

**Ph.D. GEOLOGY (PHDGY)**

**Term-End Examination**

**December, 2022**

**RGY-102 : RESEARCH TECHNIQUES IN GEOLOGY**

*Time : 3 hours*

*Maximum Marks : 100*

**Note :** Answer any **five** questions. All questions carry equal marks.

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1. What is geological fieldwork ? Discuss in detail how you would plan and conduct fieldwork in the Himalayan region. 20
2. Discuss various types of sampling methods, with the help of suitable diagrams. 20
3. Describe the basic principles of X-Ray Fluorescence (XRF). Give a neat, well-labelled diagram in support of your answer. 20
4. Explain the principle and working of a petrological microscope with the help of a neat, well-labelled diagram. 20
5. Give an account of the application of remote sensing and GIS techniques in geological research. 20
6. Discuss the methods of collection and preparation of samples for hydrogeological investigation. 20

7. Write short notes on any **two** of the following : *2×10=20*

- (a) Sample preparation for geochemical analysis of rocks
- (b) Reconnaissance survey
- (c) Procedure of documentation of field data in the field diary
- (d) Principle and working of an ore microscope

8. Write short notes on any **two** of the following : *2×10=20*

- (a) Use of GPS in fieldwork
  - (b) Scanning Electron Microscope (SEM)
  - (c) Flame Photometer
  - (d) Sample preparation for coal petrography
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