

NATIONAL UNIVERSITY OF LESOTHO

BSC, BURP & BED EXAMINATIONS

GES 1301: INTRODUCTION TO PHYSICAL ENVIRONMENTAL SYSTEMS

JANUARY 2024

MARKS: 100

DURATION: 3 HOURS

- 
- This paper consists of **THREE PRINTED PAGES**, ensure that you have them all.
  - Each question carries 25 marks. Answer any **FOUR** questions only.
  - Use **CLEAR** sketches and diagrams where appropriate.
- 

**QUESTION 1** (25 marks)

a) Define the following terms as used in Geography: (12)

- Solar System
- Meteorite
- Mantle
- Revolution
- Equator
- Atmosphere

b) Differentiate between the following terms used in Geography: (12)

- Longitudes and Latitudes
- Freshwater and Saline Water
- Aquatic Ecosystems and Terrestrial Ecosystems
- Lentic and Lotic Water Systems
- Lava and Magma
- Hydrosphere and Cryosphere

c) What is the term used to describe the **actual** shape of the earth? (1)

**QUESTION 2** (25 marks)

a) Sketch a fully labelled diagram of The Hydrological Cycle. (15)

b) List and explain any **five (5) processes** occurring in (a) above. (10)

**QUESTION 3 (25 marks)**

Answer the following questions based on Figure 1 below.

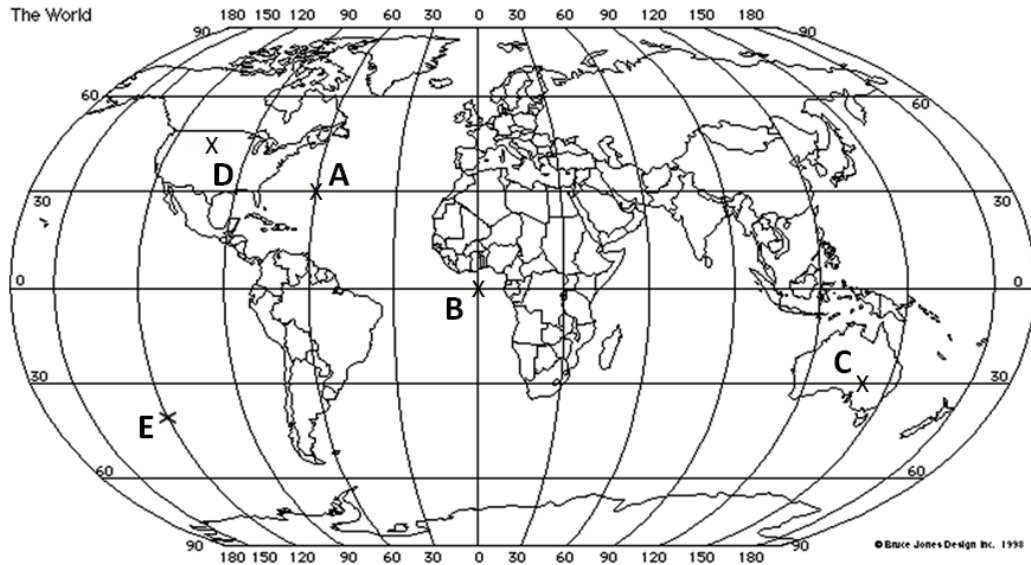


Figure 1

- a) What is the technical name for Figure 1 above, and what is its purpose in Geographical studies? (2)
- b) What are the Geographical terms for: (4)
  - i. The north-south lines
  - ii. The east-west lines
  - iii. The north-south 0 degree line
  - iv. The east-west 0 degree line
- c) Give the location of places marked with a (X) on the Figure 1 (A to E) (10)
- d) Lesotho is Located at Time Zone GMT +2, which is the zone around 30° East meridian. Using the Figure above, what other 2 other countries in Africa and 1 in Europe may be expected share the same Time Zone as Lesotho? (3)
- e) If the time is 10am in Maseru, Lesotho (GMT +2), what is the time at the following locations: (6)
  - i. New York City, NY, USA (GMT -5)
  - ii. Beijing, China (GMT +8)
  - iii. Conakry, Guinea (GMT 0)

**QUESTION 4 (25 marks)**

- a) Draw a fully labelled diagram of the Earth's interior, showing the thicknesses of the different layers. (10)

- b) State 5 benefits that humans obtain from the Lithosphere. (5)
- c) List any 4 consequences of the Earth's tectonic activity. (5)
- d) State the 3 main boundary movements that occur in plate tectonics and give 1 result for each movement. (6)

**QUESTION 5** (25 marks)

- a) Label the four (4) main Physical Environmental Spheres of the Earth as shown in Figure 2 below {(i) to (iv)}. (4)

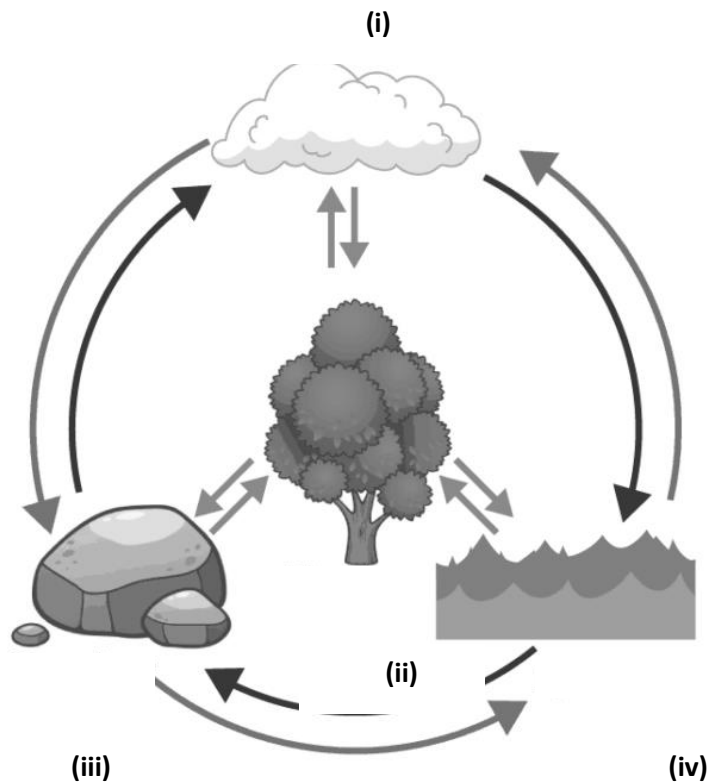


Figure 2. Physical Environmental Spheres

- b) The arrows in Figure 2 above indicate six (6) forms of interactions between all the four (4) different Physical Environmental Spheres. Describe **3 examples for each of the 6 interactions** between the 4 spheres. (18)
- c) How would the **absence** of each of the other three (3) spheres **impact** the sphere labelled **(ii)**? (3)

**QUESTION 6** (25 marks)

- a) Organize the following Levels of Organization in Ecology **starting with the biggest to the smallest.** (7)

Biome  
Biosphere  
Community  
Ecosystem  
Organism  
Population  
Species

- b) Define Ecosystem. (2)  
c) What are the two (2) main components of an ecosystem? (2)  
d) Give two (2) examples of each of the components in (b) above. (4)  
e) Name **and** describe two (2) types of **freshwater aquatic ecosystems.** (4)  
f) State any two (2) types of **terrestrial ecosystems** and give two (2) characteristics of each. (6)