R22 Regulation *Subject code:4P6AA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech VI Semester Regular/Supplementary Examinations, April 2026

WATER RESOURCES ENGINEERING - II

(CE)

Maximum Marks: 60 Date:23.04.2026 Duration: 3 hours

Note: **1.This question paper contains two parts A and B.**
2. Part A is compulsory which carries 10 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

Part-A

All the following questions carry equal marks (10X1M=10 Marks)		Marks	CO	Bloom Tx
1.a)	Outline the concepts of mass curve and demand curve	1M	1	2
b)	Compare live storage and dead storage.	1M	1	4
c)	Classify various galleries in gravity dams.	1M	2	4
d)	Define uplift pressure in gravity dam..	1M	2	1
e)	Identify classes of failure of earth dams	1M	3	3
f)	List various types of spillway based on their utility.	1M	3	1
g)	Outline the difference between weir and barrage.	1M	4	2
h)	List various functions of Silt Ejectors.	1M	4	1
i)	Define canal fall and name some falls.	1M	5	1
j)	Discuss the uses of canal modules..	1M	5	6

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	Bloom Tx
2	a) Explain the various factors governing selection of site for a dam. b) Analyse the step wise procedure for estimation of capacity of reservoir using mass curve with a sketch.	5M 5M	1 1	2 4
	OR			
3	a) List various types of reservoirs. b) Classify and explain various types of dams based on various considerations.	5M 5M	1 1	1 4
4	a) Explain in detail about various causes of failure of a gravity dam. b) Design practical profile of a gravity dam with the following data: R.L. of dam base = 1450m, R.L. of F.R.L = 1480.5m, specific gravity of masonry = 2.4, safe compressive stress of masonry = 1200 KN/m^2. Height of waves = 1m.	5M 5M	2 2	2 6

	OR			
5	a) Find the critical height of a low gravity dam made of concrete by taking specific gravity of concrete as 2.4 and allowable compressive stress as 3340 KN/m^2.Assume no uplift and specific weight of water as 9.81 KN/m^3. b) Develop an expression for base width of an elementary profile of gravity dam under stress criterion.	5M 5M	2 2	1 3
6	a) Explain the various criteria for safe design of earth dams. b) Find the discharge over an ogee spillway with coefficient discharge as 2.4 flows at a head of 2m.The length of spillway is 100m and the crest of spillway is 8m above the bottom of approach channel having the same width as that of spillway.	5M 5M	3 3	2 1
	OR			
7	a) Explain the various seepage control measures of an earth dam with sketches. b) Elaborate the Significance of Jump Height Curve and Tail Water Rating Curve in energy dissipation below spillways.	5M 5M	3 3	2 6
8	a) Identify various Causes of failure of Weirs on permeable foundations. Explain them in detail. b) Examine the various limitations of Bligh's creep theory.	5M 5M	4 4	3 4
	OR			
9	a) Explain the Khosla's method of independent variables with sketches. b) Classify and explain the various components of a diversion head work with a sketch.	5M 5M	4 4	2 4
10	a) Develop the relation between sensitivity and flexibility of an outlet. b) Analyse the various functions of head regulator and cross regulators.	5M 5M	5 5	5 3
	OR			
11	a) Explain the various Design principles of trapezoidal Notch Fall. b) Summarize the differences between Aqueduct and Super passage with neat sketches.	5M 5M	5 5	2 2