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**Question Paper Code: 95104**

B.E. / B.Tech DEGREE EXAMINATION, APRIL 2024

Fifth Semester

Civil Engineering

19UCE504 Water Resources and Irrigation Engineering

(Regulation 2019)

Duration: Three hours

Maximum: 100 Marks

Answer ALL Questions

PART A - (10 x 1 = 10 Marks)

1. Precipitation in the form of water drops of size greater than 0.5mm and less than 6mm CO1- U  
(a) Rain                      (b) Snowfall                      (c) Hail                      (d) Drizzle
2. Evaporation of water through stomatal pores of the leaves is called CO1- U  
(a) Evaporation                      (b) Transpiration  
(c) Evapotranspiration                      (d) Condensation
3. Unit Hydrograph theory was enunciated by CO2- U  
(a) Merrill Bernard                      (b) W.W. Horner                      (c) Le-Roy K. Sherman                      (d) Robert E. Horton.
4. The S Curve is obtained by CO2- U  
(a) The summation of flood hydrograph                      (b) differentiation of flow mass curve  
(c) The summation of Unit hydrograph                      (d) Using the flow duration curve
5. Crop ratio is the ratio of area irrigated in \_\_\_\_\_. CO3- U  
(a) in Rabi season to Kharif season                      (b) in Kharif season to Rabi season  
(c) under perennial crop to total crop                      (d) under perennial crop to non-perennial crop
6. The duty is largest at \_\_\_\_\_. CO3- U  
(a) at the head of the main canal                      (b) at the head of the water course  
(c) on the field                      (d) at all place

7. Hydraulic jump with stilling basin is \_\_\_\_\_ CO4- U  
 (a) Energy Dissipator (b) barrage (c) Dam (d) Canal
8. By constructing which structure we can help the fish in their migration? CO4- U  
 (a) Scouring Sluices (b) Silt Excluder (c) Fish Ladder (d) Divide Wall
9. What is the most water effecient system of irrigation CO5- U  
 (a) Flooding (b) Basin system (c) Sprinkler system (d) Drip Irrigation
10. The ratio of the amount of water consumed by the crop to the amount of water supplied through irrigation is CO5- U  
 (a) Delta (b) Discharge (c) Irrigation efficiency (d) none of these

PART – B (5 x 2= 10 Marks)

11. Explain the Hydrological cycle CO1- U
12. What are the parameters that affect the shape and size of runoff? CO1- U
13. A channel is designed for irrigation purpose 23days, 55 cm is needed for water requirement then find find duty value.. CO2- App
14. What are Impounding structures? CO1- U
15. Define micro irrigation? CO1- U

PART – C (5 x 16= 80 Marks)

16. (a) With a minimum materials provided how will you measure the Evaporation in the field and give a detail about the method of study. CO3- Ana (16)
- Or
- (b) To a particular area you are asked to construct the water storing structure which supply the water for agriculture lands discuss in detail what are all the parameters to be considered. CO3- Ana (16)
17. (a) Consider a cloud burst and suggest various parameters to considered in terms of runoff generation CO3- Ana (16)

Or

- (b) What is your view on Chennai floods 2015 and as an water resource engineering what are the flood routing methods you suggest. CO3- Ana (16)
18. (a) The command area of a channel is 6000 hectares. The intensity of irrigation of a crop is 70%. The crop requires 60cm of water in 15 days, when the effective rainfall is recorded as 15 cm during the period. Find  
 (a) the duty at the head of field,  
 (b) the duty at head of channel,  
 (c) head discharge at head of channel. Assume total head losses as 15% CO2- App (16)
- Or
- (b) We build so many structural components for irrigation, is it necessary? What are the advantages and disadvantages of implementing irrigation systems in a country. CO2- App (16)
19. (a) If you asked to construct a dam what are all the structural components will you design at the diversion head structure explain with diagram CO2- App (16)
- Or
- (b) Our country has many type of channels, explain the types also give your idea about which would be the most suitable and sustainable type. CO2- App (16)
20. (a) Based on you observations in the current affairs related to agriculture, what do you know about the current irrigation methods, explain and suggest any improvements that can be made. CO3- Ana (16)
- Or
- (b) Suggest the steps to be taken to bridge the gap between benefactors and designers of irrigation systems. And state its advantages. CO3- Ana (16)

