

G-3/324/21

Roll No.....

### III Semester Examination, April-2021

**M.Sc.**

**GEOLOGY**

**Paper IV**

(Mineral Exploration)

Time : 3 Hours ]

[Maximum Marks : 80

**Note :** All questions are compulsory. Question Paper comprises of 3 sections. **Section A** is objective type/Multiple Choice questions with no internal choice. **Section B** is short answer type with internal choice. **Section C** is long answer type with internal choice.

#### **SECTION 'A'**

#### **(Objective Type Questions)**

Choose the correct answer :

**1 × 10 = 10**

1. The different colours of "Limonite" indicate the presence of :

- (a) Oxides                      (b) Sulphides
- (c) Carbonates              (d) Sulphates

2. Diamond drilling can be used to bore hole in :

- (a) Horizontal direction only
- (b) Vertical direction only
- (c) Horizontal and vertical directions
- (d) Horizontal, vertical and inclined direction

3. Detailed survey for oil and gas is done by :

- (a) Seismic reflection method
- (b) Seismic refraction method

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- (c) Geomagnetic method
  - (d) Gravimetric method
4. Electric profiling method is used to determine :
- (a) Horizontal discontinuity
  - (b) Vertical discontinuity
  - (c) Both horizontal and vertical discontinuity
  - (d) None of the above
5. Sorting of grains is generally carried out by instrument called :
- (a) Jaw crusher              (b) Cone crusher
  - (c) Classifiers              (d) Vibrating screens
6. In terms of electrical conductivity, grainites can be described as :
- (a) Good conductors    (b) Bad conductors
  - (c) Moderate conductors
  - (d) Semi conductors
7. Extensive Dolomitization is a characteristic feature of :
- (a) Molybdenum deposits
  - (b) Copper deposits
  - (c) Gold-silver deposits
  - (d) Lead-zinc deposits
8. The gravity methods can be applied for structural studies in :

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Or

Throw light on various type of logging.

4. What is sampling ? Explain various method of sampling.

Or

Discuss principles and method of ore Reserve Estimation.

5. What is drilling ? Describe various types of drilling with diagram.

Or

Throw light on holistic approach of prospecting.

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- (a) Sedimentary basins only  
(b) Metamorphic basins only  
(c) Igneous and metamorphic basins only  
(d) All of the above
9. Which of the following pairs of elements do not commonly form an association ?  
(a) K-Rb                      (b) Ca-Sr  
(c) Al-Si                      (d) Zr-Hf
10. Gold deposits are related with :  
(a) Assay value  
(b) Churu drilling  
(c) Stromatolitic limestone  
(d) Fanfold

**SECTION 'B'**  
**(Short Answer Type Questions)**

5 × 4 = 20

**Note :** Answer the following questions in 250 words.

1. Discuss about subsurfaces method of prospecting.

Or

Explain in brief about scope of prospecting and exploration.

2. Describe Geochemical prospecting method in brief.

Or

Throw light on general prospecting method depending upon type of ore search.

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3. Explain seismic method of geophysical prospecting.

Or

Throw light on use of computers in prospecting.

4. Discuss about computer based softwares in reserve estimation.

Or

What is ore reserve estimation ?

5. Explain coring and lithological logging.

Or

Discuss about various components of drilling.

**SECTION 'C'**  
**(Long Answer Type Questions)**

10 × 5 = 50

**Note :** Answer the following questions in 500 words.

1. Describe in detail about planning and prospecting program.

Or

Throw light on surface methods of prospecting.

2. Discuss about principles, applications and limitations of geophysical method of prospecting.

Or

Comment in brief :

(a) Stratigraphic prospecting method

(b) Geological prospecting method

3. Explain gravity method of geophysical prospecting in detail.