

2023
B.A./B.Sc.
Fifth Semester
CORE – 12
GEOLOGY
Course Code: GLC 5.21
(Hydrogeology)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. Write notes on *any two* of the following: 7×2=14
 - (a) Hydrologic cycle
 - (b) Vertical distribution of subsurface water
 - (c) Interception and infiltration
2. Describe on the geological formations as aquifers. Explain the various types of aquifer. 14

UNIT-II

3. Elaborate on the following: 7×2=14
 - (a) Hydrothermal phenomenon
 - (b) Groundwater in permafrost region
4. Write notes on intrinsic permeability and hydraulic conductivity, laminar and turbulent groundwater flow. 14

UNIT-III

5. (a) Explain borehole logging with special reference to radiation logging. 7
 - (b) Give an account on the role of remote sensing in ground water exploration. 7

6. Explain the principle involved in electrical resistivity method of groundwater exploration. 14

UNIT-IV

7. What are the causes of saline water intrusion into the coastal aquifers? Explain the Ghyben-Herzberg relationship between saline water and fresh water. 14
8. Describe on the quality of groundwater for irrigation purpose. Elaborate on scatter diagram and trilinear diagram by Piper with a neat sketch. 14

UNIT-V

9. Explain the surface and subsurface water interaction. Give a neat labelled diagram on gaining stream, losing stream and disconnected stream. 14
10. Write notes on the following: $7 \times 2 = 14$
- (a) Methods of rain water harvesting
 - (b) Groundwater level fluctuations
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