



Damietta University  
Faculty of Science  
Geology Department  
4<sup>th</sup> Year Examination

1<sup>st</sup> Semester  
(2022-2023)

Groundwater Geology

Code: ( 406 ج ف )

Time: 1 Hour

Full Mark: 60 degree

Answer the following questions: (Illustrate with simple sketches)

- 1) Discuss the following: (20 degree)
  - a) The interaction between surface water and ground water.
  - b) How Transmissivity (T) can dictate the shape of the cone of depression?
- 2) Explain the different types of aquifers? (16 degree)
- 3) The following table represents the data of groundwater aquifer. (24 degree)

Transmissivity ft <sup>2</sup> /day	Area of discharge well ft <sup>2</sup>	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