Reg. No.																

Question Paper Code	13093

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2024

Seventh Semester

Civil Engineering

20CEPC701 - WATER RESOURCE AND IRRIGATION ENGINEERING

Regulations - 2020

Duration: 3 Hours | Max. Marks: 100

PART - A (MCQ) (20 × 1 = 20 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Specific capacity or yield of wells, is generally expressed, as (a) m^3 per sec (b) m^3/hour (c) m^3/hour/m^2 (d) m^3/hour/m^2/m	1	K1	CO1
2.	India ranks _____ in the world in terms of water availability per person per annum: (a) 133 (b) 135 (c) 17 (d) 98	1	K1	CO1
3.	In India, 45% of the total irrigation and------- of domestic water comes from (a) 60% (b) 40% (c) 20% (d) 80%	1	K2	CO1
4.	The formula Q = P - K [1.8T + 32] in which Q is runoff, P is annual rain fall in cm, T is mean annual temperature in centigrade and K is a constant, is known (a) Justin's formula (b) Khosla's formula (c) English formula (d) Vermule's formula	1	K2	CO2
5.	What is the main agenda of the National Water Policy? (a) Recommendations to States (b) Recover Charges (c) Quality Check of Irrigation Water (d) Maintenance of the Irrigation Structures	1	K1	CO2
6.	Perched aquifers are generally found (a) On the surface of the ground (b) Below the surface of the ground but above water table (c) Below the water table (d) All the above	1	K2	CO2
7.	Calculate the delta for a crop, if duty for a base period of 120 days is 1728 hectares? (a) 1.2 m (b) 0.12 m (c) 0.6 m (d) 6 m	1	K2	CO3
8.	Shrouding' is essentially provided in (a) Strainer type wells (b) Cavity type wells (c) Slotted type well (d) All the above	1	K1	CO3
9.	Crop ratio is the ratio of area irrigated? (a) Rabi season to Kharif season (b) Kharif season to Rabi season (c) under perennial crop to total crop (d) under perennial crop to non-perennial crop	1	K2	CO3
10.	Property of earth to allow water to pass through it, is known as (a) Perviousness (b) Porosity (c) Permeability (d) Transmissibility	1	K1	CO4
11.	Which of the following is not a part of diversion headwork? (a) Weir and Barrage (b) Fish – Ladder (c) Slit Excluder (d) Dam	1	K1	CO4
12.	Pick up the correct statement from the following: (a) The water level in a still well, represents the ground water table level (b) The difference between water table level and the water level in a well after pumping, is called depression head (c) The surface of water table surrounding a well during pumping, forms a cone of depression (d) All the above	1	K2	CO4

13.	What type of losses can be mainly avoided by lining the canals? (a) Evaporation Losses (b) Seepage Losses (c) Erosion of Canal bed (d) Discharge Losses at Branch Canals	*1*	*K1*	*CO5*
14.	Distribution mains of any water supply, is normally designed for its average daily requirement (a) 100% (b) 150% (c) 200% (d) 225%	*1*	*K32*	*CO5*
15.	What is the correct formula for uniform coefficient efficiency? (a) N_d = 1- d/D (b) N_d = 1+ d/D (c) N_d = 1- D/d (d) N_d = 1+ D/d	*1*	*K1*	*CO5*
16.	Pick up the incorrect statement from the following. The underground sources of water, is from (a) Wells (b) Springs (c)Infiltration wells (d) Storage Reservoirs	*1*	*K2*	*CO5*
17.	Among the classification of canals based on alignment criteria, identify the canal in which the number of cross drainage works is maximum? (a) Contour canal (b) Side slope canal (c) Detour canal (d) Ridge canal	*1*	*K2*	*CO6*
18.	Most important method for calculating discharge for planning a water supply project, is (a) Velocity area method (b) Weir or spillway method (c) Use of venturi-meter (d) Using power plant consumption	*1*	*K1*	*CO6*
19.	What is relation between Consumptive Irrigation Requirement (CIR), Net Irrigation Requirement (NIR), Field Irrigation Requirement (FIR) and Gross Irrigation Requirement (GIR)? (a) CIR>FIR>GIR>NIR (b) CIR>GIR>FIR>NIR (c) GIR>FIR>CIR>NIR (d) GIR>FIR>NIR>CIR	*1*	*K2*	*CO6*
20.	Surge tanks are used (a) For storage water (b) To increase the velocity in a pipeline (c) As overflow valves (d) To guard against water hammer	*1*	*K1*	*CO6*

PART - B (10 × 2 = 20 Marks)

Answer ALL Questions

21.	Describe about Water Resources in India and Tamil Nadu.	*2*	*K2*	*CO1*
22.	How do you calculate Average Annual Runoff depth?	*2*	*K2*	*CO1*
23.	Distinguish between consumptive use and Delta.	*2*	*K1*	*CO2*
24.	State the principles of Master Plan.	*2*	*K1*	*CO2*
25.	Differentiate between kharif crops & rabi crops.	*2*	*K1*	*CO3*
26.	Give a short note on (i) cash crops (ii) Transpiration ratio.	*2*	*K1*	*CO3*
27.	Outline the forces acting in a gravity dam.	*2*	*K2*	*CO4*
28.	Write the classification of canals.	*2*	*K2*	*CO4*
29.	List out the factors considered in irrigation scheduling.	*2*	*K1*	*CO5*
30.	Explain the term water distribution.	*2*	*K2*	*CO6*

PART - C (6 × 10 = 60 Marks)

Answer ALL Questions

31.	a)	What are the various types of data required for water resources planning and development? Explain in detail.	*10*	*K2*	*CO1*
		OR			
	b) i)	Discuss in detail about the water quality standards for irrigation and drinking water purpose.	*6*	*K2*	*CO1*
	ii)	Write stepwise planning procedure for multipurpose projects.	*4*	*K2*	*CO1*
32.	a)	Briefly explain the methods for determination of consumptive use?	*10*	*K2*	*CO2*
		OR			

	b) i)	Discuss the points about water allocation priorities in National Water Policy.	*6*	*K2*	*CO2*
	ii)	Explain in detail the conjunctive use of surface and Ground water.	*4*	*K2*	*CO2*
33.	a)	After how many days will you supply water to a clay efficient irrigation of the given crop, if (a) Field capacity of the soil is 27 % (b) Permanent wilting point is 14% (c) Density of soil is 1.5gm/cc (d) Effective depth of root zone is 75cm and (e) Daily consumption use of water for the give crop is 11mm	*10*	*K2*	*CO3*
		OR			
	b)	Briefly give a short note on: (i) Duty (ii) Delta (iii) Base Period (iv) Crop Period	*10*	*K2*	*CO3*
34.	a)	How will you design the canal by using Kennedy's and Lacey's Regime theory?	*10*	*K2*	*CO4*
		OR			
	b)	Explain the types of canal escapes with neat sketches and list the factors to be considered in the alignment of canal.	*10*	*K2*	*CO4*
35.	a) i)	Illustrate the favorable conditions for sub-surface irrigation.	*6*	*K2*	*CO5*
	ii)	Describe the modes of applying water to crops with neat sketches.	*4*	*K2*	*CO5*
		OR			
	b)	Explain in detail about the methods of Surface and Sub-Surface irrigation.	*10*	*K12*	*CO5*
36.	a)	Outline about the irrigation management in India and Tamil Nadu.	*10*	*K2*	*CO6*
		OR			
	b)	Summarize the micro irrigation system with their merits and demerits.	*10*	*K2*	*CO6*