Reg. No.													

Question Paper Code	11763

B.E. / B.Tech. - DEGREE EXAMINATIONS, APRIL / MAY 2023

Eighth Semester

Civil Engineering

CE8016 - GROUNDWATER ENGINEERING

(Regulations 2017)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Define aquifer.	2,K1,CO1
2.	What is Groundwater potential?	2,K2,CO1
3.	Write the different types of flow condition.	2,K2,CO2
4.	What are well losses?	2, K2,CO2
5.	Mention the necessity of groundwater management.	2,K2,CO3
6.	Define ground water Model Conceptualization.	2,K2,CO3
7.	What is the need of ground water quality standards?	2,K2,CO4
8.	Write a brief note on the origin of ground water.	2,K2,CO4
9.	Why artificial recharge is needed?	2,K2,CO5
10.	What is meant by contamination source inventory?	2,K2,CO5

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	(i) Explain water bearing properties of rock.	7,K2,CO1
		(ii) Discuss the different types of aquifers with neat sketches.	6,K2,CO1
		OR	
	b)	(i) Explain the factors affecting the ground water.	7,K2,CO1
		(ii) Explain about seismic refraction method?	6,K2,CO1
12.	a)	Write in detail about (i) Jacob method, (ii) Slug test, (iii) Theis method.	13,K2,CO2
		OR	
	b)	Write in detail about partial penetration of wells.	13,K2,CO2
13.	a)	Illustrate the components of groundwater balance equation.	13,K2,CO3
		OR	

K1 – Remember; K2 – Understand; K3 – Apply; K4 – Analyze; K5 – Evaluate; K6 – Create

b) Write about Prospects and modern techniques for an optimal groundwater management. *13,K2,CO3*

14. a) Explain the physical, chemical and biological water quality standards for various purposes. *13,K2,CO4*

OR

b) Integrate the Laws and Regulations of ground water. *13,K2,CO4*

15. a) Write about the various recharge structures available for artificial recharge. *13,K2,CO5*

OR

b) Explain the different phenomenon that occurs in the movement of contaminated water. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) (i) Discuss why groundwater conservation is important in these days. *10,K2,CO6*

(ii) Explain effective pumping. List its advantages. *5,K2,CO6*

OR

b) Explain the mathematical model for a dial aquifer system. *15, K2,CO6*