Name:

Enrolment No:

UPES

End Semester Examination, May 2025

Course: Hydrogeology **Semester: IV**

Program: B.Sc. Geology (H) **Time : 03 hrs.**

Course Code: PEGS 2022 **Max. Marks: 100**

Instructions: Answer all Questions.

SECTION A
(5Qx4M=20Marks)

S. No.		Marks	CO
Q 1	Define the term 'Barometric efficiency'	**4**	**CO1**
Q 2	Illustrate the key difference between steady and unsteady state flow	**4**	**CO2**
Q 3	Distinguish between confined and leaky aquifer	**4**	**CO2**
Q 4	Describe the key features of Hydrograph	**4**	**CO1**
Q 5	List out the key component of hydrological cycle	**4**	**CO2**

SECTION B
(4Qx10M= 40 Marks)

Q 6	Explain the electrical resistivity method for the estimation of thickness of subsurface formations in a horizontal surface	**10**	**CO2**
Q 7	Derive a Thiem equation for discharge through a confined aquifer with all assumption	**10**	**CO3**
Q 8	Examine the Ghyben-Herzberg relationship for seawater intrusion.	**10**	**CO3**
Q 9	Discuss on various artificial recharge techniques for improvement of groundwater resource OR Develop a groundwater flow equation for unsteady state of flow in confined aquifer	**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	Prepare a case study on the quality of groundwater on your native district OR Elaborate the Water quality standards for irrigation water with graphical representation	**20**	**CO4**