Name: **Enrolment No:**	

UPES

End Semester Examination, May 2025

Course: Applied Hydrogeology **Semester: II**

Program: M.Sc. Applied Geology **Time : 03 hrs.**

Course Code: PEAG 7006 **Max. Marks: 100**

Instructions: Answer all Questions.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Define Darcy's 'law of groundwater flow	**4**	**CO1**
Q 2	Discuss the basic assumptions of steady state groundwater flow	**4**	**CO2**
Q 3	Distinguish between confined and unconfined aquifer	**4**	**CO2**
Q 4	Describe the key features of Hydrograph	**4**	**CO1**
Q 5	List out the key parameters for assessing groundwater quality for agricultural use	**4**	**CO2**

SECTION B
(4Qx10M= 40 Marks)

Q 6	Explain the surface geological method for groundwater potential mapping	**10**	**CO2**
Q 7	Illustrate the groundwater province of India on the basis of geological formations and hydrogeological characteristics	**10**	**CO3**
Q 8	A 30 cm well penetrates 50 m below the static water table. After a long period of pumping at a rate of 1800 lpm, the drawdowns in the well at a 15 and 45 m from the pumped well were 1.7 and 0.8 m, respectively. Compute the transmissivity of the aquifer.	**10**	**CO3**
Q 9	Write a Thiem equation for discharge through a confined aquifer with all assumption **OR** Compute a numerical groundwater flow model describing flow through a porous media	**10**	**CO3**

	SECTION-C **(2Qx20M=40 Marks)**		
Q 10	Explain in detail, why is pollution of groundwater a greater environmental hazard than pollution of surface water?	**20**	**CO4**
Q 11	Analyze and interpret Theis method of unsteady state of flow using curve matching technique OR Develop and interpret modified equation of Theis method in unsteady state flow for large time value	**20**	**CO4**