جامعة دمياط
Damietta University

Damietta University — 1st Semester — Hydrogeology
Faculty of Science — Code: (ج 404)
Geology Department — Time: 2 Hours
4th Year Examination (2022-2023) — Full Mark: 90 degree

Answer the following questions: (Illustrate with simple sketches)

1) Discuss the following: (30 degree)

a) The interaction between surface water and ground water.

b) How Transmissivity (T) can dictate the shape of the cone of depression?

c) The consequences of Excessive Ground Water Withdrawal.

2) Explain the different types of aquifers? (16 degree)

3) Explain how Darcy determined his equation? Try to rearrange the equation using Transmissivity (T). (20 degree)

4) The following table represents the data of groundwater aquifer. (24 degree)

Transmissivity ft^2/day	Area of discharge well ft^2	Hydraulic conductivity ft/day	Hydraulic gradient	Effective porosity
200000	0.8	10000	1/10000	0.20

Determine the following:

a) The saturated thickness of the aquifer.

b) Darcy velocity for the ground water.

c) The true velocity of the ground water.

d) The amount of ground water discharge flow.

Best regards

Prof. Dr. M. Abdelgalil