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**1 SEM TDC GEGL (CBCS) GE 1 (A/B/C)**

**2 0 1 9**

( December )

**GEOLOGY**

( Generic Elective )

Paper : GE-1

Full Marks : 53

Pass Marks : 21

Time : 3 hours

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

Paper : GE-1 (A)

**( INTRODUCTION TO GEOLOGY )**

**UNIT—I**

**( Solar System and Earth)**

( Marks : 9 )

1. Fill in the blanks : 1×2=2

(a) The most abundant light element present in the core is \_\_\_\_\_.

(b) The discontinuity between the crust and mantle is known as \_\_\_\_\_.

( 2 )

2. Write a note on the magnetic field of the Earth. 3
3. Describe about the characteristics of interior of the Earth with neat sketches. 4

UNIT—II

( Principles of Geology )

( Marks : 7 )

4. Fill in the blanks : 1×2=2
- (a) \_\_\_\_\_ proposed the theory of uniformitarianism.
- (b) Rhyolite is a \_\_\_\_\_ rock.
5. Write on any *one* of the following : 5
- (a) Rock cycle
- (b) Different branches of geology

UNIT—III

( Earth's Exogenic Processes )

( Marks : 10 )

6. Fill in the blank : 1
- Disintegration and decomposition together known as \_\_\_\_\_.

7. Describe the different types of weathering and their end products. 4+2=6

Or

Describe the physiographic subdivision of Indian subcontinent. 6

8. What is soil? Discuss in brief about the soil profile. 1+2=3

UNIT—IV

**( Earth's Dynamic and Endogenic Processes )**

( Marks : 9 )

9. Fill in the blanks : 1×2=2

(a) The magnitude of great Assam Earthquake of 1950 was \_\_\_\_\_ in richter scale.

(b) Transform fault occurs in \_\_\_\_\_ plate boundaries.

10. Write short notes on the following (any two) : 3½×2=7

(a) Sea-floor spreading

(b) Types of mountains

(c) Continental drift theory

( 4 )

UNIT—V

( **Genesis of Rock** )

( *Marks : 9* )

11. What is a volcano? Describe the different types of volcanoes with examples. 1+4=5

*Or*

Write a note on physical and chemical properties of magma. 5

12. Write in brief about metamorphism and metasomatism. 2+2=4

UNIT—VI

( **Introduction to Palaeontology** )

( *Marks : 9* )

13. What is an index fossil? Describe the different modes of fossilisation. 1+4=5

14. Discuss in detail the applications of fossils in geological sciences. 4

Paper : GE-1 (B)

( ROCKS AND MINERALS )

UNIT—I

( Marks : 8 )

1. (a) Define mineral. How are they formed in nature? 1+2=3
- (b) Describe five important physical properties of minerals. 5

UNIT—II

( Marks : 9 )

2. (a) What are sial, sima and nife? 1
- (b) How atomic structures, physical properties and optical properties are related to each other? 3
- (c) Describe the various silicate structures of minerals with examples. 5

UNIT—III

( Marks : 9 )

3. Answer question no. (e) and three from the rest :
- (a) What is biomineralisation? 2
- (b) Define ordinary light and polarized light. 2

- (c) Describe the phenomenon of total internal reflection. 2
- (d) What are isotropic and anisotropic minerals? 2
- (e) Define optic axis. Explain with figure. 2+1=3

UNIT—IV

( Marks : 27 )

4. (a) Define rock. Describe rock cycle with suitable examples. 2+3=5
- (b) What is the difference between magma and lava? What are the physical and chemical properties of magma? 1+4=5
- (c) What are primary rocks? Write a brief note on the characteristics of primary rock with examples. 1+4=5
- (d) How sedimentary rocks are formed in nature? Write a note on sedimentary rocks with examples. 2+3=5
- (e) What is metamorphism? Describe the factors of metamorphism. 1+6=7

( 7 )

Paper : GE-1 (C)

( PHYSICS AND CHEMISTRY OF EARTH )

UNIT—I

( Marks : 5 )

1. Name three major earth surface features. 1
2. Write about the origin of oceans. 4

Or

Write about the origin of continents.

UNIT—II

( Marks : 11 )

3. What is isostasy? Write briefly about Aray's or Pratt's theory on isostasy. 5
4. What is elastic rebound theory? 6

Or

What are the earthquake waves? How do they help to study the interior of the earth? 4+2=6

UNIT—III

( Marks : 9 )

5. Briefly explain about different elements (components) of earth's magnetism. 9

Or

What do you mean by solar activity? Explain how solar activity disturbed the magnetic field of the earth. 4+5=9

( 8 )

UNIT—IV

( Marks : 17 )

6. What are stable isotopes? Name different isotopes of oxygen. Explain how oxygen isotopes can be used to know about the palaeoenvironment condition of the earth. 9
7. Write about the geochemical classification of elements with examples. 8

Or

Write on abundance of elements in earth, crust and solar system respectively.

UNIT—V

( Marks : 11 )

8. What is the nuclear waste? Explain how nuclear waste can be disposed by geological manners. 1+5=6
9. What is environmental geochemistry? Write the principles of environmental geochemistry. 5

Or

Write the various effects of lead on human health.

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