

2009-2010  
M.Sc. (I SEMESTER) EXAMINATION  
(APPLIED GEOLOGY)  
HYDROGEOLOGY - I  
(GLM-7006)

Maximum Marks: 35

Duration: Two Hours

Answer all questions.

1. With suitable sketch describe the vertical distribution of sub-surface water. 08

OR

1'. Write notes on the following:

- (a) Hydraulic conductivity
- (b) Intrinsic Permeability
- (c) Renewable and non-renewable groundwater

2. ✓ What do you understand by the term "artificial recharge" of ground water? Discuss various methods of artificial Recharge. 09

3. ✓ Describe Darcy's Law. Also describe the criteria used for validity of Darcy's Law. 09

4. ✓ Explain the surface resistivity method used in groundwater exploration. Also discuss the "Wenner" electrode configuration in detail. 09

OR

4'. Write short notes on the following:

- (a) Resistivity and S P logging
- (b) Gamma - log
- (c) Significance of bore hole logging in water wells.

$$L_{eq} = \frac{L}{\left(\frac{L_1}{L} + \frac{L_2}{L} + \dots + \frac{L_n}{L}\right)}$$

$$R_{eq} = \frac{R_1 L_1 + R_2 L_2 + \dots + R_n L_n}{L}$$

$$K_{eq} = \frac{K_1 L_1 + K_2 L_2 + \dots + K_n L_n}{L}$$