

UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DISCIPLINE OF GEOGRAPHY
EXAMINATION: MAY/JUNE 2012
MODULE NAME & CODE: BIOPHYSICAL ENVIRONMENTS OF SOUTHERN AFRICA,
ENVS210H1

DURATION: 3 HOURS

TOTAL MARKS: 150

INTERNAL EXAMINER: MR J LUTCHMIAH AND MS C CHINZILA
INTERNAL MODERATOR: PROF O MUTANGA

INSTRUCTIONS: THIS PAPER CONSISTS OF TWO PAGES.
USE A SEPARATE ANSWER BOOK FOR EACH SECTION.
SECTION A : BIOGEOGRAPHY
CHOOSE ANY ONE QUESTION FROM 1-3
SECTION B : CLIMATOLOGY
CHOOSE ANY ONE QUESTION FROM 4-6
SECTION C : GEOMORPHOLOGY
CHOOSE ANY ONE QUESTION FROM 7-9

SECTION A : BIOGEOGRAPHY – ANSWER ONE QUESTION

- 1 Wetlands, despite being recognized as natural resources, are experiencing degradation at an unprecedented rate. Explain the significance of wetlands and the threats that can lead to their destruction. (50)

OR

- 2 Savannas, the world's major biome, are the dominant vegetation type in South Africa. Discuss, in detail, the various aspects that characterize this biome. (50)

OR

- 3 The types of vegetation occurring within biomes are very influential in determining land-use and management. In the light of this statement, explain land use and conservation in Grassland and Arid Biomes. (50)

SECTION B : CLIMATOLOGY – ANSWER ONE QUESTION

- 4 Explain how the following phenomena are formed:
- i. Geostrophic winds
 - ii. Gradient winds
 - iii. Cyclostrophic winds
 - iv. Coriolis force
 - v. High pressure and low pressure systems (50)
- 5 Weather predictions and forecast are based on weather observations. Explain, in detail, the various methods that are implemented in the observation process. (50)
- 6 Discuss the processes and conditions required for the development of storm clouds associated with lightning, heavy rain and hail. (50)

SECTION C: GEOMORPHOLOGY – ANSWER ONE QUESTION

- 7 The various forms within channels are influenced by a number of environmental factors. Discuss the five basic forms with particular reference to the conditions that influence their formation. (50)
- OR**
- 8 Rock disintegration is a consequence of the combined action of various processes. Explain, in detail, these processes and subsequent landforms associated with them. (50)
- OR**
- 9 Discuss the various components of slopes and the types of mass wasting associated with them. (50)

UNIVERSITY OF KWAZULU-NATAL
SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DISCIPLINE OF GEOGRAPHY
SUPPLEMENTARY EXAMINATION: JUNE 2012
MODULE NAME & CODE: BIOPHYSICAL ENVIRONMENTS OF SOUTHERN AFRICA,
ENVS210H1

DURATION: 3 HOURS

TOTAL MARKS: 150

INTERNAL EXAMINER: MR J LUTCHMIAH AND MS C CHINZILA
INTERNAL MODERATOR: PROF O MUTANGA

INSTRUCTIONS: THIS PAPER CONSISTS OF TWO PAGES.
USE A SEPARATE ANSWER BOOK FOR EACH SECTION.
SECTION A : BIOGEOGRAPHY
CHOOSE ANY ONE QUESTION FROM 1-3
SECTION B : CLIMATOLOGY
CHOOSE ANY ONE QUESTION FROM 4-6
SECTION C : GEOMORPHOLOGY
CHOOSE ANY ONE QUESTION FROM 7-9

SECTION A : BIOGEOGRAPHY – ANSWER ONE QUESTION

- 1 Biomes are very broad ecological units representing major life zones that extend over large natural areas. Discuss, in detail, the influence of climate and topography on vegetation and human activities within the Grassland biome. (50)

OR

- 2 Wetlands, despite being recognized as natural resources, are experiencing degradation at an unprecedented rate. Explain the significance of wetlands and the threats that can lead to their destruction. (50)

OR

- 3 Discuss the major climatic and ecological variables that shape the vegetation of the Forest biome in South Africa. (50)

SECTION B : CLIMATOLOGY – ANSWER ONE QUESTION

- 4 Discuss the formation of tropical cyclones and their impacts. (50)
- 5 There are various methods that can be used to create a weather forecast and the method a forecaster chooses depends on, among other things, the experience of the forecaster. Discuss the methods that are used to make a weather forecast. (50)
- 6 Tornadoes are one of the most destructive and feared of all atmospheric phenomena and occur in Gauteng, Free State, and certain parts of KwaZulu-Natal. Explain, with examples, the formation and subsequent impacts of tornadoes. (50)

SECTION C : GEOMORPHOLOGY – ANSWER ONE QUESTION

- 7 Using an annotated sketch, describe the basic components of slopes and discuss any two types of mass wasting that may occur on them. (50)

OR

- 8 Rock disintegration is a consequence of the combined action of various processes. Discuss, in detail, these processes and the landforms associated with them. (50)

OR

- 9 Landscapes, according to fluvialist theory, are formed over geological time by the continued work of water. Explain, in detail, the formation of landforms through the processes of fluvial erosion, transportation and deposition. (50)