

F-7452

Sub. Code

7MGE4E1

M.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Geology

**Elective – GEOLOGICAL, GEOPHYSICAL AND
GEOCHEMICAL EXPLORATION**

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define pitting.
2. Describe RAB drilling
3. What is sampling?
4. What is the use of GPS?
5. State Newton's second Law.
6. Gravity of Earth.
7. Define Geophone.
8. What is the magnetic susceptibility of the magnetite?
9. What is non-significant anomaly?
10. Define-geochemical dispersion

Part B

($5 \times 5 = 25$)

Answer **all** questions choosing either (a) or (b).

11. (a) Describe the difference between large scale and small-scale maps.

Or

- (b) Give a short note on percussion drilling methods.

12. (a) Write a short note on Significance of Geophysical exploration methods.

Or

- (b) Give a note on resistivity methods.

13. (a) Write a note on gravity corrections.

Or

- (b) Write short note on principles of seismic survey.

14. (a) Give a note on Air borne magnetic survey.

Or

- (b) Describe the significance of magnetic prospecting in geology.

15. (a) Write a note on mobility of elements.

Or

- (b) Describe application of geochemistry in Oil prospecting?

Part C

($3 \times 10 = 30$)

Answer any **three** questions.

16. Give a detailed note on Geological mapping and its importance in exploration field?
 17. Explain application of electrical methods in mineral and petroleum exploration.
 18. Discuss about the reflection and refraction seismic survey?
 19. Write in detail about the radioactive prospecting?
 20. Explain geochemical explorations for gold, copper and base metals?
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7MGE4E2

M.Sc. DEGREE EXAMINATION, APRIL 2022

Fourth Semester

Geology

**Elective : HYDROGEOLOGY AND GROUND WATER
MANAGEMENT**

(CBCS – 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A (10 × 2 = 20)

Answer **all** questions.

1. Define aquifer.
2. Define porosity and permeability.
3. Define electrical resistivity.
4. Define logging.
5. List out the different types of well.
6. Define dug well.
7. Define safe yield.
8. Define over draft.
9. What are the BIS standards of cation and anion quality of groundwater?
10. Define water quality.

Part B

($5 \times 5 = 25$)

Answer **all** questions choosing either (a) or (b).

11. (a) Enumerate the origin and occurrence of groundwater in various geological formations.

Or

- (b) Write notes on hydrogeological cycle.

12. (a) Write note on groundwater detection from structural evidences.

Or

- (b) Give note on applications of geophysical methods in groundwater targeting.

13. (a) Describe method of construction of tube well.

Or

- (b) Give short account on jetted well.

14. (a) Describe Chow's method for the estimation of aquifer parameters.

Or

- (b) Write a short note on well design and development.

15. (a) Describe about saline water intrusion.

Or

- (b) Enumerate the physical quality parameters of water.

Part C (3 × 10 = 30)

Answer any **three** questions.

16. Write an essay on Darcy's law and its applications.
 17. Write an detailed account on how electrical resistivity survey is performed for groundwater exploration with neat sketch.
 18. Write an essay on the types of wells.
 19. Write an essay on groundwater provinces of India.
 20. Discuss different methods of graphical representation of groundwater quality data.
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