



**UNIVERSITY OF MINES AND TECHNOLOGY, TARKWA**  
**SECOND SEMESTER EXAMINATIONS, MAY 2019**

**COURSE NO:** GL 126

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**COURSE NAME:** MINERALOGY AND PETROLOGY

**CLASS:** GD 1

**TIME:** 3 HRS

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Name: \_\_\_\_\_ Index Number: \_\_\_\_\_

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**Section 1: Please answer all questions in this section (10 marks each)**

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1. What in principle should a substance exhibit in order for it to be classified as a mineral?
2. In classifying an environment as an oxidizing or a reducing entity, color of fine-grained sediments can provide valuable clues. Can you please determine say which environments would yield red sediments and black sediments?
3. Minerals have seven (7) distinguish physical features that geologists use to describe them. Please name these physical features.
4. During mineral formation, individual crystals develop well-formed crystal faces that are specific to that mineral. Could you please have the six (6) major crystal form listed?
5. Please list all the positions and the respective common minerals on the Mohr's Scale of Mineral Hardness?
6. In practical terms, please describe how you can estimate the hardness of a given mineral if the only tools you have are your fingernails, a copper penny, a glass plate, and a streak plate.

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**Section 2: Please answer four questions in this section**

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1. a) With an example of mineral that crystallised from magma, give any two characteristics of a mineral.  
b) Identify the following minerals:
  - i) The hardness is 6, contains potassium, it breaks down into clay minerals.
  - ii) Reacts with dilute acids, contains iron, it is metallic, yellow and cubic.
  - iii) Most resistant mineral in most soils.
  - iv) Has perfect cleavage and among the last minerals to crystallise from magma.

**(10 marks)**

2. In the Tarkwaian Banket series, which of the associated pebbles in the conglomerates or breccias would you suggest to have high grade gold deposit. A well-rounded pebbles, well sorted, well packed with siliclastic pebbles or a sub-angular fragment, immature and poorly sorted conglomerates? Please explain why. **(10 marks)**
3. Distinguish between the following: foliation, gneissosity, schistosity, gneiss, shale and mudstone.
4. In determining the Karat of gold, gold traders determine the specific gravity of the precious mineral. Please describe how the specific gravity is determined? **(10 marks)**
5. In crystallography, the term “Pseudomorphism” is used on a mineral masking its outer appearance as a different mineral. True or False? **(10 marks)**

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**Dr D. Oti/ Dr G. M. Tetteh**