



FACULTY OF SCIENCE AND TECHNOLOGY
END OF SEMESTER EXAMINATIONS - MAY 2024/2025

PROGRAMME: BSEM

YEAR/SEM: YEAR 1/SEMESTER 1

COURSE CODE: BSE1103

NAME: ENVIRONMENTAL STRUCTURES & GEO PROCESSES

DATE: 2025-08-12

TIME: 9:00AM-12:00PM

INSTRUCTIONS TO CANDIDATES:

1. Read the instructions very carefully
2. The time allowed for this examination is STRICTLY three hours
3. Read each question carefully before you attempt and allocate your time equally between all the Sections
4. Write clearly and legibly. Illegible handwriting cannot be marked
5. Number the questions you have attempted
6. Use of appropriate workplace examples to illustrate your answers will earn you bonus marks
7. Any examination malpractice detected will lead to automatic disqualification.

DO NOT WRITE ANYTHING ON THE QUESTION PAPER

Section A Answer all questions in this section (compulsory)

Question 1:

- a) How were sea and oceans formed during planet formation? (6 marks) b) State and explain the general principles of relative dating. (5 marks) c) Use diagrams to illustrate the physical distinct layers of the earth. (6 marks) d) Explain how the ages of rocks can be determined. (4 marks) e) Outline the techniques used in absolute dating. (4 marks) f) Illustrate the three types of plate boundary. (6 marks) g) Outline the characteristics of the solar system. (6 marks) h) Why are some planets heavier than others? (3 marks)

Section B Attempt only three (3) questions from this section

Question 1:

- a) Discuss the characteristics of the solar system. (10 marks) b) Distinguish between terrestrial and jovian planets. (10 marks)

Question 2:

- a) With the aid of diagrams, illustrate the earth's interior layers. (10 marks) b) Describe the composition of the following: (10 marks) i) The lithosphere ii) The core iii) The asthenosphere

Question 3:

- a) Write short notes on the elastic rebound theory (10 marks) b) Discuss the different precursors for earthquakes (10 marks)

Question 4:

- a) Explain the following hypotheses; (10 marks) i) Why are some planets heavier than others? ii) Why are some planets hotter than others? b) Describe the story of planet building process using the two distinct models (10 marks)

Question 5:

- a) Discuss the characteristics of the solar system. (10 marks) b) Distinguish between terrestrial and jovian planets. (10 marks)

Question 6:

- a) List three major volcanic hazards and describe how each affects the environment and human settlements. (6 marks)

- b) Identify two major active volcanoes in the East African Rift System. (4 marks)
- c) Suggest four strategies for minimizing risks in volcanic regions. (10 marks)