F–9451

Sub. Code
7MGE4E1

M.Sc. DEGREE EXAMINATION, APRIL 2023

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 trenching.
2. What is the use of Topo sheets?
3. What is resistivity?
4. State Newton's third law.
5. Define Geodesy.
6. Types of seismic wave.
7. Define paleo magnetism.
8. Define half-life period.
9. What are the factors that controlling mobility?
10. Defines threshold value.

Part B (5 × 5 = 25)

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

11. (a) How stratigraphy is used in identification of the ore deposit?

Or

(b) Give a short note on various drilling methods used in geological exploration.

12. (a) Write short note on self-potential method.

Or

(b) Give short note on electrical well logging methods.

13. (a) Describe density logging.

Or

(b) Write short note on sonic logging.

14. (a) Give a note on principles of radioactive prospecting.

Or

(b) Describe application of radiometric logging method.

15. (a) Describe about Geochemical anomaly.

Or

(b) Write a note on Bio chemical Exploration.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Explain geological prospecting methods used in the ore mining.

17. Give detailed accounts on limitations and applications of various geophysical exploration methods.

18. Explain types, propagation and characteristics of seismic waves.

19. Write in detail about the instruments used in Magnetic prospecting.

20. Application of Geochemistry in various geological explorations.

———————

F– 9452

Sub. Code
7MGE4E2

M.Sc. DEGREE EXAMINATION, APRIL 2023

Fourth Semester

Geology

Elective : HYDROGEOLOGY AND GROUNDWATER MANAGEMENT

(CBCS – 2017 onwards)

Time : 3 Hours Maximum : 75 Marks

Part A $(10 \times 2 = 20)$

Answer **all** questions.

1. Define aquitard and Aquifuge.

2. Define confined aquifers.

3. Define resistivity meter.

4. List out the groundwater detecting method.

5. Define artificial packing.

6. List out the recharge method.

7. Define over draft.

8. Define theism method.

9. Define (a) TDS (b) Hardness.

10. List out the physical parameters.

Part B (5 × 5 = 25)

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

11. (a) Describe Darcy's law and its validity of groundwater flow.

Or

(b) Enumerate in about the vertical distribution of groundwater.

12. (a) What are well logging techniques and how are they useful?

Or

(b) Describe about the electrode arrangement in field.

13. (a) Give a brief account on method of sealing of poor quality well.

Or

(b) Write short note on recharge methods.

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

Or

(b) Write short note on hydraulic conductivity below the water table.

15. (a) Describe drinking water quality standards.

Or

(b) Write short note on graphical representation of water quality.

Part C

$(3 \times 10 = 30)$

Answer any **three** questions.

16. Write an essay on hydrologic cycle with net sketch.

17. Write a detail note on application and limitation of geophysical methods in groundwater targeting.

18. Why the spacing of the wells is needed? Explain different methods and need for Artificial recharge.

19. Write an essay on various types of wells.

20. Discuss the physical and chemical characteristics of water in the context of testing the quality of water.

———————