

Roll No.

Total Printed Pages -7

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**M.Sc. (Fourth Semester)
EXAMINATION, May - June, 2022
GEOLOGY
PAPER THIRD
(HYDROGEOLOGY)**

Time : Three Hours]

[Maximum Marks : 80

Note : Draw neat and well labeled diagram wherever necessary. Attempt all questions as directed.

**(Section - A)
(Objective/Multiple Choice Questions)**

(1 mark each)

Note: Attempt all questions.

Choose the correct answer:

1. The infiltration rate is always:
(A) More than the infiltration capacity
(B) Less than the infiltration capacity
(C) Equal to or less than the infiltration capacity
(D) None of the above

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2. Ghyben- Harzberg Relation is applicable for:
(A) Confined aquifer
(B) Semiconfined aquifer
(C) Unconfined aquifer
(D) all the above
3. When groundwater body is separated from the main ground water by a relative impermeable stratum of small extent, it is called:
(A) Unconfined ground water
(B) Confined groundwater
(C) Perched groundwater
(D) Pressure groundwater
4. Plants whose roots tap the ground water are called
(A) Hydrophytes
(B) Phreatophytes
(C) Halophytes
(D) Xerophytes
5. Fluoride contamination mainly occurs in:
(A) Precambrian crystalline province
(B) Gondwana Province
(C) Deccan Trap Province
(D) Precambrian sedimentary province

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6. Streams which contribute water to the aquifer is known as:
- (A) Influent
 - (B) Effluent
 - (C) Insulated
 - (D) None of these
7. Water quantity pumped per unit drawdown is called:
- (A) Well yield
 - (B) Specific capacity
 - (C) Coefficient of storage
 - (D) All the above
8. Which is the oldest method of turning saltwater into fresh water:
- (A) Crystallization
 - (B) Distillation
 - (C) Filtration
 - (D) Condensation
9. Excessive pumping in relation to recharge can cause;
- (A) The water table decline
 - (B) A cone of depression form
 - (C) The well go dry
 - (D) All the above

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10. In what types of rock do most caves form?
- (A) Granite
 - (B) Shale
 - (C) Limestone
 - (D) Sandstone

Section - B

(Very Short Answer Type Questions)

(2 marks each)

Note : Attempt all questions.

Write short note on :

1. Effective porosity
2. Overdraft
3. Specific yield
4. Perched aquifer
5. Darcy Law
6. Reynolds's number
7. Effluent stream
8. Artesian Aquifer
9. Desalinization
10. Water Logging

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Section - C

(Short Answer Type Questions)

(3 marks each)

Note : Attempt all questions.

Write short notes on (any ten) :

1. Difference between water level and water table
2. Hydro geological cycle
3. Deccan Trap Province
4. Sea water intrusion
5. Conjunctive use of water
6. Reynolds's number
7. Well development
8. Fluoride contamination
9. Suitability of groundwater for agricultural purposes
10. Electricity resistivity to infer groundwater condition
11. Permeability and its determination using tracer test

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Section - D

(Long Answer Type Questions)

(4 marks each)

Note: Attempt all questions.

1. What is water level fluctuation? What are the different factor affects groundwater level fluctuation?

OR

What is water table map? How we can prepare the water table map, explain stepwise.

2. What is groundwater? Describe groundwater occurrence in granitic rock terrain.

OR

What groundwater? Describe groundwater occurrence in basaltic rock terrain.

3. What is aquifer? What are the different factors which affects the aquifer and also describe the various types of aquifers in detail?

OR

What is permeability? Write down factors which affect permeability and explain laboratory methods for the determination of permeability.

4. What is salt-water intrusion? How can we mitigate salt-water intrusion explain in detail?

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OR

What is water logging? What are the indicators of water logging? Explain how we can mitigate water logging problem.

5. What is artificial recharge of groundwater? What are the different factors which control groundwater recharge?

OR

How remote sensing and GIS techniques are useful in groundwater investigation?