

**UNIVERSITY OF KWAZULU- NATAL
SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DISCIPLINE OF GEOGRAPHY
EXAMINATION: NOVEMBER 2012
MODULE NAME & CODE: ENVIRONMENTAL SYSTEMS
ENVS120H2**

DURATION : 3 HOURS

TOTAL MARKS: 150

**INTERNAL EXAMINERS: PROF S PROCHES
 DR S PILLAY
 MS C CHINZILA
INTERNAL MODERATOR: PROF O MUTANGA**

ANSWER EACH SECTION IN A SEPARATE ANSWER BOOK

SECTION A : Atmospheric and Hydrospheric Processes (50 MARKS)

ANSWER ANY ONE QUESTION (50 marks)

- 1 Explain global water budget with reference to the Hydrological cycle and types of precipitation. (50)

- 2 The occurrence of a particular type of precipitation is subject to the prevalence of certain conditions. Explain the different types of precipitation with reference to conditions that influence them. (50)

- 3 Discuss the three broad categories of atmospheric gases. (50)

- 4 Discuss the various causes and consequences of global warming. (50)

SECTION B : Biospheric Processes (50 MARKS)

ANSWER ANYONE QUESTION (50 marks)

- 5 Discuss the main types of freshwater environments with reference to the areas in which they occur, threats to their functioning, and the dominant types of organisms living there. (50)
- 6 List the main ways in which human activities are impacting on biodiversity and ecosystem function, in each case providing examples, and indicating the regions where these impacts are most severe. (50)
- 7 Describe food chains as found in terrestrial and marine ecosystems. Compare the ways in which biomass is distributed across trophic levels, and discuss the interactions between these two types of systems. (50)

SECTION C : Lithospheric Processes (50 MARKS)

ANSWER ANYONE QUESTION (50 marks)

- 8 Write an essay outlining the evidence that supports the Theory of Plate tectonics and gives credence to the original ideas proposed by Alfred Wegener in the early 20th century. (50)
- 9 The organic and mineral fractions are two important components of soils. Discuss both these components in detail and show how they impact on soil fertility. (50)
- 10 Several factors contribute to soil formation. Write an essay describing the five recognized factors and assess their relative importance. (50)

UNIVERSITY OF KWAZULU- NATAL
SCHOOL OF AGRICULTURAL, EARTH & ENVIRONMENTAL SCIENCES
DISCIPLINE OF GEOGRAPHY
SUPPLEMENTARY EXAMINATION: NOVEMBER 2012
MODULE NAME & CODE: ENVIRONMENTAL SYSTEMS
ENVS120HS2

DURATION : 3 HOURS

TOTAL MARKS: 150

INTERNAL EXAMINERS: PROF S PROCHES
DR S PILLAY
MS C CHINZILA
INTERNAL MODERATOR: PROF O MUTANGA

ANSWER EACH SECTION IN A SEPARATE ANSWER BOOK

SECTION A : Atmospheric and Hydrospheric Processes (50 MARKS)

ANSWER ANY ONE QUESTION (50 marks)

- 1 Discuss the various types of floods with particular reference to magnitude, climate and environmental impacts. (50)

- 2 The occurrence of a particular type of precipitation is subject to the prevalence of certain conditions. Explain the conditions that influence the formation of the different types of precipitation. (50)

- 3 Discuss, globally, the use of surface and ground water for agricultural, industrial and domestic/municipal activities. (50)

- 4 Discuss the various causes and consequences of global warming. (50)

SECTION B : Biospheric Processes (50 MARKS)

ANSWER ANYONE QUESTION (50 marks)

- 5 Discuss the main types of freshwater environments with reference to the areas in which they occur, threats to their functioning, and the dominant types of organisms living there. (50)
- 6 Write an essay on the animal species included in the human diet. Which species are dominant in meat diets worldwide? What other species are included in notable amounts? What animals species are used for other purposes, such as clothing, safety, company? How do these numbers compare with animal diversity globally? (50)
- 7 What types of factors limit the distribution of organisms at the regional scale? Write an essay highlighting how history and environment combine to produce present-day patterns of species distribution across the world. (50)

SECTION C : Lithospheric Processes (50 MARKS)

ANSWER ANY ONE QUESTION (50 marks)

- 8 Discuss the impacts and consequences of spreading margin type and collision type tectonic movements. (50)
- 9 List and discuss five important characteristics of soils (50)
- 10 With the aid of annotated diagrams, discuss the environments characteristic of glei, laterite and podzol soil regimes. (50)