

CHUKA



UNIVERSITY

UNIVERSITY EXAMINATIONS

**EXAMINATION FOR THE AWARD OF DEGREE OF BACHELOR OF SCIENCE IN
PHYSICS**

GPHY 111: INTRODUCTION TO GEOLOGY

STREAMS: BSc. PHYSICS

TIME: 2 HOURS

DAY/DATE: FRIDAY 13/12/2024

11.30 A.M. – 1.30 P.M.

INSTRUCTIONS

You should have the following for this examination:

- Answer booklet
- Scientific calculator

Where necessary use the following constants

QUESTION ONE

- a) How does the element of time make geology different from the other sciences, such as chemistry and physics? (2 marks)
- b) Name and describe two broad divisions of geology. (4 marks)
- c) Dinosaurs first appear in the geological record in rocks from about 215 Ma and then most became extinct at 65 Ma. What percentage of geological time does this represent? (3 marks)
- d) Does uniformitarianism mean that conditions on Earth are uniform, and never change? (2 marks)
- e) Summarize the main idea behind plate tectonics. (3 marks)
- f) Explain the Law of Original Horizontality, Law of Superposition and law of Cross-cutting Relationships in relation to geologic time. (3 marks)
- g) How are metamorphic rocks formed (3 marks)

- h) State and explain the several integrated parts (spheres) of the Earth that interact with one another. (3 marks)
- i) State and explain how the three basic rocks are formed (3 marks)
- j) What are minerals (2 marks)
- k) Describe four categories of minerals (4 marks)

QUESTION TWO

- a) How is geology is relevant to everyone's day-to-day life. (4 marks)
- b) Where do Geology work (3 marks)
- c) Describe the Internal Processes and surface processes taking place on planet Earth (4 marks)
- d) By means of a suitable drawing describe the atmosphere, hydrosphere of the Earth (6 marks)
- e) Describe evidence of continental drift (3 marks)

QUESTION THREE

- a) By means of a suitable drawing describe the Lithosphere and, biosphere of the Earth (6 marks)
- b) Describe the principle of catastrophism (2 marks)
- c) Describe four classes of minerals (4 marks)
- d) List 8 elements occur naturally in their native states as minerals. (4 marks)
- e) Describe Sulfide minerals giving four examples (4 marks)

QUESTION FOUR

- a) By means of a suitable drawing describe the rock cycle (4 marks)
- b) Describe the formation of Igneous Rocks and Sedimentary Rocks (4 marks)
- c) Describe Six properties of minerals (6 marks)
- d) Describe three processes that form magma (3 marks)
- e) Describe three factors influence the textures of igneous rocks (3 marks)

QUESTION FIVE

- a) Describe the formation of the solar system (4 marks)
- b) Describe the terrestrial planets and Jovian planets (6 marks)
- c) By means of a suitable diagram describe the structure of the Earth (6 marks)

d) Describe the Geological time scale in terms of Eons, Eras, Periods, and Epochs

(4 marks)

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