

2023
FYUGP
SEMESTER-1
GEOLOGICAL LABORATORY TECHNIQUES
Paper Code : SEC0105103

Full Marks: 30

Time : 1½ hours

***The figures in the margin indicate
full marks for the questions***

1. **Answer ALL the following questions:** 5×1=5
- (a) Which of the following mineral possess the highest hardness value in the Moh's Scale of Hardness?
 - (i) Calcite
 - (ii) Apatite
 - (iii) Corundum
 - (iv) Fluorite
 - (b) Define bulk density of rock.
 - (c) Acidic water has low pH value (Write TRUE or FALSE).
 - (d) What is streak of a mineral?
 - (e) Define a map.
2. **Answer any FIVE (5) questions from the following:** 5×2=10
- (a) Define a sample. Name two different types of sampling methods.
 - (b) Describe two salient characteristics of hard rock sampling.

Contd.

- (c) What is a Clinometer Compass and for what purpose it is used for?
- (d) What are the conventional sampling tools for loose sediments?
- (e) Define moisture content of rock/soil. Write the mathematical formula used to determine moisture content.
- (f) Give the definition of spot and channel sampling.
- (g) Define turbidity of water. How does turbidity forms in water?
- (h) Write in brief about the total solids (TS) in water.
- (i) What is meant by texture of a rock? Name two textures of metamorphic rock.
- (j) Write briefly on A-horizon of a soil profile.

3. Answer any THREE (3) questions from the following:

3×5=15

- (a) Describe the operational principle of a Schmidt Hammer. What are the specimen requirements for determination of hardness of rocks by using this hammer? (3 + 2)
- (b) What are the common methods of surface sampling? Describe briefly the Channel Sampling method? (2 + 3)
- (c) Write a detailed note on sampling, processing and separation of microfossils in the field and in the laboratory.
- (d) Define borehole logs. Write briefly about the resistivity logs. (1 + 4)
- (e) Write a brief note on the physical properties of soil.
- (f) Write on any five procedures used in map interpretation.

— x —