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( November )

GEOLOGY

( Major )

Course : 503

( **Economic Geology** )

Full Marks : 48

Pass Marks : 19

Time : 2 hours

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

UNIT—7.1

( **Principles of Economic Geology** )

( Marks : 10 )

1. Define ore and gangue minerals with examples. Describe the cavity filling process of mineralisation.

2+3=5

Or

What are the prerequisites of occurrence of hydrothermal deposits? Describe the process of formation of porphyry copper deposit. 2+3=5

2. Write short notes on any *two* of the following : 2×2=4

- (a) Metallogenic epochs and provinces
- (b) Supergene sulphide enrichment process
- (c) Structural control of ore localization

3. Which of the following is/are true about ore? 1

- (a) Ores are composed of silicates only
- (b) Ore must be available to ore processing for metallurgical purposes
- (c) All ore minerals must contain iron as accessory
- (d) Ore minerals are evenly distributed in the crust



UNIT—7.2

( Types of Mineral Deposits )

( Marks : 15 )

4. Choose the correct answer : 1×2=2

(a) Pegmatitic deposits are essentially a type of

(i) hydrothermal deposits

(ii) metasomatic deposits

(iii) metamorphic deposits

(iv) magmatic deposits

(b) The term 'Algoma' is related to which ore?

(i) Manganese

(ii) Zinc

(iii) Iron

(iv) Chromium

5. What is the purpose of classification of economic mineral deposits? Describe the Bateman's classification of mineral deposits.

2+5=7

6. Write short notes on any *two* of the following : 3×2=6
- (a) Orthomagmatic deposits of chromium
  - (b) Pegmatite and pegmatitic deposits
  - (c) Skarn deposits

UNIT—7.3

( Mineral Deposits of India )

( Marks : 15 )

7. Mention the two important ores of copper with their chemical composition. Describe the origin, mode of occurrence and distribution of copper deposits in India.

2+(2+1½+1½)=7

Or

Mention the chief ores of iron with their chemical composition. Describe the geological distribution of iron ore deposits of Bihar-Orissa belt.

2+5=7

8. What are the raw materials used in cement industry? Describe the geological distribution of these minerals in N-E India.

1+3=4

Or

Name the two important oil fields of Upper Assam. Describe the geology of Digboi oil field.

1+3=4



9. Answer the following as directed : 1×4=4

- (a) Name the host rock for chromite deposits.
- (b) Name one of the offshore petroleum-producing fields of India.
- (c) Name the raw materials used in glass industry.
- (d) Practically all Indian coal deposits seem to be of the (in situ / transported) deposits.

( Choose the correct answer )

UNIT—7.4

( **Mineral Policy** )

( *Marks : 8* )

10. Answer/Write on any *two* of the following : 4×2=8

- (a) Define strategic and critical minerals. Give suitable examples.
- (b) National mineral policy of India
- (c) Substitution as a measure of conservation

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