



# basic education

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Department:  
Basic Education  
**REPUBLIC OF SOUTH AFRICA**

## **NATIONAL SENIOR CERTIFICATE**

**GRADE 10**

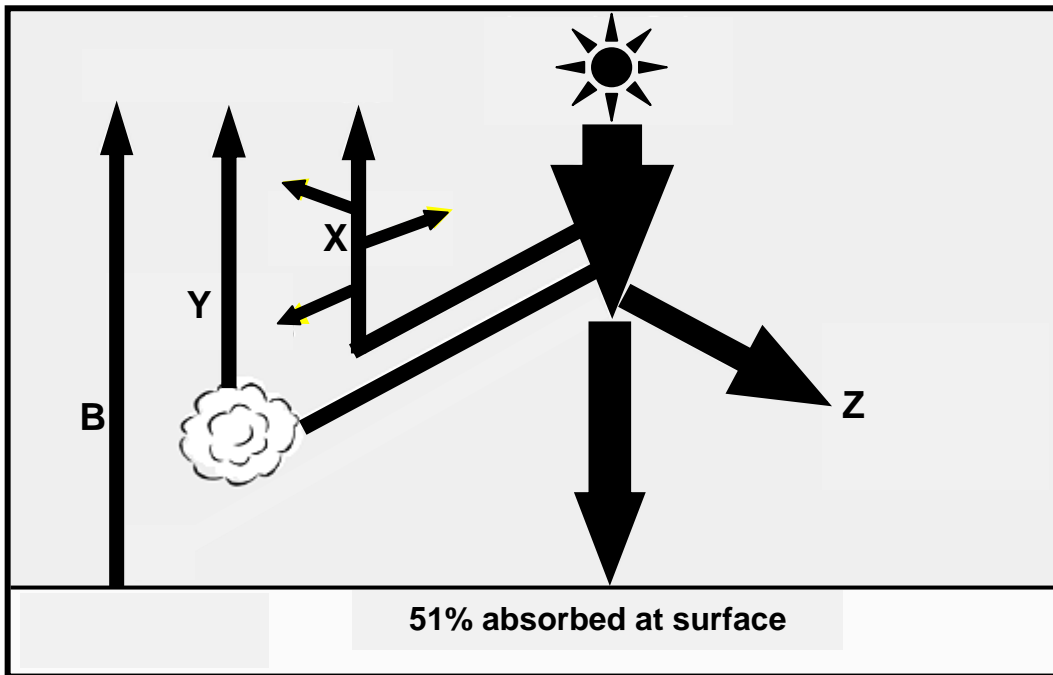
**GEOGRAPHY P1**

**EXEMPLAR 2012**

**ANNEXURE**

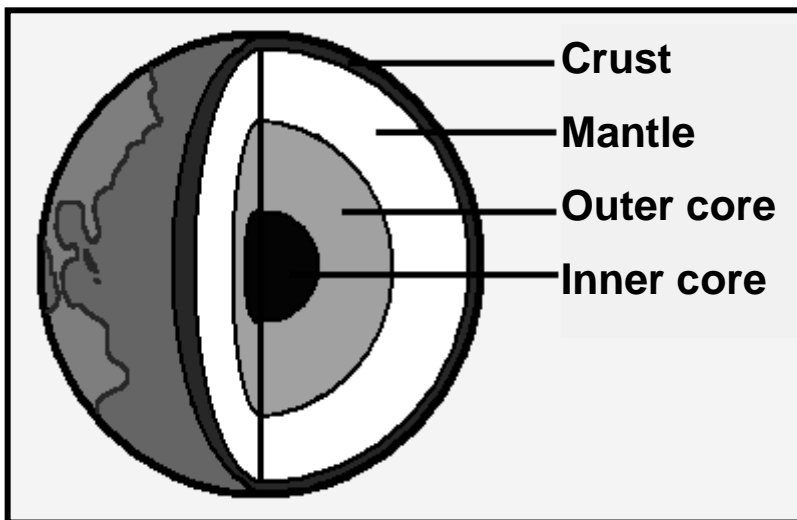
**This annexure consists of 12 pages.**

**SOURCE 1.1**



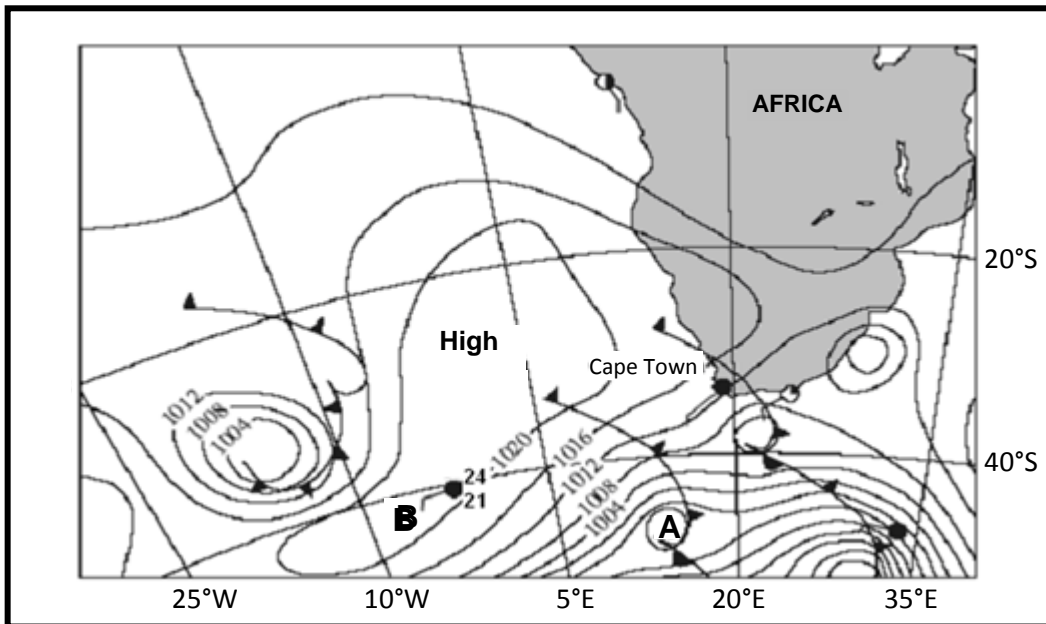
[Source: Google Image]

**SOURCE 1.2**



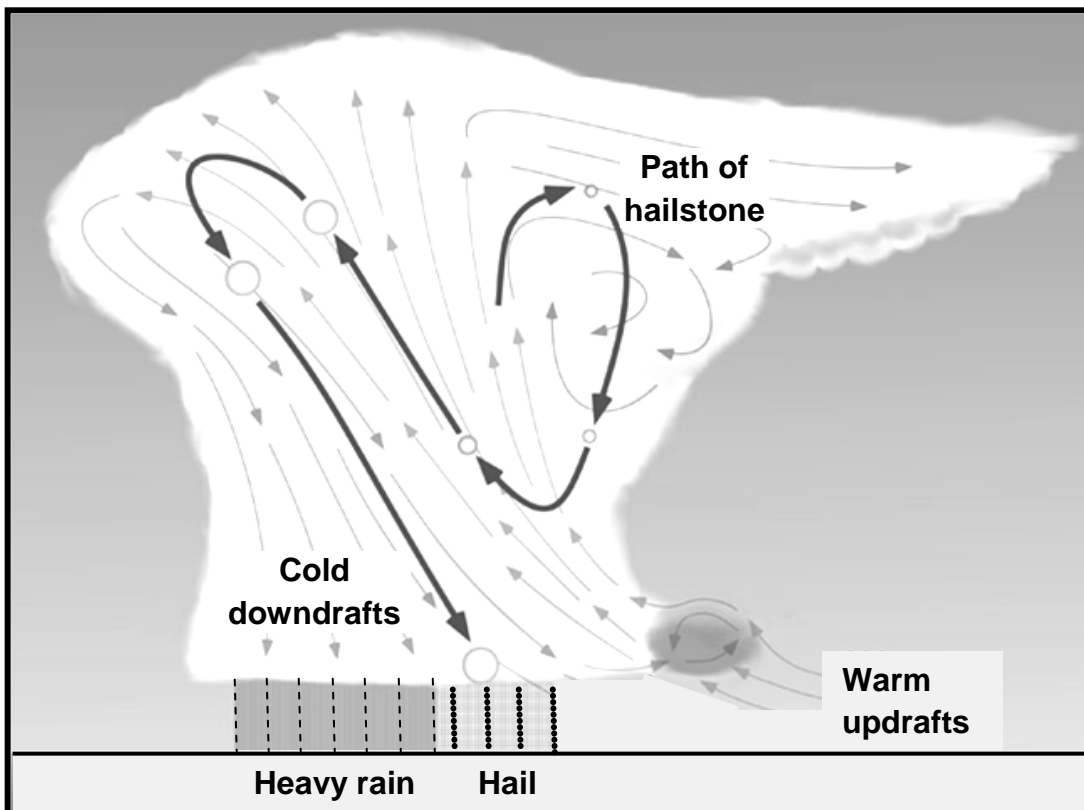
[Source: Google Image]

**SOURCE 1.3**



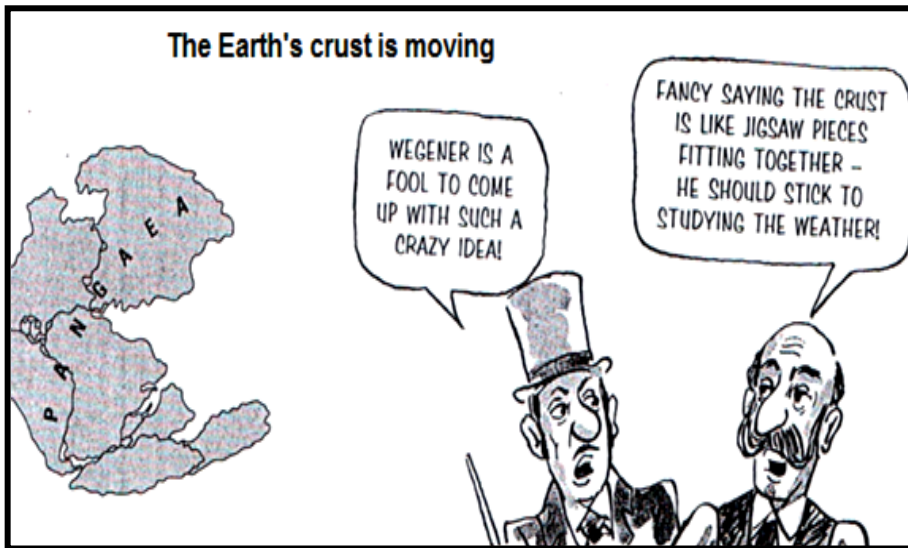
[Source: SA Weather Service]

**SOURCE 1.4**



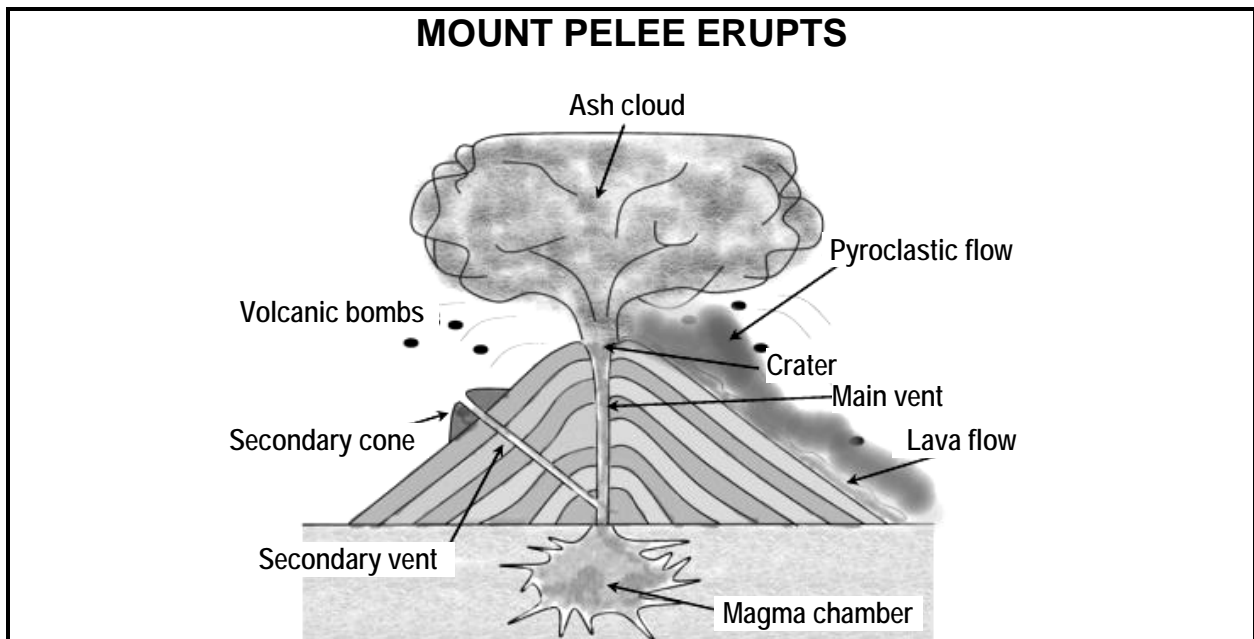
[Source: Google Image]

**SOURCE 1.5**



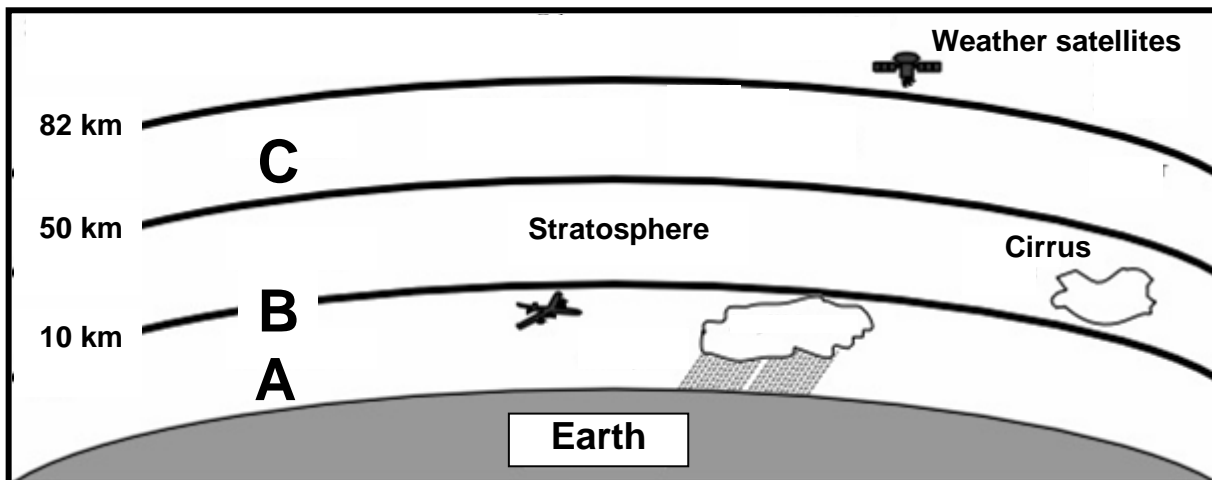
[Source: Google]

**SOURCE 1.6**



The town of St. Pierre lay peacefully at the foot of Mount Pelee in the West Indies. Mount Pelee towered over the town. Although the people knew that Mount Pelee was a volcanic mountain, few looked upon it with concern. The young people laughed at the elders when they spoke about it erupting 50 years before. Yes, Old Pelee was dead, no longer to be feared, but a friend. Suddenly in the spring of 1902 Mount Pelee came to life. There was a terrible explosion that rocked the town and tore a gigantic hole in the side of the mountain. A flood of boiling mud and glowing cinders swept down the mountainside into the town. In a matter of minutes the town was on fire and half buried. Ships in the harbour caught on fire and people burnt to death. The town remains in ruins.

[Source: Google]

**SOURCE 2.2**

[Source: Google Image]

**SOURCE 2.3****BEEF CATTLE CAUSE MORE EMISSIONS THAN CARS – REPORT**by *Ben Kage*

Rising petrol prices and global warming issues have spurred an interest in clean cars, but a report by the United Nations suggests that the real culprit is not the car, but the cow. The world's surging cattle herds are the greatest threat to the planet.

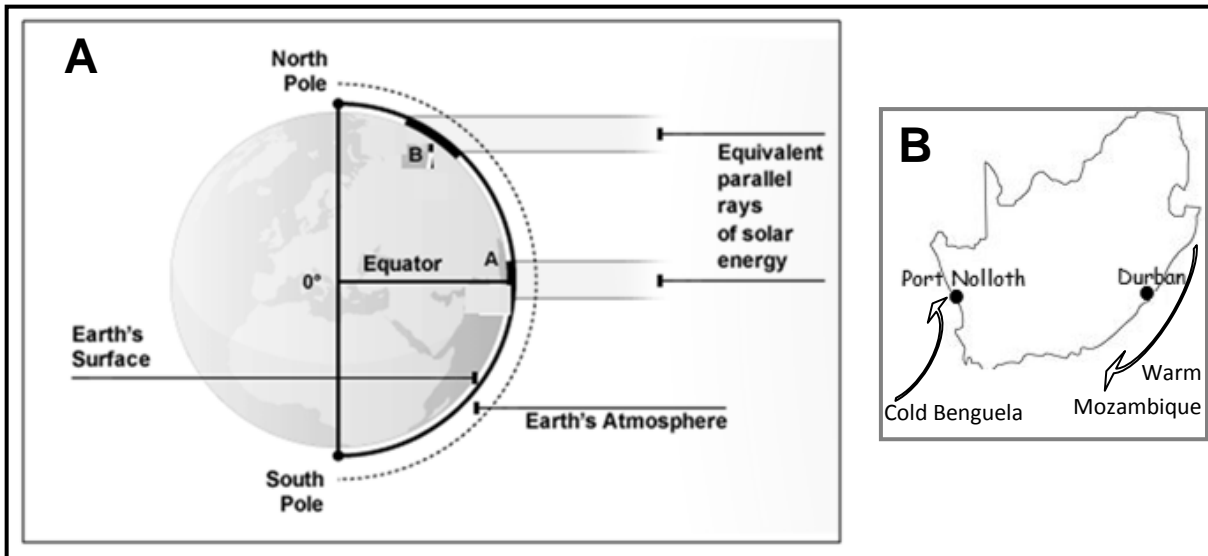
'Cattle farming not only destroys rainforests, uses enormous quantities of fresh water and results in the inhumane treatment of animals, it also increases the destruction of the planet's atmosphere,' Adams said.

The clearing of vegetation for grazing, the use of fertilisers for feed, and transportation of the product is responsible for 9 percent of all carbon dioxide emissions. While carbon dioxide is the most common greenhouse gas, the gasses released from cattle herds and manure emit more than one-third of all methane, a greenhouse gas that warms the world 20 times faster than carbon dioxide. Livestock also produce ammonia, a primary cause of acid rain. Cattle emit 18 percent of the greenhouse gases that cause global warming, which beats the emissions from all transportation combined.

It is also a major cause of deforestation, the report states, as a fifth of the world's pastures are being turned into deserts by overgrazing. Cows also require a massive amount of water – it takes about 9 900 litre of water to produce a little less than one litre of milk.

[Source: Google]

**SOURCE 2.4**



[Source: Google Image]

**SOURCE 2.5**

**EARTHQUAKE IN SA A MATTER OF TIME**

*Pouza van der Fort*

A major earthquake in South Africa is a real possibility but there is no way of predicting when it might occur. Durban has been singled out as the area of greatest concern in the event of an earthquake on the continent.

A major fault line starts underground at Port Shepstone and runs north through KwaZulu-Natal.

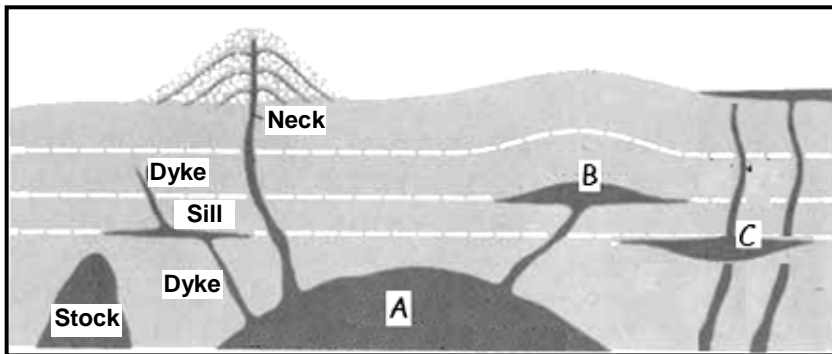
Dr Hartnady from Umvoto Africa, a company that specialises in earth science research and consultancy, said that earthquakes occur when the tectonic plates of the Earth's crust move, slide, shear and grind against each other.

The intervals between major earthquakes of magnitudes greater than seven ranged between 500 and 1 000 years, he said. In some parts of the East Africa rift system, the last major quake might have occurred 1 000 years ago. The next time might be due anytime soon.

'It is not a question of if, but when and it could even be tomorrow,' said Hartnady.

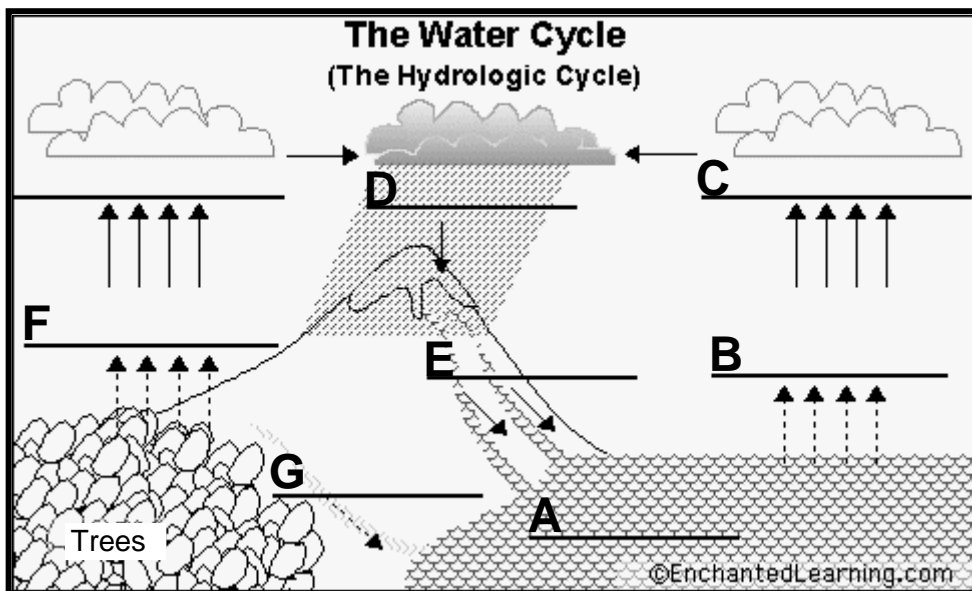
[Source: Google]

**SOURCE 2.6**



[Source: Google Image]

**SOURCE 3.2**



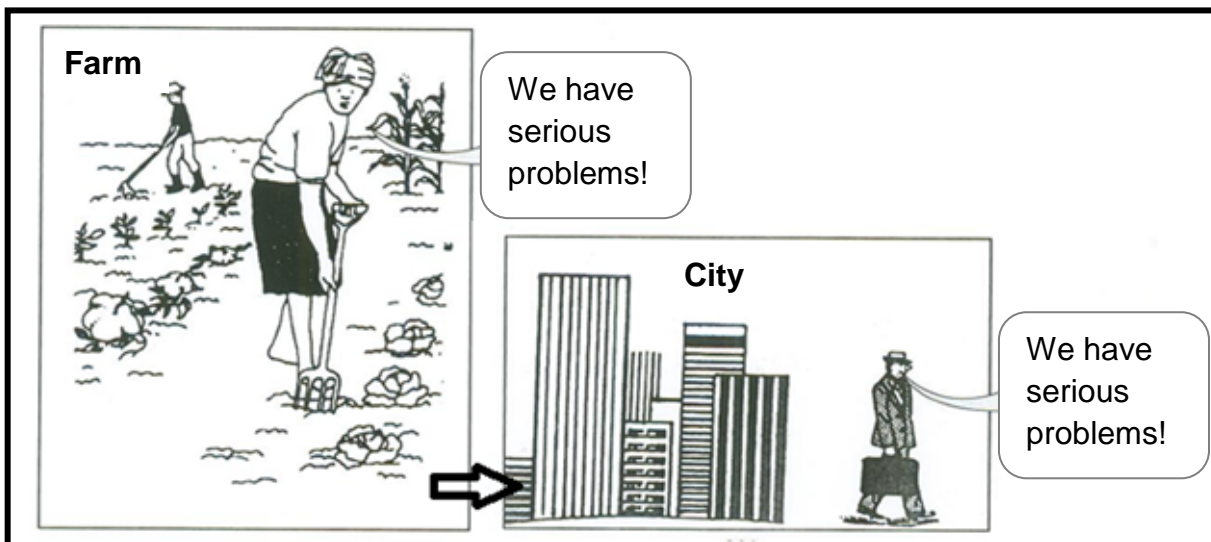
[Source: Google Image]

**SOURCE 3.3**



[Source: Google Image]

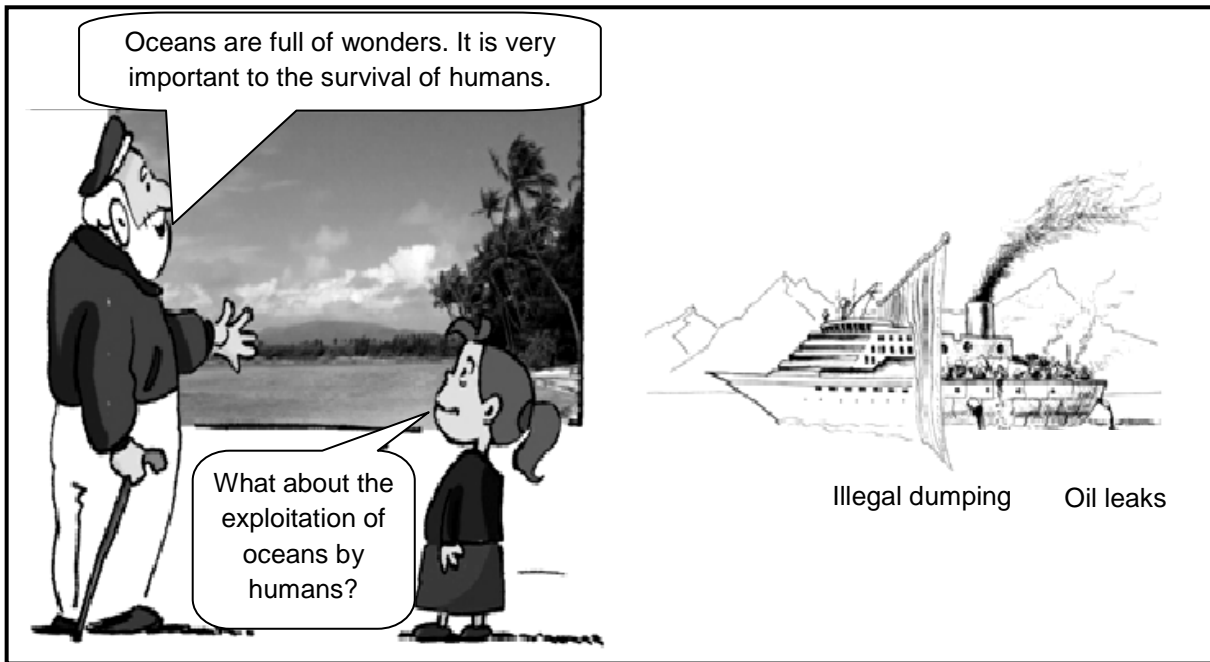
**SOURCE 3.4**



[Source: Google Image]



**SOURCE 3.5**



[Source: Google Image]

**SOURCE 3.6**

**RIPPLE EFFECT OF EXPLOITING FISH STOCKS**

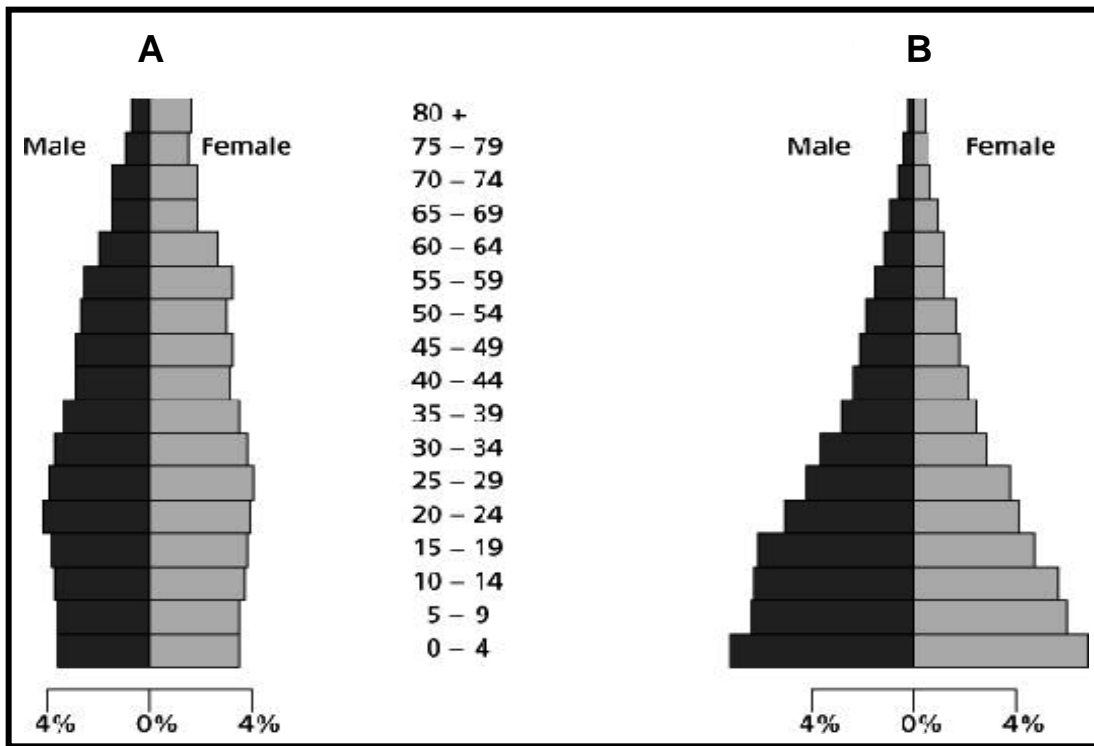
*Kamcilla Pillay*

Marine biologists predict that fish stocks will be depleted by 2050, upsetting the delicate balance of the world's oceans. The loss of fish will have a domino effect (an effect on one level will affect the next level) where other species are affected, for example whales will have a shortage of food.

This is made worse by the increasing death of coral reefs. Corals store carbon, and this will have an impact on the climate. There is a serious need to investigate other means of harvesting fish.

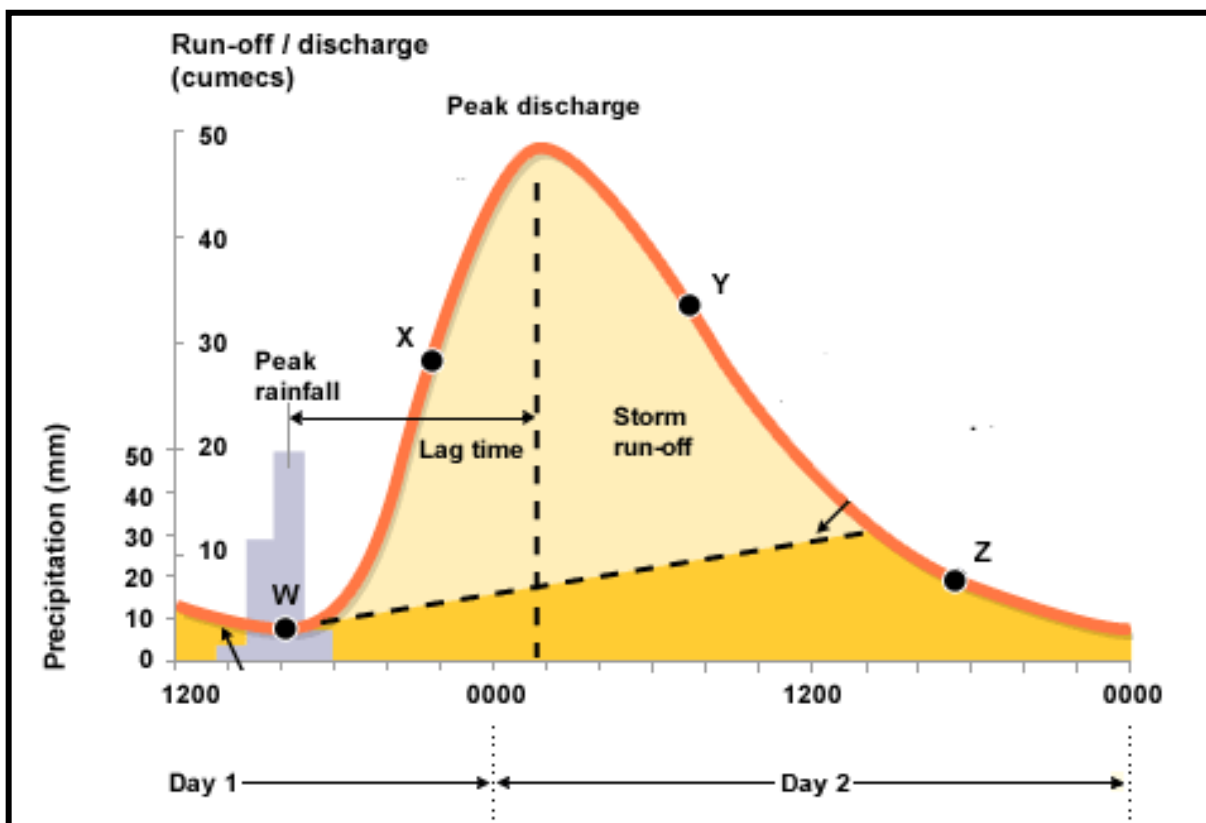
[Source: *Daily News*, June 2011]

**SOURCE 4.1**



[Source: Google Image]

**SOURCE 4.2**



[Source: Google Image]

**SOURCE 4.3**

**HIV/AIDS IN SOUTH AFRICA**

Among the estimated 40 million people with HIV/Aids around the world at the end of 2001, the cast majority, 28 million, lived in sub-Saharan Africa. The virus has spread at such a rapid rate in South Africa that the country is home to more HIV-positive people than any other nation.

**Deaths from HIV/Aids**

HIV/Aids killed more people in South Africa during 2001 than in any other country.

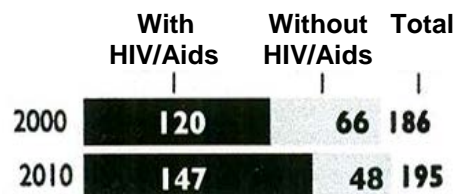
**Child mortality**

Child mortality in South Africa as a result of HIV/Aids is likely to grow even worse this decade.

**Deaths from HIV/Aids, in thousands:**



**Deaths per 1 000 births by age 5:**



[Source: Google]

**SOURCE 4.5**

**HUNDREDS LEFT DESTITUTE**

Shocked residents started counting the cost of this week's floods in the Limpopo town of Hoedspruit. Hundreds of families have been left destitute after severe flooding in the area. Trees were uprooted and cars swept away like toys. A large portion of a road washed away when a dam wall broke. Electricity and water supplies were disrupted and farms destroyed. 600 mm of rain fell in 48 hours. This has been attributed to a tropical low-pressure system in the area. Major relief efforts are under way.

[Source: *Sunday Times*, January 2012]

**SOURCE 4.6****DEMAND FOR WATER: 1996 AND 2030**

<b>SECTOR</b>	<b>% CONTRIBUTION TO GDP</b>	<b>1996 (106 m<sup>3</sup> a<sup>-1</sup>)</b>	<b>2030 (106 m<sup>3</sup> a<sup>-1</sup>)</b>	<b>PERCENTAGE INCREASE</b>
Urban and Domestic	-	2 171	6 936	219,5%
Mining and Industrial	37%	1 598	3 380	111,5%
Irrigation and Forestry	6%	12 344	15 874	28,6%
Environmental	-	3 932	4 225	7,5%
<b>TOTAL</b>	-	20 045	30 415	51,7%

[Source: Google]



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## **NATIONAL SENIOR CERTIFICATE**

**GRADE 10**

**GEOGRAPHY P1**

**EXEMPLAR 2012**

**MARKS: 225**

**TIME: 3 hours**

**This question paper consists of 12 pages and a 12-page annexure.**

**INSTRUCTIONS AND INFORMATION**

1. This question paper consists of FOUR questions.
2. Answer ANY THREE questions of 75 marks each.
3. ALL diagrams are included in the ANNEXURE.
4. Leave a line between subsections of questions.
5. Start EACH question at the top of a NEW page.
6. Number the answers correctly according to the numbering system used in this question paper.
7. Do NOT write in the margins of the ANSWER BOOK.
8. Where possible, illustrate your answers with labelled diagrams.
9. For the paragraph-style question you may refer to ONE idea which you must discuss in depth OR you may refer to different ideas which you must discuss in less depth.
10. Write clearly and legibly.

**SECTION A: THE ATMOSPHERE AND GEOMORPHOLOGY**

You must answer at least **ONE** question from this section.

**QUESTION 1**

- 1.1 Study SOURCE 1.1 on the heating of the atmosphere and answer the following questions.
- 1.1.1 Give ONE term that best describes each of the descriptions below.
- (a) Energy given off by the sun (**A**) (1)
  - (b) Energy given off by the Earth's surface (**B**) (1)
  - (c) The ratio of heat reflected by the different surfaces on the Earth (1)
- 1.1.2 Some of the heat energy given off by the sun is lost before it reaches the Earth's surface. Identify the **THREE** ways in which this occurs by naming **X**, **Y** and **Z**. (3 x 1) (3)
- 1.1.3 Name ONE gas that retains heat and increases the temperature of the atmosphere. (1)
- 1.1.4 Which gas makes up approximately 21% of the atmosphere? (1)
- 1.2 Refer to SOURCE 1.2, which illustrates the layers of the Earth. Give ONE term that best describes each of the descriptions below. Write only the term next to the question number (1.2.1–1.2.7) in the ANSWER BOOK. The same term may be used for more than one answer.
- 1.2.1 The outer layer of the Earth that is solid and rigid
  - 1.2.2 The layer that is generally referred to as being soft and pliable
  - 1.2.3 The layer that is liquid and consists of iron and nickel
  - 1.2.4 The layer that is solid and dense and consists of iron and nickel
  - 1.2.5 The layer that is composed of low-density material called peridotite
  - 1.2.6 The layer that is largely made up of granite and basalt
  - 1.2.7 The layer that is divided into sial and sima (7 x 1) (7)

- 1.3 Refer to the synoptic weather map in SOURCE 1.3.
- 1.3.1 Indicate whether pressure systems **A** and **C** are high- or low-pressure systems respectively. (2 x 2) (4)
- 1.3.2 Refer to the weather station at **B**.
- (a) Describe the cloud cover. (1 x 2) (2)
- (b) State the wind direction. (1 x 2) (2)
- 1.3.3 Give TWO points of evidence from the weather station at **B** that indicates that the possibility of rain is high. (2 x 2) (4)
- 1.3.4 What are the lines of equal pressure on this synoptic chart called? (1 x 2) (2)
- 1.4 Study the cloud in SOURCE 1.4.
- 1.4.1 Identify the cloud type. (1 x 2) (2)
- 1.4.2 Describe TWO characteristics of the cloud in FIGURE 1.4. (2 x 2) (4)
- 1.4.3 Briefly explain how this type of cloud is formed. (2 x 2) (4)
- 1.4.4 Briefly explain the formation of hail that is associated with the cloud in FIGURE 1.4. (3 x 2) (6)
- 1.5 Refer to SOURCE 1.5 and answer the following questions.
- 1.5.1 Which theory is illustrated in FIGURE 1.5? (1 x 2) (2)
- 1.5.2 Name the scientist that suggested that the Earth's crust moves. (1 x 2) (2)
- 1.5.3 What was the name of the supercontinent that existed approximately 200 million years ago? (1 x 2) (2)
- 1.5.4 State TWO points of evidence that suggest that Africa and South America were once linked. (2 x 2) (4)
- 1.5.5 Refer to the theory of plate tectonics and explain why the Earth's crust moves. (3 x 2) (6)



- 1.6 Refer to the information on volcanoes in SOURCE 1.6.
- 1.6.1 Give a geographical term for the phrase 'Old Pelee was dead'. (1 x 2) (2)
- 1.6.2 What is the name given to the big hole through which material is ejected? (1 x 2) (2)
- 1.6.3 State TWO characteristics of Mount Pelee that suggests that it is a composite volcano. (2 x 2) (4)
- 1.6.4 Volcanic activity has many positive effects for some areas. How can volcanic activity be of value to the economy? (3 x 2) (6)
- [75]**

## QUESTION 2

- 2.1 Give ONE word/term for each of the follow descriptions by choosing a word/term from the list below. Write only the word/term next to the question number (2.1.1–2.1.7) in the ANSWER BOOK. Each term may be used more than once.

igneous rock; faulting; folding; sedimentary rock; metamorphic rock; warping

- 2.1.1 Contains fossils
- 2.1.2 Used in the making of tombstones
- 2.1.3 Contains precious stones such as diamonds
- 2.1.4 The Earth's crust is bent into anticlines and synclines
- 2.1.5 Slight bending of the Earth's crust
- 2.1.6 The breaking of the Earth's crust
- 2.1.7 Rocks that form in layers (7 x 1) (7)
- 2.2 Refer to SOURCE 2.2, which shows the layers of the atmosphere.
- 2.2.1 Into how many layers is the atmosphere divided? (1 x 1) (1)
- 2.2.2 Label **A**, **B** and **C**. (3 x 1) (3)
- 2.2.3 What is the approximate height of the troposphere? (1 x 1) (1)
- 2.2.4 In which layer of the atmosphere do cirrus clouds form? (1 x 1) (1)
- 2.2.5 Name ONE permanent gas found in layer **A**. (1 x 1) (1)
- 2.2.6 In which layer is the ozone layer found? (1 x 1) (1)

- 2.3 Read the article on global warming in SOURCE 2.3.
- 2.3.1 Define the term *global warming*. (1 x 2) (2)
- 2.3.2 Why are cattle considered to be a greater contributor to global warming than motor vehicles? (1 x 2) (2)
- 2.3.3 Give THREE reasons why cattle are seen as the biggest threat to the planet. (3 x 2) (6)
- 2.3.4 Write a paragraph on sustainable ways in which global warming can be slowed down. (4 x 2) (8)
- 2.4 FIGURE 2.4A shows the way in which the sun's rays reach the Earth's surface. FIGURE 2.4B shows the location of Port Nolloth and Durban.
- 2.4.1 Is the temperature likely to be higher in area **A** or **B** (FIGURE 2.4A)? (1 x 2) (2)
- 2.4.2 Give TWO reasons for your answer to QUESTION 2.4.1. (2 x 2) (4)
- 2.4.3 Port Nolloth and Durban are situated on the same line of latitude, (FIGURE 2.4B) but Durban experiences higher temperatures throughout the year. Explain why this is the case. (3 x 2) (6)
- 2.5 Read the newspaper article in SOURCE 2.5 and answer the following questions.
- 2.5.1 Define the term *earthquake*. (1 x 2) (2)
- 2.5.2 Name the instrument used to record earthquake tremors. (1 x 2) (2)
- 2.5.3 What is the term used for the graphic representation of an earthquake on paper? (1 x 2) (2)
- 2.5.4 State ONE consequence of an earthquake with a magnitude of 7,9. (1 x 2) (2)
- 2.5.5 What type of boundary forms when two plates of the Earth's crust grind against each other? (1 x 2) (2)
- 2.5.6 Give TWO reasons why scientists predict that an earthquake will most likely occur in South Africa, specifically in Durban, in the near future. (2 x 2) (4)
- 2.5.7 Why should South Africans be concerned about the possibility of such an earthquake in Durban? Give TWO possible reasons for this concern. (2 x 2) (4)

- 2.6 SOURCE 2.6 shows intrusive volcanic features.
- 2.6.1 Explain the term *intrusive volcanism*. (1 x 2) (2)
- 2.6.2 Identify intrusive land features **A** and **B**. (2 x 2) (4)
- 2.6.3 State ONE difference, visible in FIGURE 2.6, between features **B** and **C**. (1 x 2) (2)
- 2.6.4 Describe the difference in the formation of a sill and a dyke. (2 x 2) (4)
- [75]**

**SECTION B: POPULATION AND WATER RESOURCES**

You must answer at least **ONE** question from this section.

**QUESTION 3**

- 3.1 Give **ONE** word/term for each of the following descriptions by choosing a word/term from the list below. Write only the word/term next to the question number (3.1.1–3.1.8) in the ANSWER BOOK.

population distribution; population density; census; literacy rate; 'brain drain'; life expectancy; birth rate; infant mortality; death rate

- 3.1.1 The number of people that live per square kilometre
- 3.1.2 The percentage of people that can read and write
- 3.1.3 The loss of professional people from a country
- 3.1.4 Shows the spread of people over an area
- 3.1.5 The number of children that die per 1 000 people of the population
- 3.1.6 The average number of years that a person is expected to live
- 3.1.7 A survey done to count all the people that live in a country
- 3.1.8 The total number of live births per 1 000 people of the population (8 x 1) (8)
- 3.2 Refer to SOURCE 3.2 which illustrates the hydrological cycle. Replace the letters **A** to **G** in the statements below with the correct geographical terms.
- 3.2.1 **A** is the largest reservoir of water on Earth.
- 3.2.2 **B** is the process whereby water changes to water vapour.
- 3.2.3 **C** is the process whereby water vapour changes to water.
- 3.2.4 **D** is any form of moisture released from the atmosphere to the Earth's surface.
- 3.2.5 **E** is water that flows on the Earth's surface after it has rained.
- 3.2.6 **F** is the process whereby moisture is released from plants into the atmosphere.
- 3.2.7 **G** is the process whereby water reaches the groundwater. (7 x 1) (7)

- 3.3 Refer to SOURCE 3.3 that shows the population characteristics of Brazil.
- 3.3.1 Is Brazil a developed or developing country? (1 x 2) (2)
- 3.3.2 Give ONE reason for your answer to QUESTION 3.3.1. (1 x 2) (2)
- 3.3.3 Give TWO possible reasons for the high birth rate in Brazil. (2 x 2) (4)
- 3.3.4 Discuss the negative impact of a rapid population growth rate on Brazil. (2 x 2) (4)
- 3.3.5 Suggest TWO methods that Brazil can use to reduce the rapid population growth in their country. (2 x 2) (4)
- 3.4 Refer to SOURCE 3.4 and answer the following questions.
- 3.4.1 Identify the type of migration taking place in FIGURE 3.4. (1 x 2) (2)
- 3.4.2 Name TWO push factors resulting in people leaving their farms. (2 x 2) (4)
- 3.4.3 State TWO problems experienced by a city as a result of people moving there. (2 x 2) (4)
- 3.4.4 Discuss TWO methods that can be used to reduce the number of people who leave their farms. (2 x 2) (4)
- 3.5 Refer to SOURCE 3.5 showing the importance of oceans.
- 3.5.1 How do ocean currents form? (1 x 2) (2)
- 3.5.2 Explain the wonder of the ocean by discussing:
- (a) The ocean as a source of moisture (2 x 2) (4)
- (b) The role of the ocean in world trade (2 x 2) (4)
- 3.5.3 Discuss how oceans influence the climate of South Africa. (2 x 2) (4)
- 3.5.4 Human activities cause serious marine pollution.
- (a) Identify TWO ways in which ships pollute the ocean. (2 x 2) (4)
- (b) Discuss the negative impact of pollution on the ocean. (2 x 2) (4)

- 3.6 Read the newspaper article in SOURCE 3.6.
- 3.6.1 What does *exploitation of fish stocks* mean? (1 x 2) (2)
- 3.6.2 Describe ONE of the problems associated with fish losses. (1 x 2) (2)
- 3.6.3 Suggest TWO ways in which the fishing industry can be regulated so that it becomes and remains sustainable. (2 x 2) (4)
- [75]**

**QUESTION 4**

- 4.1 Study the two population pyramids in SOURCE 4.1. They represent two different countries. Indicate which pyramid, **A** or **B**, is referred to in each of the descriptions below.
- 4.1.1 The country with high birth and death rates
- 4.1.2 The country showing a slow population growth
- 4.1.3 A triangular population pyramid
- 4.1.4 The country with a high life expectancy
- 4.1.5 The country with a large number of young people
- 4.1.6 The country with a large number of adults
- 4.1.7 The country with a high life expectancy for females older than 80 years (7 x 1) (7)
- 4.2 Study the flood hydrograph in SOURCE 4.2 and answer the following questions.
- 4.2.1 State the peak rainfall recorded on the flood hydrograph. (1 x 1) (1)
- 4.2.2 State the peak discharge recorded on the flood hydrograph. (1 x 1) (1)
- 4.2.3 Give the term that describes the time difference between the peak rainfall and the peak discharge. (1 x 1) (1)
- Choose the correct answer in brackets in QUESTIONS 4.2.4–4.2.7.
- 4.2.4 The peak discharge occurred at approximately (00:50/01:50). (1 x 1) (1)
- 4.2.5 **X** refers to the (base flow/rising limb). (1 x 1) (1)
- 4.2.6 **Y** refers to the (falling limb/infiltration rate). (1 x 1) (1)
- 4.2.7 The stream resumed its normal flow at (midnight/midday) on day (one/two). (2 x 1) (2)

- 4.3 Refer to the information on HIV/Aids in South Africa in SOURCE 4.3.
- 4.3.1 Define the term *death rate*. (1 x 2) (2)
- 4.3.2 Comment on, and give a possible reason for, the trend in the child mortality rate between 2000 and 2010. (2 x 2) (4)
- 4.3.3 Give TWO reasons why South Africa has such a high level of HIV/Aids-related deaths. (2 x 2) (4)
- 4.3.4 Discuss TWO measures that can be put in place to reduce HIV/Aids-related deaths in South Africa. (2 x 2) (4)

- 4.4 Read the excerpt below and answer the questions that follow.

**REFUGEES FLEE SA ATTACKS**

John left Zimbabwe hoping for sanctuary in South Africa. Now he fears for his life. 'I left home to try and support my family. But it is better to starve at home than to die here.' A mob had attacked him in Johannesburg. They took all his belongings.

- 4.4.1 Explain the meaning of the following terms:
- (a) Refugee (1 x 2) (2)
- (b) Xenophobia (1 x 2) (2)
- 4.4.2 Name any ONE other African country (excluding Zimbabwe) from where South Africa attracts refugees. (1 x 2) (2)
- 4.4.3 Give TWO possible reasons why Zimbabweans leave their country. (2 x 2) (4)
- 4.4.4 Explain why many South Africans do NOT want refugees in the country. (2 x 2) (4)
- 4.4.5 State ONE positive impact that refugees might have on South Africa. (1 x 2) (2)
- 4.5 Read the newspaper extract on flooding in SOURCE 4.5.
- 4.5.1 What caused the flooding in Limpopo? (1 x 2) (2)
- 4.5.2 Name ONE other factor, excluding the one mentioned in QUESTION 4.5.1, that can cause flooding. (1 x 2) (2)
- 4.5.3 State TWO damaging effects of the floods that occurred in Limpopo. (2 x 2) (4)
- 4.5.4 Explain why flooding is usually associated with:
- (a) Higher food prices (2 x 2) (4)
- (b) The spread of cholera (a waterborne disease) (2 x 2) (4)

4.6	SOURCE 4.6 shows a summary of the demand for water in different sectors in 1996, and the estimated demand for 2030.		
4.6.1	Name the sector that uses the largest volume of water.	(1 x 2)	(2)
4.6.2	Explain why the sector mentioned in QUESTION 4.6.1 has such a high demand for water.	(2 x 2)	(4)
4.6.3	State the total percentage increase in the demand for water in the sector mentioned in QUESTION 4.6.1.	(1 x 2)	(2)
4.6.4	Discuss THREE government initiatives that can be used to secure South Africa's scarce water supply in the future.	(3 x 2)	(6)
			<b>[75]</b>
		<b>GRAND TOTAL:</b>	<b>225</b>