



Lesson Description

In this lesson we:

- Work through questions relating to Geomorphology from the Paper 1 Exemplar 2014.

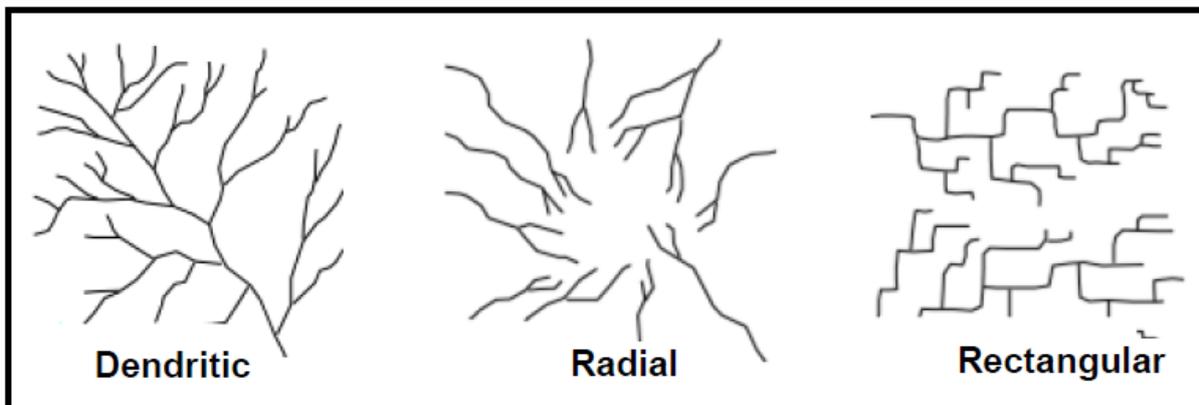


Test Yourself

Question 1

(Adapted from Exemplar 2014, Paper 1, Question 1.2)

Study the drainage patterns in FIGURE 1. Indicate to which drainage pattern each of the following descriptions refers. You may use the same answer more than once.



[Source: www.tulane.edu]

- 1.1 Resembles the branches of a tree
- 1.2 Forms on rocks that have many joints and faults
- 1.3 The main stream has many 90° angles along its course
- 1.4 This pattern forms on rocks that have a uniform resistance to erosion
- 1.5 Streams flow away from a central point
- 1.6 The tributaries join the main stream at acute (small) angles
- 1.7 Only forms on massive igneous rocks
- 1.8 The tributaries join the main stream at a 90° angle

(8 x 1) (8)

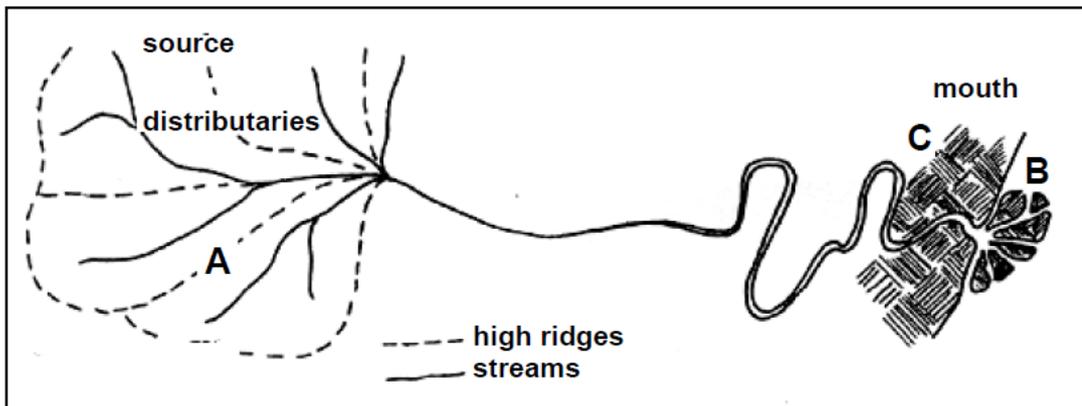


Exam Questions

Question 1

(Adapted from Exemplar 2014, Paper 1, Question 1.5)

FIGURE 1 is a sketch of a river system.



[Source: www.stevekluge.com]

- 1.1 Name the high ridge labelled A. (1 x 1) (1)
- 1.2 What purpose does the high ridge (A) serve? (1 x 2) (2)
- 1.3 Explain TWO natural factors that could influence the stream flow of the river system. (2 x 2) (4)
- 1.4 Explain the formation of the delta at B in FIGURE 1.5. (2 x 2) (4)
- 1.5 State TWO advantages of farming in area C. (2 x 2) (4)

Question 2

(Adapted from Exemplar 2014, Paper 1, Question 1.6)

Read the case study on the Umgeni River in FIGURE 2.

UMGENI RIVER 'ONE OF DIRTIEST' IN SA

7 June 2013
By Tony Carnie

Durban – The Umgeni River is one of the dirtiest rivers in the country, with recent studies showing proof of cholera, shigella, salmonella and other harmful viruses and bacteria at every sampling point between the Inanda Dam and Blue Lagoon in Durban.

The release of the study comes after the city's health unit has raised the alarm over a suspected outbreak of diarrhoea in Durban after two children died and more than 150 people were hospitalised in the past three months.

Though they do not pinpoint the exact pollution sources, the researchers suggest that the most likely sources of the viruses and bacteria in the Umgeni are inadequate municipal sewage treatment and run-off from informal houses close to the river.

'No wastewater treatment is provided and raw sewage enters the rivers and streams directly. Because of a lack of infrastructure in some settlements, the residents are often forced to inhabit river banks ... People living in these areas often utilise the contaminated surface water for crop irrigation, recreation and domestic and personal use such as for washing, drinking water and cooking without prior treatment.'





GEOGRAPHY

Grade 12

The 230 km Umgeni River had been chosen for the study because it is the primary source of water for more than 3,5 million people in an area which generates almost 65 per cent of the provincial gross domestic product.

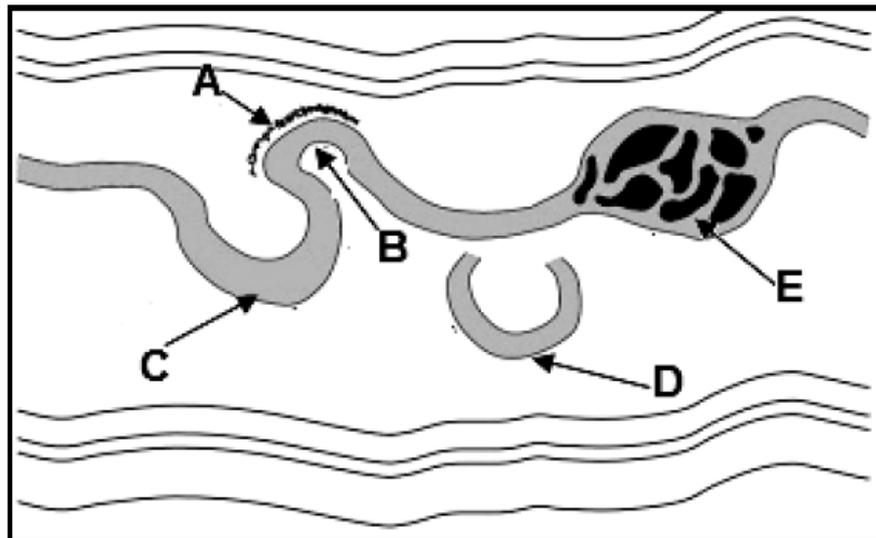
[Source: Mercury]

- 2.1 Name the human activity that is polluting the Umgeni River. (1 x 1) (1)
- 2.2 What evidence suggests that the Umgeni River is dirty? (1 x 2) (2)
- 2.3 State the negative impact of the dirty water on the quality of life of people living in the area. (2 x 2) (4)
- 2.4 Suggest strategies that could be put in place to reduce the negative impact of humans on the Umgeni River. (4 x 2) (8)

Question 3

(Adapted from Exemplar 2014, Paper 1, Question 2.2)

Refer to FIGURE 3 showing fluvial landforms and answer the questions that follow.



[Source: www.easymapwork.blogspot.com]

- 3.1 Name the outer bank of the river labelled A. (1 x 1) (1)
- 3.2 Does the inner bank (B) of a river experience more EROSION or more DEPOSITION? (1 x 1) (1)
- 3.3 Name the fluvial feature labelled C. (1 x 1) (1)
- 3.4 What is feature D called after it dries up? (1 x 1) (1)
- 3.5 Name the stream channel pattern labelled E. (1 x 1) (1)
- 3.6 Is feature E formed by EROSION or DEPOSITION? (1 x 1) (1)
- 3.7 Is feature C generally found in the UPPER or LOWER course of a river? (1 x 1) (1)

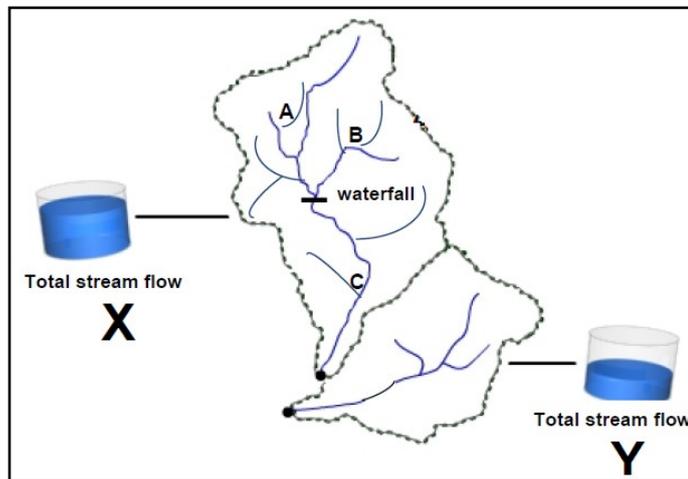




Question 4

(Adapted from Exemplar 2014, Paper 1, Question 2.5)

FIGURE 4 illustrates two drainage basins.



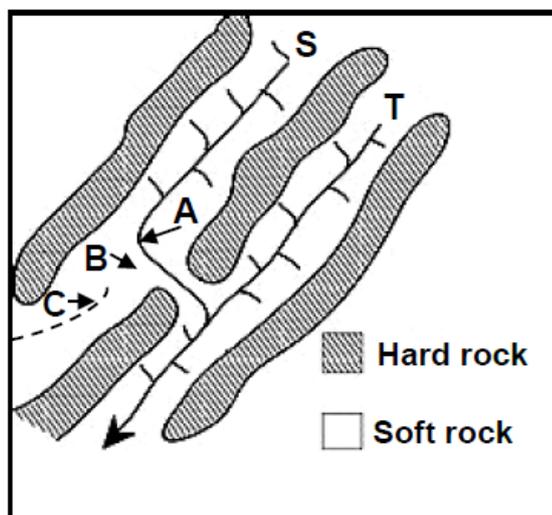
[Source: Comet Program, Basic Hydro Science]

- 4.1 Define the term drainage basin. (1 x 1) (1)
- 4.2 Define the term drainage density. (1 x 1) (1)
- 4.3 Which drainage basin, X or Y, has a greater drainage density? (1 x 2) (2)
- 4.4 Give ONE reason for your answer to QUESTION 4.3. (1 x 2) (2)
- 4.5 Discuss TWO factors that could result in a drainage basin having a high drainage density. (2 x 2) (4)
- 4.6 Explain the impact of urban development at points A, B and C on the drainage density of drainage basin X. (2 x 2) (4)

Question 5

(Adapted from Exemplar 2014, Paper 1, Question 2.6)

FIGURE 5 illustrates river capture.



[Source: www.wikipedia.org]





GEOGRAPHY

Grade 12

- 5.1 Is river S or river T the captor stream? (1 x 1) (1)
- 5.2 Name the features of river capture that developed at points A, B and C. (3 x 1) (3)
- 5.3 Give TWO possible reasons why the tributary of river T eroded through the watershed. (2 x 2) (4)
- 5.4 Write a short paragraph in which you explain the impact of river capture on the sustainability of the river as an ecosystem. (4 x 2) (8)

