K. K. Wagh Institute of Engineering Education & Research, Nashik

(An Autonomous Institute From A.Y. 2022-23)

WINTER-2025	
Exam Seat No.:	
Academic Year:2025-2026	Semester:VI
Class:TY	Program:B.Tech
Branch Code:CIV	Pattern:2022
Name of Course:Dams and Hydraulic Structures	Course Code:CIV223011
Max. Marks:60	Duration:2.30 Hrs.

Instructions: Candidates should read carefully the instructions printed on the Question Paper and on the cover page of the Answer Book, which is provided for their use.

1. This question paper contains _02____page(s).
2. Answer to each new question is to be started on a new page.
3. Assume suitable data wherever required, but justify it.
4. Draw the neat labelled diagrams, wherever necessary.
5. The last columns indicates the Course Outcome and level of Blooms Taxonomy of the Question/sub-question.

		Marks	CO
Question No. 1			
1a)	What are Factors governing selection of type of dam?	(6)	CO1
Question No. 2			
2a)	What is High gravity dam? Draw a sketch of High gravity dam	(6)	CO2
Question No. 3			
3a)	Determine the crest level of an ogee spillway for following data. i) Discharge capacity =1500 m^3 / sec. ii) Length of spillway = 110 m iii) River bed level = 500.00 m iv) Maximum water level = 600.00 m v) Coefficient of spillway = 2.225	(8)	CO3
	OR		
3b)	What are four components of the Spillway ? What are their functions?	(8)	CO3
3c)	Calculate the post jump Froude Number and based on it recommend the appropriate Energy Dissipation Device for a Spillway for following input data. i) Q = 3600 m^3 /s ii) Length of Spillway = 160 m iii) Velocity of flow = 50.00 m/s	(8)	CO3
	OR		
3d)	Why Radial gate is preferred in dams ? State any 2 advantages of Radial gate. Draw a neat sketch of Radial gate	(8)	CO3
Question No. 4			
4a)	Derive an equation of Phreatic Line to prove that y = Square root of (S^2+2xs)	(8)	CO4
	OR		

4b)	Differentiate between Rapid Drawdown failure and Steady Seepage failure of an earthen dam.	(8)	CO4
4c)	Classify an earthen dam based on height.	(8)	CO4

OR

4d)	Which are the design investigation executed for Earthen Dam ?	(8)	CO4

Question No. 5

5a)	Design a regime canal using Lacey's theory in loose granular alluvial strata with average sediment size as 0.25 mm to carry a discharge of 125 m^3/sec. Adopt trapezoidal section of 0.5 H: 1V.	(8)	CO4

OR

5b)	Write design steps of canal using Lacey's theory	(8)	CO5
5c)	Classify different types of Cross Drainage Works.	(8)	CO5

OR

5d)	What is diversion head works ? What are its Components? .Show with the help of a sketch.	(8)	CO5

····· End of question paper·····