

**GGH1502**

( 473034) October/November 2011

**WORLD ISSUES: A GEOGRAPHICAL PERSPECTIVE**

Duration 2 Hours

100 Marks

EXAMINERS :  
FIRST  
SECONDMRS R COETZEE  
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This paper consists of 14 pages, including instructions on the use of a mark-reading sheet

**IMPORTANT:**

- 1 After completing this examination paper, you should hand in the following
  - one mark-reading sheet for section A (**insert the mark-reading sheet in the front of your examination book.**)
  - your examination book
- 2 Make sure that your student number and all other required details – including the unique number for the examination paper – are written on both your examination book and on the mark-reading sheet. If you are registered for module **GGH1502**, the unique number is **473034**.
- 3 Marks will be allocated as follows
  - section A 40 marks
  - section B 60 marks
- 4 We recommend that you use the available time as follows
  - Section A (30 multiple-choice questions –  $30 \times 1,22 = 40$  marks) 40 minutes. It is therefore of extreme importance that you do not spend too much time on any one of the questions
  - Section B (four questions) 80 minutes
- 5 Read the instructions at the beginning of each section and follow them carefully

**[TURN OVER]**

**SECTION A****Instructions**

- Answer all the questions.
- Use an HB pencil to mark your answers on the mark-reading sheet
- Remember to enter your student number and the unique number of the examination paper on the mark-reading sheet

**Questions**

1 Which **two** of the following statements are **true**?

- (a) The oceans occupy 10% of the earth's surface area and contain 20% of its water
- (b) The oceans are big enough to dilute pollutants
- (c) Coastal habitats are increasingly threatened by human activities
- (d) Oceans play a fundamental role in the functioning of climate
- (e) Most of the pollutants that end up in the oceans are from point sources

The **correct** combination of alternatives is

- (1) (a) and (c)
- (2) (b) and (d)
- (3) (b) and (e)
- (4) (c) and (d)
- (5) (d) and (e)

2 Which **two** of the following statements about wetlands are **false**? Wetlands

- (a) serve as permanent and indestructible water storages
- (b) have very high biological productivity
- (c) provide a habitat for plants but not for animals
- (d) have an impact on the hydrology of catchments
- (e) function as enormous water filters

The **correct** combination of alternatives is

- (1) (a) and (b)
- (2) (a) and (c)
- (3) (a) and (d)
- (4) (b) and (c)
- (5) (c) and (d)

**[TURN OVER]**

3 Which **two** of the following statements about desertification are **true**? Desertification

- (a) occurs only in southern Africa
- (b) can be reversed by means of appropriate agricultural techniques
- (c) refers to the inability of the soil to maintain its levels of biomass production
- (d) is only limited to arid regions of the world
- (e) is always attributable to natural causes

The **correct** combination of alternatives is

- (1) (a) and (b)
- (2) (a) and (c)
- (3) (a) and (d)
- (4) (b) and (c)
- (5) (c) and (d)

4 Which **one** of the following pollutants common to coastal waters is non-biodegradable?

- (1) sewage
- (2) plastic
- (3) oil
- (4) fertilisers
- (5) domestic waste

5 The fragmentation of biological habitats

- (1) reduces the danger of fire damage
- (2) reduces the danger of invasion by other species
- (3) limits the normal dispersion and colonisation of species
- (4) means that more species can be supported per unit area
- (5) reduces the risk of species extinction

6 Which **one** of the following biomes is particularly threatened by deforestation?

- (1) pampas grasslands
- (2) savannah forest
- (3) boreal forests
- (4) tundra forest
- (5) tropical rainforests

7 In which **one** of the following parts of the world is the collection of fuel wood the **prime cause** of the degradation of wetlands?

- (1) developed countries
- (2) Europe
- (3) developing countries
- (4) the USA
- (5) climatologically moderate parts of the world

**[TURN OVER]**

- 8 The dumping of waste in the oceans is **problematic** because
- (1) waste cannot be diluted by the ocean waters
  - (2) there are no conventions that regulate the dumping of waste in the oceans
  - (3) the oceans cover a relatively small part of the earth's surface
  - (4) certain types of waste remain in the ocean waters for several decades and even Millennia
  - (5) it can disrupt ocean currents
- 9 Which **one** of the following waste substances **most commonly** pollutes water in wetlands in developing countries?
- (1) radioactive material
  - (2) heavy metals
  - (3) industrial chemicals
  - (4) sewage
  - (5) poisonous substances
- 10 Which **one** of the following statements about biodiversity is **true**?
- (1) Natural circumstances can never lead to a loss of biodiversity
  - (2) The removal of a few species from the food chain does not have serious consequences for biodiversity
  - (3) By now, biological science has uncovered all the species that ever lived on Earth
  - (4) Unsustainable institutional systems can promote biodiversity
  - (5) More than half of all species live in the moist tropical forests
- 11 The transformation of arable or habitable land into desert as a result of climate change and destructive land use is referred to as
- (1) deforestation
  - (2) desertification
  - (3) soil erosion
  - (4) acid rain
- 12 Which tropical rainforest in the southern region of the Sahel was severely impacted upon as a result of an increase in population numbers and agricultural activities?
- (1) Nigerian tropical rainforest
  - (2) Sahel tropical rainforest
  - (3) Baben Rafi rainforest
  - (4) Ryutaro rainforest

[TURN OVER]



Figure 1 Drought stricken areas

13 Which of these regions in Figure 1 would you describe as drought-stricken?

- (1) 1 and 5
- (2) 1 and 2
- (3) 3 and 4
- (4) 3 and 5

14 A freighter leaving a port in the Oakland channel hit the San Francisco Bay Bridge and leaked oil into the Bay. Subsequently the oil spill

- (a) spread to the south due to the influence of the tides, and then also spread to the north and west as a result of the changing of the tides
- (b) affected San Francisco's coastline from San Pablo beach to Pacifica beach
- (c) spread to the east due to the influence of the tides
- (d) affected the coastal shores from Point Reyes beach to Pacifica beach
- (e) spread to the Atlantic Ocean

The **correct** combination of alternatives is

- (1) (a) and (b)
- (2) (c) and (d)
- (3) (a) and (d)
- (4) (d) and (e)
- (5) (b), (c) and (e)

- 15 Which one of the following statements reflects our current perception regarding our oceans?
- (1) The dumping of waste is problematic as it disrupts ocean currents
  - (2) Conventions regulating the dumping of waste into the oceans are unnecessary
  - (3) The ocean is huge and can absorb any amount of waste
  - (4) Oceans cover a relatively small part of the earth's surface
- 16 The oceans occupy \_\_\_\_\_ of the earth's surface and contain \_\_\_\_\_ of the earth's water
- (1) 50%, 100%
  - (2) 71%, 97%
  - (3) 97%, 71%
  - (4) 75%, 50%
- 17 Which one of the following statements regarding the world's oceans is **correct**?
- (1) The oceans occupy 50% of the earth's surface and contain 50% of the earth's water
  - (2) The oceans play a minor role in the functioning of climate and supply people with little food or other resources
  - (3) Human activities do not threaten coastal habitats such as mangroves and salt marshes.
  - (4) Most ocean pollution is caused by land-based pollution sources
- 18 The Rietvlei Dam rehabilitation programme is a very good example of conservation on a \_\_\_\_\_ scale
- (1) global
  - (2) national
  - (3) regional
  - (4) local
- 19 The main importance of the Rietvlei Dam is that it \_\_\_\_\_
- (1) supplies a habitat for a large variety of birds and mammals
  - (2) promotes nature conservation in Pretoria
  - (3) supplies drinking water to the city of Pretoria
  - (4) promotes tourism in the Gauteng Province
- 20 A source of pollution such as an animal feedlot is referred to as a \_\_\_\_\_ source
- (1) non-point
  - (2) point
  - (3) defined
  - (4) controlled

- 21 A zone in which the loss of vegetation resources are outweighed by the advantages of a predictable water supply, is referred to as a
- (1) piosphere
  - (2) biosphere
  - (3) overcultivation
  - (4) hydrosphere
- 22 The Rietvlei Nature Reserve management uses to identify plants and to keep up to date regarding the burning of grassland and the management of the reserve
- (1) road maps, photographs
  - (2) resource maps, statistics
  - (3) GIS, statistics
  - (4) statistics, photo cadastral map
  - (5) aerial photographs, topographical maps
- 23 Waste is one of South Africa's biggest problems. South Africans generate approximately of litter and of packaging material per year
- (1) 200 000 kg, 1,3 million kg
  - (2) 200 000 tonnes, 1,3 million tonnes
  - (3) 100 000 tonnes, 200 000 tonnes
  - (4) 400 000 kg, 5 million tonnes
- 24 An undesirable or superfluous by-product, emission, or residue of or from any process or activity, that has been discarded or has been accumulated or stored for the purpose of discarding or processing it, is defined as
- (1) cut grass
  - (2) recycled material
  - (3) plastic
  - (4) waste
- 25 In order to reduce waste in South Africa, we need to
- (1) burn all waste
  - (2) dump the waste into the ocean
  - (3) bury the waste and seal it underground
  - (4) send all waste to a dumping ground in the desert
  - (5) reduce, reuse and recycle

[TURN OVER]

- 26 The waste that we generate ends up in a landfill. Which of the following statements regarding landfills and their impact are **true**?
- (a) The location of a landfill site is associated with social problems
  - (b) Landfill sites are not associated with any groundwater pollution
  - (c) Landfill sites have an economic impact as they are expensive
  - (d) No noise pollution is caused by landfill sites, as most of these sites are not situated near any people

The **correct** combination of alternatives is

- (1) (a) and (c)
- (2) (a) and (d)
- (3) (b) and (c)
- (4) (c) and (d)
- (5) (a), (b), (c) and (d)

**Study the following figures and answer the questions that follow.**



Figure 2 Biome

27 Which biome is presented in figure 2?

- (1) fynbos/chaparral
- (2) savannah
- (3) desert
- (4) tundra

[TURN OVER]





Figure 3 Biome

28 Which biome is presented in figure 3?

- (1) fynbos/chaparral
- (2) savannah
- (3) desert
- (4) tundra



Figure 4 Biome

29 Which biome is presented in figure 4?

- (1) fynbos/chaparral
- (2) savannah
- (3) desert
- (4) tundra

[TURN OVER]



Figure 5 Biome

30 Which biome is presented in figure 5?

- (1) fynbos/chaparral
- (2) savannah
- (3) desert
- (4) tundra

**[TOTAL FOR SECTION A: 40]**

**[TURN OVER]**

**SECTION B****ANSWER ALL THE QUESTIONS****Question 1**

Study figures 6 and 7 and then answer the questions below

**Figure 6. Biome most affected by human development**



**Figure 7 Agricultural change in Sumbawa Besar in Indonesia (Bluegum pictures 1995)**

[TURN OVER]

- 1.1 Study **figure 6** and name the countries and type of biome most affected by human development (4)
- 1.2 Study **figure 7** and explain how this area has been affected by agricultural changes (1)
- 1.3 Explain how agricultural changes can lead to losses in biodiversity (10)
- (Length guideline approximately 200 words) [15]

## Question 2

Read the following case study and then answer the questions below

### Rietvlei Dam is toxic

The health risk associated with using untreated water from the Rietvlei Dam for domestic, agricultural or recreational purposes could be unacceptably high

According to the report, the **source** of the pollution – wastewater from sewage treatment plants and informal settlements – runs from the catchment area into the stream that enters the Rietvlei Nature Reserve. Farms, industries, landfill sites and illegally dumped pesticides are additional main causes of pollution of the Rietvlei Dam

One of the possible sources of chemical residues – especially lindane, an insecticide, and DDT, a pesticide – can be traced to a farm near the reserve. The Kempton Park industrial area is indicated as contributing to the pollution downstream

The Rietvlei Nature Reserve, which is part of a wetland biome, is not only an urban nature reserve, but accounts for 27% of the Pretoria metropolis' water resources. A report on the quality of the water clearly indicates the negative impact the water could have on the people and environment of Centurion and Pretoria

This report states that high levels of oestrogen present in the water is one of the main causes for concern, since this could lead to abnormal changes in the reproductive systems of both people and animals. These findings are based on the observation of defects in fish, frogs, snails, mice and eland in the Rietvlei Nature Reserve and the Rietvlei Dam. Effects include an unbalanced sex ratio in catfish, the calcification of testes in eland, and a general reduction in biodiversity

Classify the impacts associated with the construction of the Maguga Reservoir into the two broad categories, namely environmental impacts and social impacts. Draw a table to illustrate your answer

A possible solution to this problem would be the removal of chemicals and hormones by means of the Rietvlei water treatment facilities, which would render the water safe for use

(Source: Adapted from [www.centurionnews.co.za/artikel.asp?nID=832](http://www.centurionnews.co.za/artikel.asp?nID=832))

[TURN OVER]

- 2 1 List five sources responsible for the pollution of the Rietvlei Dam wetland (5)
- 2 2 Identify and explain the impacts of pollution on the Rietvlei Dam wetland and surrounding area, and a possible solution to the problem (3)
- 2 3 Explain the function of wetlands and why the conservation of wetland ecosystems is so important (7)
- (Length guideline approximately 200 words) [15]

**Question 3**

- 3 1 Describe the formation of acid rain and the environmental impacts associated with it (5)
- 3 2 Explain why acid rain is not evenly distributed across the world Use a basic drawing/sketch to illustrate your answer (10)

(Length guideline approximately 200 words)

[15]

**Question 4**

Study **table 1** and then answer the following questions

**Table 1: Soil losses for different crops and cultivation practices in the humid zone of North-east Brazil (Middleton 2008)**

Crop and cultivation practice	Soil loss (t/ha/year)
Cotton planted down slope	32
Cotton planted across-slope	13
Mixed cotton, maize and beans planted across-slope	24
Mixed cotton, maize and beans planted across-slope with herbaceous anti-erosion strips	15
Mixed maize and beans planted across-slope	13
Beans planted across-slope	12
Maize planted down slope	10
Maize planted across-slope	11
Permanent planted pasture	1
Bare soil	94

[TURN OVER]

- 4 1 Arrange the different crop and cultivation practices in table 1 from the highest to the lowest value of soil loss per hectare per year (5)
- 4 2 Describe the trend that you identified from table 1 (2)
- 4 3 Explain the impact of humans on soil and how they contribute to soil erosion (8)
- (Length guideline approximately 200 words) [15]

**[TOTAL FOR SECTION B: 60]**  
**[TOTAL FOR PAPER: 100]**

**PART 1 (GENERAL/ALGEMEEN) DEEL 1**

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For use by examination invigilator  
 Vir gebruik deur eksamenopsiener

**IMPORTANT**

**BELANGRIK**

- USE ONLY AN HB PENCIL TO COMPLETE THIS SHEET
- MARK LIKE THIS
- CHECK THAT YOUR INITIALS AND SURNAME HAS BEEN FILLED IN CORRECTLY
- ENTER YOUR STUDENT NUMBER FROM LEFT TO RIGHT
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- CHECK THAT ONLY ONE ANSWER PER QUESTION HAS BEEN MARKED
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**PART 2 (ANSWERS/ANTWOORDE) DEEL 2**

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**Specimen only**