Reg. No.															

Question Paper Code	13415

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2025

Seventh Semester

Civil Engineering

20CEPC701 - WATER RESOURCES AND IRRIGATION ENGINEERING

Regulations - 2020

Duration: 3 Hours Max. Marks: 100

PART - A (MCQ) (10 × 1 = 10 Marks)

Answer ALL Questions

		Marks	K – Level	CO
1.	Hydrograph is a graphical representation of (a) surface run off (b) ground water flow (c) rain fall (d) discharge flowing in the river	1	K2	CO1
2.	Irrigation water need= ---------- (a) Consumptive water need-rainfall (b) Crop water need –rainfall (c) Infiltration –rainfall (d) Runoff-rainfall	1	K1	CO1
3.	Which of the following water body contributes maximum to atmospheric moisture: (a) River (b) Ocean (c) Lake (d) Pond	1	K1	CO2
4.	Most of the rainfall in India is caused by which monsoon winds (a) Southeast (b) Northwest (c) Southwest (d) Northeast	1	K1	CO2
5.	The science of artificial application of water to the land is called (a) Crop water (b) irrigation (c) crop management (d) irrigation water	1	K1	CO3
6.	According to Blaney , Cu= (a) K(P/40)(1.8t+32) (b) K(P*40)(1.8t+32) (c) K(P/40)(1.8* 32 t) (d) (P/40)(1.8t+32)	1	K2	CO3
7.	Which of the following is not a part of the diversion head works (a) weir & Barrage (b) fish ladder (c) silt excluder (d) dam	1	K2	CO4
8.	The elementary profile of a dam is (a) Rectangle (b) Triangle (c) Equilateral triangle (d) Right angled triangle	1	K1	CO4
9.	What is the name given to the junction of two streams? (a) Ridge (b) Area of Mixture (c) Merging (d) Area of Mingling	1	K1	CO5
10.	Which of the following type of irrigation methods uses supply ditch, borders, ridges? (a) Check Flooding (b) Basin Flooding (c) Drip Irrigation Method (d) Border Flooding	1	K2	CO6

PART - B (12 × 2 = 24 Marks)

Answer ALL Questions

		Marks	K – Level	CO
11.	Define reservoir.	2	K1	CO1
12.	Classify the causes of floods.	2	K2	CO1
13.	Show the formula for benefit cost ratio.	2	K1	CO2
14.	Summarize about non consumptive use of water with an example.	2	K2	CO2
15.	Define duty.	2	K1	CO3
16.	Interpret the various crop seasons in India? Give examples for each.	2	K2	CO3
17.	Classify the different types of dams.	2	K2	CO4
18.	What is a canal head regulator?	2	K1	CO4
19.	Define canal outlets and list its types.	2	K1	CO5
20.	Describe Lacey’s theory and the three regime conditions.	2	K1	CO5
21.	Recall lift irrigation and explain its primary purpose.	2	K2	CO6
22.	List two benefits of tank irrigation systems.	2	K2	CO6

PART - C (6 × 11 = 66 Marks)

Answer ALL Questions

			Marks	K – Level	CO
23.	a)	Briefly explain about the different types of reservoirs.	11	K2	CO1

OR

b) The average monthly inflow to a reservoir in a dry year is as follows. Uniform discharge from the reservoir is 90 m^3/sec. determine through graphical method *11 K2 CO1*

(i) Live storage capacity of the reservoir

(ii) Gross storage capacity of the reservoir taking dead storage volume to be 25 million cum.

Month	Mean monthly flow (m^3/s)
May	25
June	60
July	190
August	220
September	310
October	180
November	70
December	40
January	145
February	45
March	30
April	20

24. a) Summarize about the National Water Policy adopted in water resource management. *11 K2 CO2*

OR

b) Capital cost of a hydroelectric project is Rs.2.5 crores, annual maintenance cost of the project is Rs.45,000/-, the interest rate is 8% per annum , life of the project is 100 years , power potential is 200KW and power rate is Rs.1.5per KWH. Determine if the project is economically viable. *11 K2 CO2*

25. a) Wheat is to be grown at a certain place; the useful climatologically conditions are given below. Determine the Evapotranspiration and consumptive irrigation requirement of the crop, also determine the field irrigation requirement if the water application efficiency is 80%. Make use of Blaney Criddle equation and crop factor is 0.8 *11 K2 CO3*

Month	Monthly temp. in ^oc averaged over the last 5 years	Monthly % of day time hour of the year	Useful rainfall in cm averaged over the last 5 years
November	18	7.2	1.7
December	15	7.15	1.42
January	13.5	7.3	3.01
February	14.5	7.10	2.25

OR

b) Explain the various irrigation efficiencies under which irrigation performance is evaluated. *11 K2 CO3*

26. a) Describe the forces acting on the gravity dams with its elementary cross section. *11 K2 CO4*

OR

b) Summarize the components of diversion head works with neat sketch. *11 K2 CO4*

27. a) Illustrate briefly the various types of canal linings. *11 K2 CO5*

OR

b) Briefly Summarize about kennedy's theory and its drawbacks. *11 K2 CO5*

28. a) Draw the layout of drip irrigation and explain its components. *11 K2 CO6*

OR

b) Explain the role of water users association in detail. *11 K2 CO6*