an irrigation Project. CO1- U (8)

17. (a) (i) Discuss the various methods to improve the duty of crop. CO2- U (8)  
(ii) Describe the term irrigation efficiency and explain the processes leads to different kinds of Irrigation efficiencies with formulae. CO2- U (8)

Or

- (b) (i) Discuss in brief the any one direct measurement of consumptive use of water. CO2- U (9)  
(ii) Write short notes on Net irrigation requirement (NIR). CO2- U (7)

18. (a) (i) Describe about weirs along with its elementary profile and give the status of weir on pervious soil. CO3- U (10)  
(ii) Enumerate the factors on which site for a dam depends? CO3- U (6)

Or

- (b) (i) List the forces acting on dam and explain its nature. CO3- U (8)  
(ii) Explain any two types of spillway. CO3- U (8)

19. (a) (i) Explain the purpose and different types of canal drop in detail. CO4- U (8)  
(ii) Enumerate the cross drainage works? Recall the necessity of such a work in canal project. CO4- U (8)

Or

- (b) (i) Discuss the various types of canal alignment. CO4- U (8)  
(ii) List the various types of river training works. Explain any one type of river training works with a neat sketch. CO4- U (8)

20. (a) (i) List the advantages of on farm development. CO5- U (8)  
(ii) Explain performance evaluation with reference to water management. CO5- U (8)

Or

- (b) (i) Explain in detail water user's association. CO5- U (8)  
(ii) Explain the various steps for water management in farms. CO5- U (8)