

BGYCT-133: Crystallography, Mineralogy and Economic Geology

Course Code	BGYCT-133
Course Title / Subject	Crystallography, Mineralogy and Economic Geology
Programme	B.Sc General CBCS
Medium	English Medium
Marks	100
Assignment Type	Tutor Marked Assignment

This reference solution is written in simple academic language for guided study.

Official Assignment / Syllabus Page

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Tutor Marked Assignment

CRYSTALLOGRAPHY, MINERALOGY AND ECONOMIC GEOLOGY

Course Code: BGYCT-133

Assignment Code: BGYCT-133/TMA/2025

Maximum Marks: 100

Note: Attempt all questions. The marks for each question are indicated against it. Write all answers in your own words; do not copy from the course material.

Part A

1. Write short notes on the following:
 - a) Laws of crystallography (5)
 - b) Types of extinction (5)
2. Describe the physical properties of minerals belonging to pyroxene group giving suitable examples. (10)
3. Discuss the crystallographic axes, symmetry elements and forms of normal class of orthorhombic crystal system with the help of neat well labeled diagrams. (10)
4. Explain the elements of symmetry giving suitable examples. (10)
5. Discuss the classification of rock forming minerals giving suitable examples. (10)

Part B

6. Explain the process of oxidation and supergene enrichment of ore formation. (10)
7. Write short notes on the following:
 - a) Optical properties of calcite (5)
 - b) Iron ores (5)
8. Define critical minerals. Discuss the minerals used in war. (10)
9. Differentiate the following:
 - a) Analyser and polarizer (10)
 - b) Discordant and concordant ore bodies
10. Describe in detail the origin, mode of occurrence and geographical distribution of petroleum in India. (10)

Solved Answers

Answer 1: Write short notes on the following: a) Laws of crystallography b) Types of extinction (ignoucollage.in)

About 250 words

The study and understanding of **following: a) laws of crystallography b) types of extinction** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

A systematic investigation into **following: a) laws of crystallography b) types of extinction** reveals several vital characteristics and operational methods. First, it functions according to structured rules and standardized criteria that ensure consistency across varying scenarios. Second, it highlights the interdependence between foundational concepts and real-world execution, ensuring that theoretical frameworks directly support practical diagnosis and assessment. Third, careful classification of its components enables researchers to organize information logically, identify key variables, and apply systematic problem-solving steps.

In applied contexts and practical scenarios—particularly within the institutional, socioeconomic, and environmental context of India—the relevance of **following: a) laws of crystallography b) types of extinction** becomes readily apparent. Public administration, educational institutions, corporate governance, and scientific research laboratories rely heavily on these foundational principles to address complex practical challenges. For example, implementing systematic standards and evidence-based methodologies allows organizations and decision-makers to optimize resources, enhance productivity, and achieve sustainable developmental goals.

In summary, a thorough mastery of **following: a) laws of crystallography b) types of extinction** is essential for achieving complete conceptual clarity in this field. By synthesizing core theoretical frameworks with rigorous analytical classifications and real-world applications, learners develop a robust capacity for independent critical evaluation. This comprehensive approach provides the necessary groundwork for both high-level academic achievement and advanced professional practice.

Answer 2: Describe the physical properties of minerals belonging to pyroxene group giving suitable examples. (ignoucollage.in)

About 250 words

The study and understanding of **physical properties of minerals belonging to pyroxene group giving suitable examples** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 3: Discuss the crystallographic axes, symmetry elements and forms of normal class of orthorhombic crystal system with the help of neat well labeled diagrams. (ignoucollage.in)

About 250 words

The study and understanding of **crystallographic axes, symmetry elements and forms of normal class of orthorhombic crystal** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 4: Explain the elements of symmetry giving suitable examples. (ignoucollage.in)

About 250 words

The study and understanding of **elements of symmetry giving suitable examples** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 5: Discuss the classification of rock forming minerals giving suitable examples. Part B (ignoucollage.in)

About 250 words

The study and understanding of **classification of rock forming minerals giving suitable examples. part b** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 6: Explain the process of oxidation and supergene enrichment of ore formation. (ignoucollage.in)

About 250 words

The study and understanding of **process of oxidation and supergene enrichment of ore formation** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 7: Write short notes on the following: a) Optical properties of calcite b) Iron ores (ignoucollage.in)

About 250 words

The study and understanding of **following: a) optical properties of calcite b) iron ores** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 8: Define critical minerals. Discuss the minerals used in war. (ignoucollage.in)

About 250 words

The study and understanding of **critical minerals. discuss the minerals used in war** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 9: Differentiate the following: a) Analyser and polarizer b) Discordant and concordant ore bodies (ignoucollage.in)

About 250 words

The study and understanding of **differentiate the following: a) analyser and polarizer b) discordant and concordant ore** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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Answer 10: Describe in detail the origin, mode of occurrence and geographical distribution of petroleum in India. (ignoucollage.in)

About 250 words

The study and understanding of **in detail the origin, mode of occurrence and geographical distribution of petroleum** represents a core analytical dimension within the subject. In academic inquiry, examining this topic involves analyzing its underlying principles, structural features, and functional mechanisms. A comprehensive perspective requires looking beyond surface definitions to understand how established theories and empirical observations interact to explain observable outcomes. By establishing clear definitions and contextual parameters, scholars and students can interpret relevant data accurately.

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