



NATIONAL SENIOR CERTIFICATE EXAMINATION  
SUPPLEMENTARY PAPER 2015

**GEOGRAPHY: PAPER I**

Time: 3 hours

300 marks

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**PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY**

1. This question paper consists of 18 pages and an Insert of 4 pages (i – iv). Detach the Insert from the middle of the question paper. Please check that your question paper is complete.
  2. Read the questions carefully.
  3. **ALL THREE QUESTIONS ARE COMPULSORY.**
  4. Credit will be given for the following:
    - Interpretation and explanation; and
    - Evidence of personal observations where this is appropriate to the question.
  5. You are encouraged to use sketch maps, diagrams and other explanatory drawings to support your answers wherever relevant.
  6. Number your answers exactly as the questions are numbered.
  7. It is in your own interest to write legibly and present your work neatly.
  8. There is a GLOSSARY of words on page 2 explaining what the words in **bold** used in the questions mean.
  9. Candidates must pay attention to the mark allocation. Unless otherwise indicated, two marks are awarded for a valid response. This means that a question carrying four marks requires two responses.
  10. Please hand in this question paper.
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**GLOSSARY**

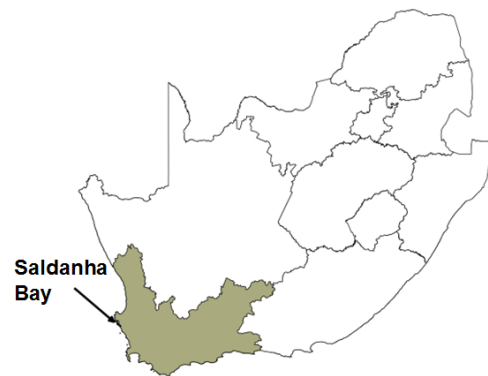
<b>WORD</b>	<b>MEANING</b>
<b>Account for</b>	To explain why, by giving reasons.
<b>Analyse</b>	To separate into parts or elements and to describe or examine each in detail.
<b>Annotate</b>	To add notes or explanations to a sketch, map or drawing.
<b>Calculate</b>	To work out the value of something using a mathematical method.
<b>Classify</b>	To divide into groups or types so that things with similar characteristics are in the same group.
<b>Define</b>	To give the precise meaning of ...
<b>Describe</b>	To list the main characteristics of something; give an account of. (Note: a diagram or map may be part of a description.)
<b>Determine</b>	To discover as a result of investigation.
<b>Discuss</b>	To examine or to investigate by argument the various aspects of a statement.
<b>Draw</b>	To show by means of a sketch.
<b>Evaluate</b>	To make an appraisal or express an opinion concerning the value.
<b>Explain</b>	To make clear or plain or to make sure that the reader understands what is being said.
<b>Explore</b>	To comment on something in detail.
<b>Flow chart</b>	A number of ideas which are linked together by means of a process.
<b>Give/provide</b>	To state or present the information.
<b>Identify</b>	To give the essential characteristics of; to name.
<b>Illustrate</b>	To show what you are saying or to make your meaning clearer, often using a diagram or sketch.
<b>Label</b>	To mark a diagram or sketch with simple information.
<b>Match</b>	To find the exact counterpart of another.
<b>Mind Map</b>	A diagram showing how different components of a system or topic relate to one another.
<b>Name</b>	To state something; to give; to mention.
<b>Outline</b>	To provide a general explanation or description of something.
<b>Predict</b>	To say what is expected to happen; to foretell; to say in advance.
<b>Select</b>	To choose; to pick out the correct answer from several alternatives.
<b>State</b>	To present information or details plainly, directly and simply, without discussion.
<b>Suggest</b>	To propose an explanation or solution by way of a plan or suggestion.

**SECTION A            GEOGRAPHIC ISSUES****QUESTION 1            GEOGRAPHICAL CASE STUDY: SALDANHA BAY,  
WESTERN CAPE**

Study all the source material carefully.

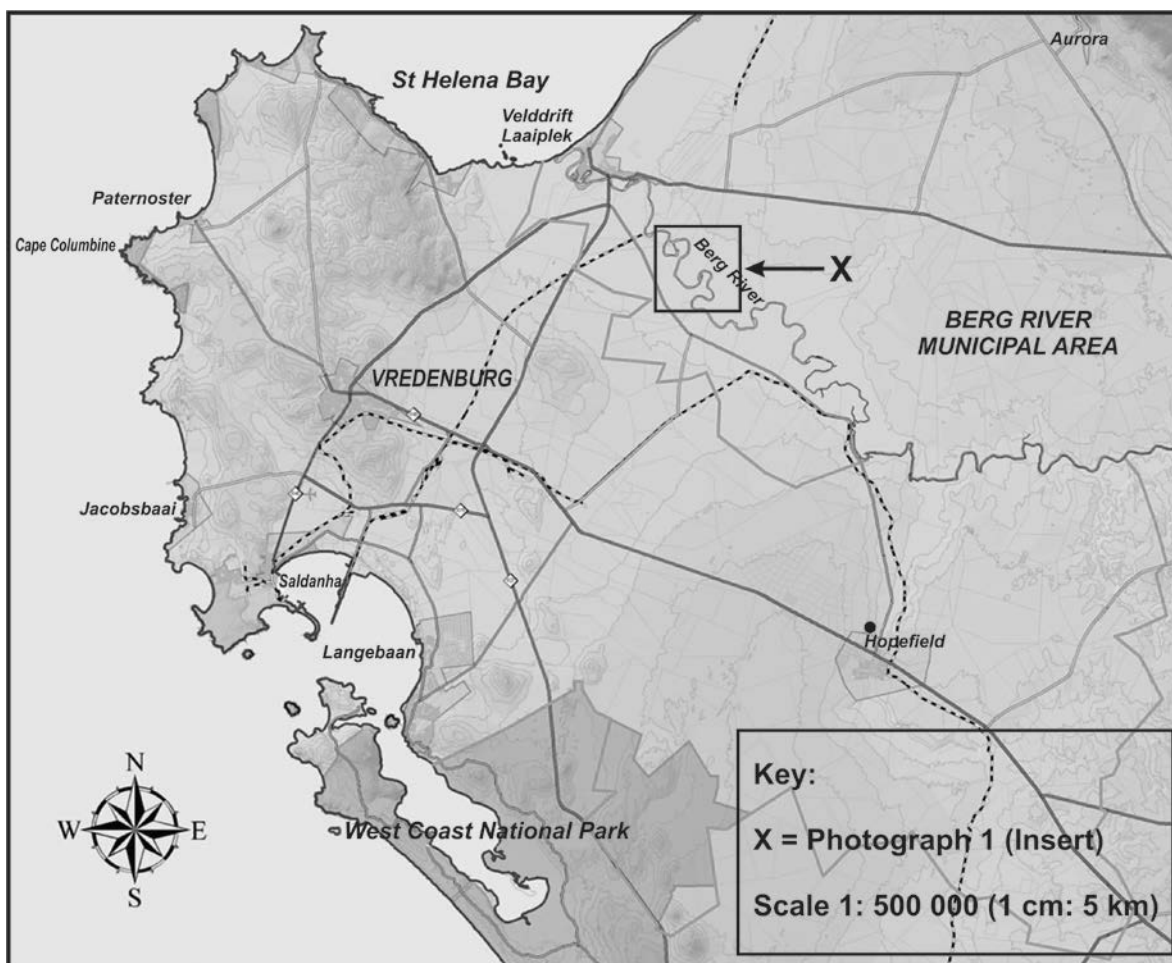
**FACT FILE: SALDANHA BAY MUNICIPALITY**

- The town of Saldanha was incorporated with five other towns into the Saldanha Bay municipality.
- Saldanha Bay is one of the safest and deepest natural harbours in the world.
- Iron ore is transported by trains from the mines of the Sishen area in the Northern Cape to the harbour.
- Saldanha Bay is also dependent on its commercial fishing industry.
- The current population of the municipality is estimated at 72 000.



[Source: <saldanhabay.co.za>]

**Figure 1: Map of Saldanha Bay Municipality**



[Source map: <www.saldanhabay.co.za>]

**1.1 Geographical skills and techniques**

Refer to Figure 1 on page 3.

- 1.1.1 **Give** the general direction of flow of the Berg River as it enters the ocean at Veldrift Laaiplek. (2)
- 1.1.2 **Determine** the straight line distance (km) from the town of Saldanha to Hopefield. (2)
- 1.1.3 **Calculate** the area (km<sup>2</sup>) of the block marked X in Figure 1. (2)

**1.2 Climate and weather: Mid-latitude cyclones, subtropical anticyclones and associated weather conditions****Heavy rains in the Western Cape**

At the start of 2014, Western Cape farmers faced heavy downpours over large areas of the province.

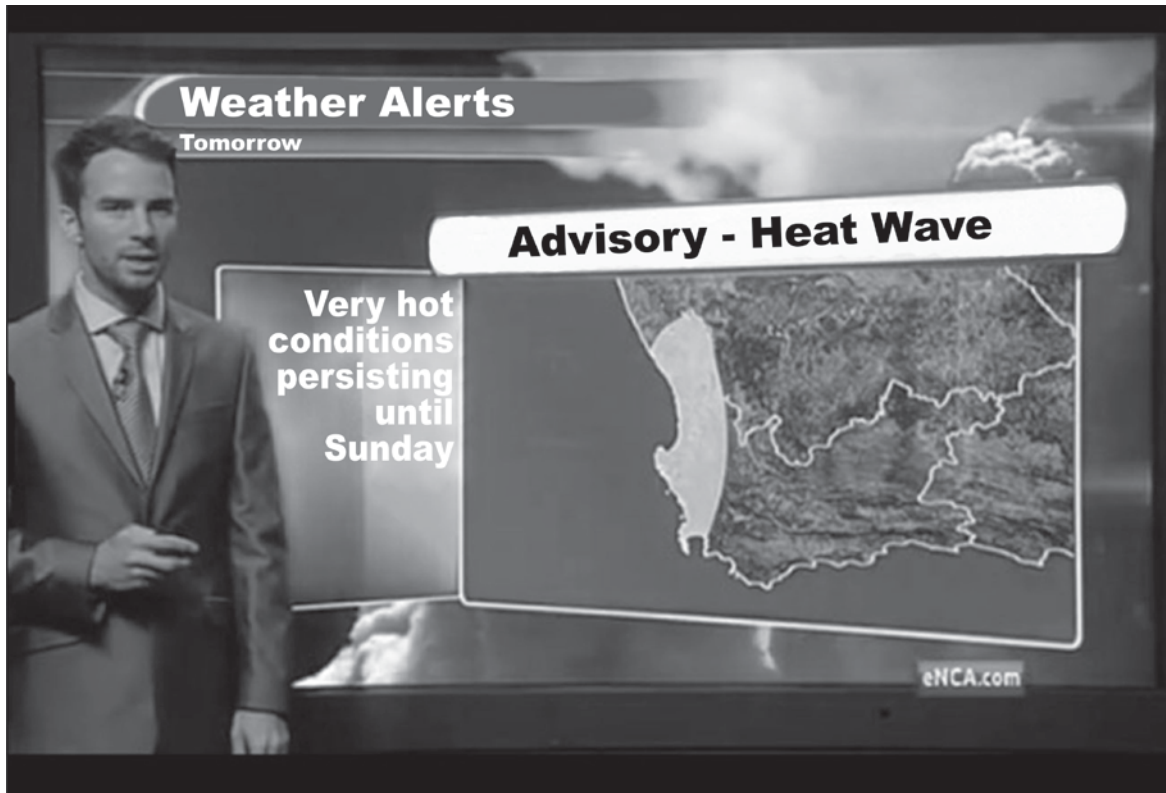
Carl Opperman, CEO of Agri Wes-Cape, said that no serious damage had been reported, but farmers could face problems if the rain continued. Over a period of 48 hours in the first week of January, Saldanha Bay received 20 mm, Paarl 30 mm and Worcester 100 mm of rain.

He added that although light rain was common in the Western Cape during December-January, this amount was unusual. "The Cape is not as it should be this time of year," Opperman said.

[*Farmer's Weekly*, 17 January 2014]

- 1.2.1 Refer to the article above and **state** if the following sentences are TRUE or FALSE. If FALSE, write out the correct statement.
- (a) The Western Cape normally receives its rain mainly in summer.
- (b) Possible climate change contributes to 'the Cape is not as it should be this time of year'.
- (c) Temperate cyclones are the cause for most of the rainfall experienced in the Western Cape.
- (d) Stable air associated with anticyclones can result in uncommonly high rainfall. (8)
- 1.2.2 **Outline** the conditions necessary for the formation of mid-latitude cyclones. (6)

**Figure 2: Television weather report of a heat wave warning for the Western Cape, 14 February 2014**



[Source: <enca.com/weather>]

Refer to Figure 2 above.

- 1.2.3 Saldanha Bay experienced temperatures of 38 °C on Valentine's Day (14 February) as hot, dry winds blew down the escarpment. **Name** this type of wind and **describe** how these hot dry winds can result in a heat wave. (6)
- 1.2.4 Write a brief television weather report for eNCA whereby you **explain** to the public why temperatures are likely to cool down in the days after the heat wave. (6)

### 1.3 Geomorphology: Drainage systems in South Africa and fluvial processes

1.3.1 Fill in the missing words from the list provided. Write down only the question number and the correct word, for example (a) – episodic.

episodic	alluvium	levee	laminar
exotic	rejuvenated	turbulent	

- (a) A/an ... river gains more energy and starts to erode again.
- (b) The section of the Berg River in Figure 1 (page 3) has predominantly ... flow.
- (c) A/an ... river is found in areas of low rainfall as such rivers are supplied with water from areas of higher rainfall further upstream.
- (d) A raised bank on the edge of a river is called a ...
- (e) Fertile ... is deposited on the Berg River flood plain during flooding. (10)

Refer to Photograph 1, a Landsat image (page (i) of the colour Insert) of the Berg River.

- 1.3.2 **Identify** and **describe** TWO fluvial landforms shown in Photograph 1. (Note: do not refer to oxbow lakes) (8)
- 1.3.3 With the aid of a series of diagrams, **illustrate** how the Berg River in Photograph 1 could possibly form oxbow lakes in the future. (6)
- 1.3.4 **Predict** how the construction of a dam upstream of the Berg River in Photograph 1 will influence the fluvial processes of the Berg River further downstream. (4)

### 1.4 Rural and urban settlements: Urban settlements and settlement issues

Study Photograph 2 (page (i) of the colour Insert) and the Fact File (page 3).

- 1.4.1 **Outline** TWO factors that influenced the original site of the settlement of Saldanha. (4)
- 1.4.2 Saldanha is a 'break of bulk' point. **Explain** what is meant by this classification of settlement. (2)

### 1.5 Economic Geography of South Africa: Secondary and tertiary sectors and strategies for industrial development

Study Photograph 3 (page (ii) of the colour Insert) of a fish processing plant in the town of Saldanha.

- 1.5.1 **Classify** the main economic sector depicted in Photograph 3. (2)
- 1.5.2 In the form of a **mind map**, **outline** the factors influencing the location of this economic activity (Photograph 3). (8)

**Saldanha Bay IDZ on the West Coast is drawing strong international interest**

January 21, 2014

The Saldanha Bay industrial development zone (IDZ), in the Western Cape, is drawing strong international interest, with several lease agreements signed and a surge of global oil and gas companies negotiating joint ventures with South African firms.



Western Cape Minister of Finance, Economic Development and Tourism, Alan Winde, said in a statement on Thursday that the Western Cape government had invested R25-million over five years to create the IDZ.

"This is the culmination of years of collaboration between all spheres of government and the Saldanha Bay community. The IDZ has the potential to become one of the most important levers for jobs and economic growth for the Western Cape. Early indications are that it will indeed be a major catalyst for foreign direct investment and increased employment opportunities for our residents in the medium to long term," he concluded.

[Source: [engineeringnews.co.za](http://engineeringnews.co.za)]

1.5.3 Refer to the article above and write an essay (approximately TWO pages) using the sub-headings below in which you **discuss** the following:

- Concept and characteristics of IDZs
- Reasons for implementing the IDZs
- **Evaluate** the IDZ program. You may refer to the Saldanha Bay IDZ or any other case study that you are familiar with.

(24)

**100 marks**

**SECTION B CLIMATE AND WEATHER AND GEOMORPHOLOGY****QUESTION 2****2.1 Climate and weather terminology**

Various options are given as possible answers to the following questions. **Select** the most appropriate answer from the list. Write down only the question number and the correct answer. For example 2.1.1 – A.

2.1.1 A cold front occlusion occurs when ...

- A the air behind the cold front is warmer than the air in front of the warm front
- B the air behind the warm front is the coldest of all air masses
- C the air in front of the warm front is warmer than the air behind the cold front
- D the air mass behind the cold front is the same temperature as the air in front of the warm front

(2)

2.1.2 High pressure cells in the southern hemisphere have the following characteristics ... (**select** from the options below)

- (i) anticlockwise circulation
- (ii) descending air mass
- (iii) can form ridges
- (iv) can form troughs

**Select** the correct combination:

- A (i), (ii) and (iv)
- B (i) and (ii) only
- C (i), (ii) and (iii) only
- D (ii) and (iv) only

(2)

2.1.3 Air that moves down-valley during the night is called a/an ... wind.

- A anabatic
- B inversion
- C berg
- D katabatic

(2)

2.1.4 During winter the interior 'highveld' of South Africa experiences mostly clear skies due to ...

- A the influence of mid-latitude cyclones
- B the influence of anticyclonic conditions
- C the influence of tropical cyclones
- D the low pressure over the interior

(2)

2.1.5 A temperature inversion shows that ...

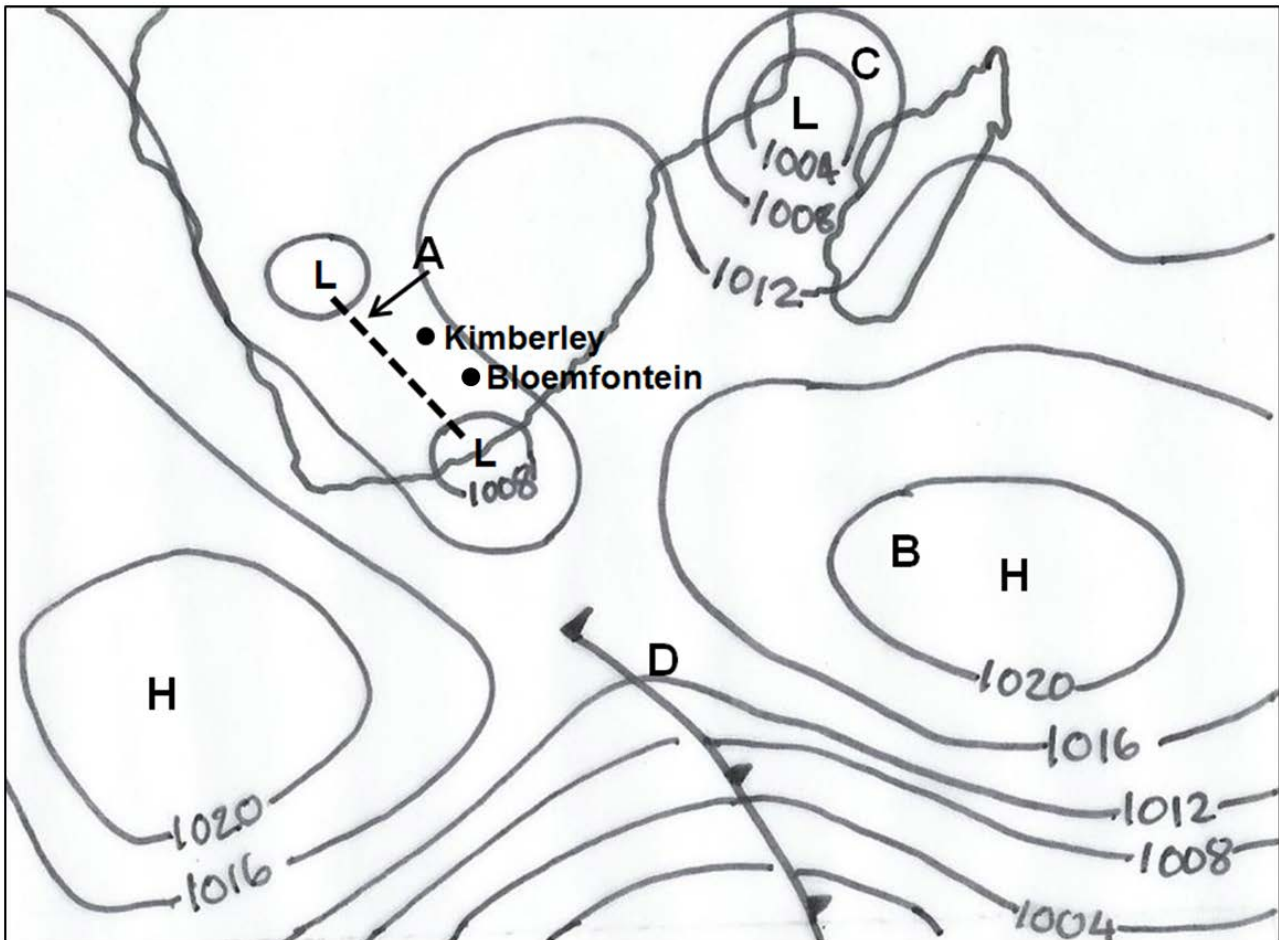
- A temperature increases with height
- B temperature remains constant with increasing altitude
- C temperature decreases with height
- D temperature increases then decreases with height

(2)



## 2.2 Climate and weather – synoptic weather maps

**Figure 3: Synoptic weather map dated 2014/02/14**



Refer to Figure 3 above and Photograph 4 on page (ii) of the colour Insert.

- 2.2.1 **Name** the climatic features labelled A – D on Figure 3. Write each answer next to the letters A, B, C and D in your Answer Book. (8)
- 2.2.2 Apart from the date, **explain** why this is a typical summer synoptic situation. (6)
- 2.2.3 Line thunderstorms were experienced on 2014/02/14. **Explain** why line thunderstorms occur in summer. (4)
- 2.2.4 **Draw** an **annotated** diagram to illustrate why areas to the south-west of Bloemfontein and Kimberley may experience thunderstorms. Use evidence from Figure 3 above and Photograph 4 (Insert). (8)

### 2.3 Typhoon Haiyan – a case study

Refer to Photograph 5 and Figure 4 on page (iii) of the colour Insert. Read the extract below.

#### **Philippines: thousands evacuated as Typhoon Haiyan strikes**

**8 November 2013**

Haiyan, the strongest typhoon in the world in 2013 and possibly the most powerful ever to hit land, smashed into the Philippines on Friday, forcing more than a million people to flee, flooding villages and raising fears of widespread casualties.

Haiyan, a category-5 super-typhoon, scoured the northern tip of Cebu province and headed northwest towards Boracay island, both tourist destinations, after lashing the central islands of Leyte and Samar with 275 km/h wind gusts and 5 – 6 meter waves.

"The super-typhoon is likely to make landfall with winds near 312 km/h. This makes Haiyan the strongest tropical cyclone on record to make landfall," said Jeff Masters, director of meteorology at US-based Weather Underground.

The world's strongest recorded typhoon, cyclone or hurricane to make landfall was Hurricane Camille in 1969, which hit the southern US state of Mississippi with 305 km/h winds, said Weather Underground's Masters. An average of 20 typhoons hit the Philippines every year.

[<<http://www.theguardian.com/world/2013/nov/08/typhoon-haiyan-batters-philippines>>]

- 2.3.1 (a) **Describe** THREE typical characteristics of a mature typhoon, for example a category-5 typhoon like Haiyan. (6)
- (b) Refer to Photograph 5 (Insert). **Draw** a well-labelled cross section (A – B) of Typhoon Haiyan to show the extreme weather conditions experienced. (8)
- 2.3.2 (a) **Explain** the meaning of the phrase 'the super-typhoon is likely to make landfall'. (2)
- (b) Refer to Figure 4 (Insert). **Describe** the predicted path Haiyan was expected to take after 8 November 2013. (4)

## 2.4 Fluvial terminology

**Match** the word(s) in column A with the correct statement in column B. Write **ONLY** the number and correct letter, for example 2.4.1 – A.

COLUMN A		COLUMN B	
2.4.1	Graded profile	A	Rivers flow outwards from a central highland.
2.4.2	Superimposed drainage	B	The point where the captor stream meets the captured stream and diverts the water flow.
2.4.3	Dendritic drainage pattern	C	River is older than the landscape.
2.4.4	Watershed	D	Concave longitudinal profile of a river.
2.4.5	Elbow of capture	E	River is younger than the landscape.
		F	A waterfall along the longitudinal profile of a river.
		G	A high-lying area that separates two river basins.
		H	A branching, tree-like drainage pattern.

(10)

## 2.5 Fluvial landforms and processes

Study Photograph 6 showing a waterfall on page iv of the Insert.

2.5.1 With reference to Photograph 6, **describe**:

(a) turbulent flow

(b) a knickpoint

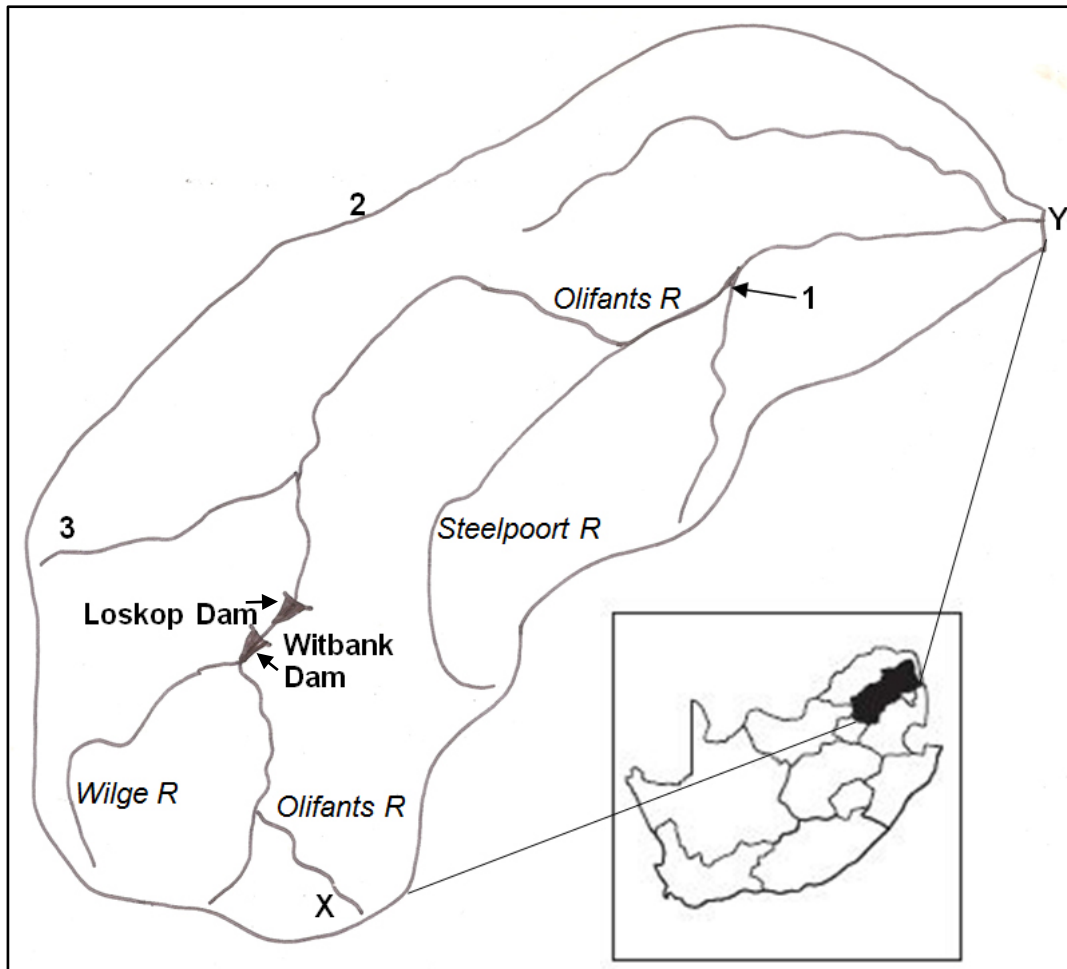
(4)

2.5.2 **Account for** the formation of a large plunge pool and gorge in the area shown in Photograph 6.

(8)

## 2.6 Olifants River Drainage Basin

**Figure 5: Location map of the Olifants drainage basin**



### **Fact File: Olifants River drainage basin**

The Limpopo drainage basin is the second largest drainage basin in South Africa.

The Olifants River forms a *sub-catchment area* of the Limpopo drainage basin.

Average annual rainfall is 631 mm, experienced between November and March.

Important dams include the Witbank and Loskop Dams as well as the Massinger Dam in Mozambique.

Minerals mined in the sub-catchment area are gold, coal, platinum, copper and vanadium.

Forestry is an important agro-industry and many of the country's power stations are found in the area.

Acid mine drainage is a problem.

[Adapted from Shutters Top Class Geography Grade 12, 2013]

Refer to Figure 5 and the Fact File on page 12.

- 2.6.1 Fluvial features have been numbered 1 – 3 on Figure 5. A number of sentences are provided, which relate to these features. Write down the letter (a, b, c) and **match** and **name** of the feature in your Answer Book.
- (a) The point where tributaries meet ... (1).
- (b) Forms an important boundary between two drainage basins ... (2).
- (c) A/An ... (3) order tributary rises in the source area of a basin. (6)
- 2.6.2 **Explain** what is meant by the term *sub-catchment area*. (See Fact File, page 12.) (2)
- 2.6.3 **Draw** a well-labelled longitudinal profile of the Olifants River from its source (X) to point (Y), indicated on Figure 5 (page 12). (6)
- 2.6.4 Write a paragraph in which you **analyse** the impacts the various water users have on the Olifants River sub-catchment area. (8)

<b>100 marks</b>
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## SECTION C RURAL AND URBAN SETTLEMENT AND ECONOMIC GEOGRAPHY OF SOUTH AFRICA

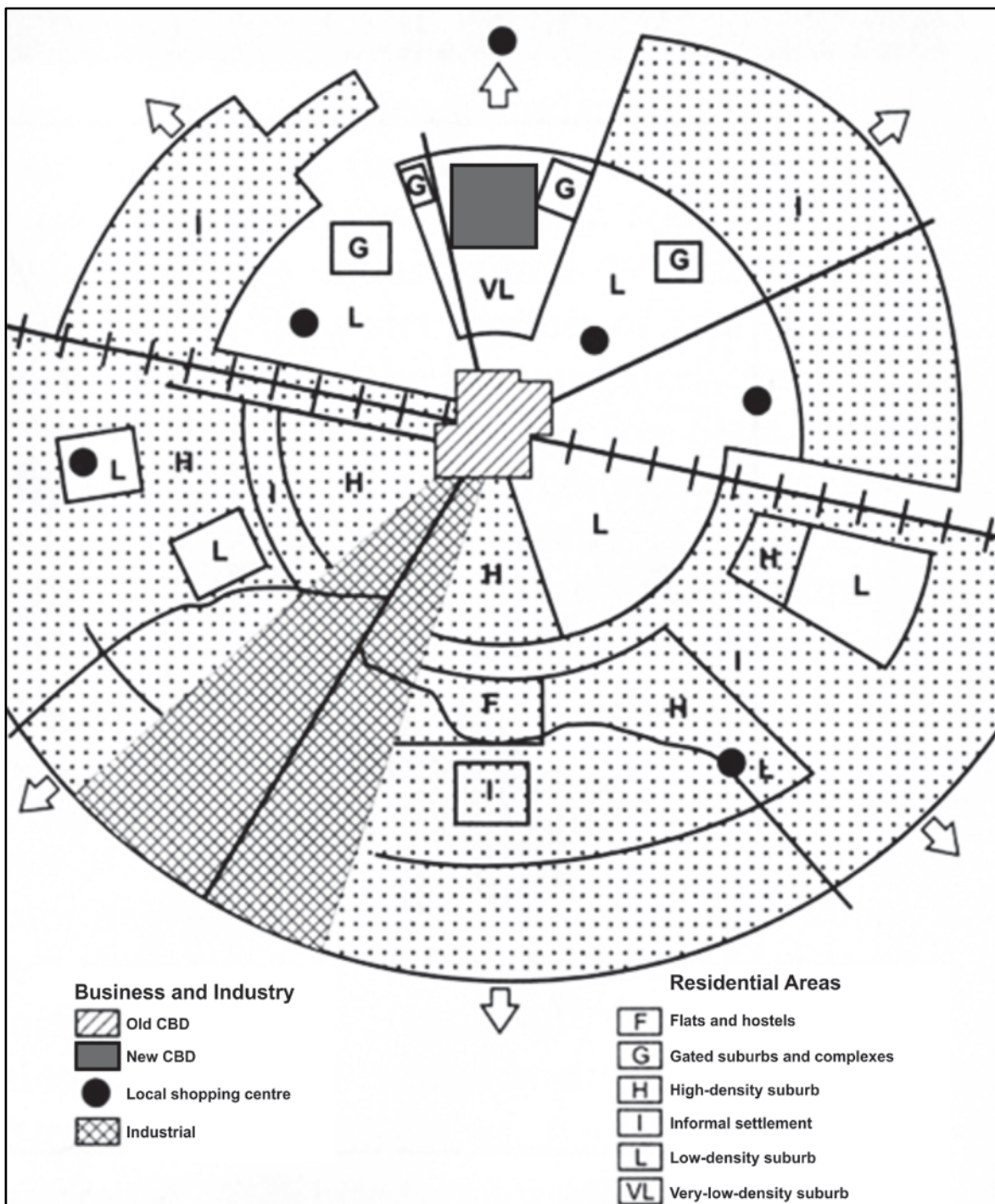
### QUESTION 3

#### 3.1 Study of settlements

**Match** the word(s) in Column A with the correct statement in Column B. Write **ONLY** the number and correct letter, for example 3.1.1 – A.

Column A		Column B	
3.1.1	Land reform	A	These are long, narrow settlements often along a transport route.
3.1.2	Settlement complexity	B	Can result in services in rural settlements to decline.
3.1.3	Functional hierarchy	C	Policy to redress issues around land tenure.
3.1.4	Infrastructure	D	Usually one crop is farmed and purely for profit.
3.1.5	Site	E	A method of classifying settlements by their main activity.
3.1.6	Rural depopulation	F	The expansion of urban areas into the surrounding areas.
3.1.7	Small scale farming	G	The basic utilities that provide a network in a settlement.
3.1.8	Linear rural settlement	H	The number of components that make up a settlement.
		I	The physical space that a settlement occupies.
		J	Farmers grow different crops to meet their needs.

(16)

**Figure 6: A Model of urban structure**

[Source: Roy Cole and Harm De Blij. *Regional Geography*. New York: Oxford Press, 2007]

3.2 Study Figure 6 above illustrating a model of urban structure.

3.2.1 **Describe** the general characteristics of the following urban land use zones:

- (a) Industrial
- (b) Informal settlements
- (c) Gated suburbs and complexes. (6)

3.2.2 **Name** the urban process shown by the arrows in Figure 6. (2)

3.2.3 **Suggest** TWO factors that cause urban settlements to have more than one CBD. (4)

### 3.3 Urban structure and patterns

Study Photograph 7 of Manhattan, New York (page (iv) of the Insert).

**Select** the correct underlined word(s) to complete the sentences below. Write down only the question number (e.g. 3.3.1) and the correct word(s) next to each number. Each statement refers to the settlement in Photograph 7 (Insert).

- 3.3.1 Photograph 7 depicts a/an urban profile / commuter zone / suburban zone.
- 3.3.2 Manhattan forms part of the metropole / megalopolis / urban-rural fringe of the NE seaboard of the United States.
- 3.3.3 Manhattan offers predominantly convenience / high order / low order services.
- 3.3.4 The dominant type of activity that takes place in Manhattan would fall under the primary / secondary / tertiary economic sector.
- 3.3.5 The land use in Photograph 7 is predominantly commercial / industrial / low-income housing.

(10)

### 3.4 Urban settlement issues

Read the extract and study Figure 7 below.

#### South Africa 'two-thirds urbanised'

"The proportion of South Africans living in urban areas increased from 52% in 1990 to 62% in 2012. As Africa is becoming increasingly urbanised, a pressing need exists for governments and municipalities to deal with this **huge influx**."

[South African Institute of Race Relations, January 2014]

**Figure 7: A scene of urban blight, South Africa**

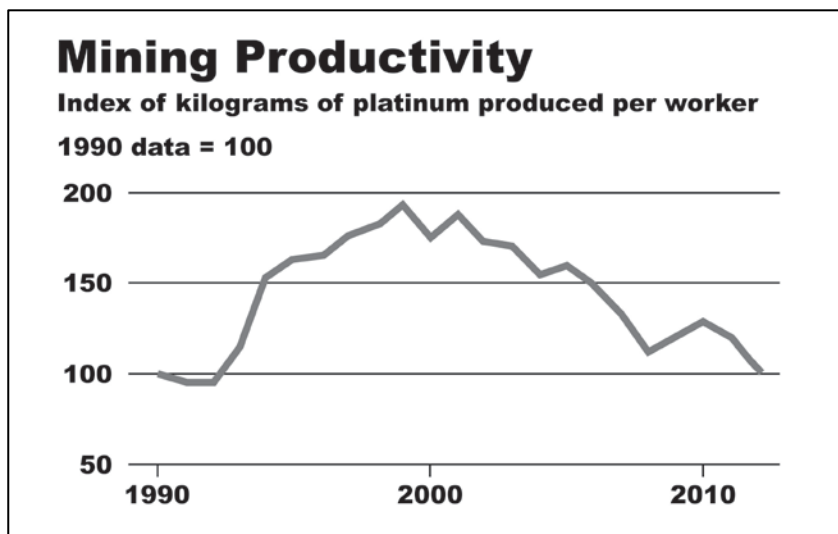




- 3.4.1 **Define** the term 'urban blight'. (2)
- 3.4.2 **Identify** and **discuss** THREE urban issues relating to rapid urbanisation illustrated in Figure 7 (page 16). (6)
- 3.4.3 Refer to the extract on page 16. **Explore** FOUR solutions that South African urban settlements could put into place to deal with rapid urbanisation and this huge influx of people. (8)

3.5 **Economic sectors of South Africa, mining**

**Figure 8: Platinum mining productivity in South Africa**



[Source: <www.bloomberg.com>]

Study Figure 8 above.

- 3.5.1 **Give** the years when platinum mining productivity per worker was at its:
- (a) highest.
  - (b) lowest. (4)
- 3.5.2 **Describe** the recent trend in platinum mining productivity (after 2010) as shown in Figure 8. (4)
- 3.5.3 **Outline** THREE factors affecting the platinum mining industry that possibly resulted in this recent trend (Question 3.5.2 above). (6)

### 3.6 Secondary and tertiary sectors, South Western Cape industrial region and the informal sector

#### Fact File:

- Manufacturing contributes 11,8% to the GDP of the Western Cape.
- Cape Town was awarded the World Design Capital of 2014.
- This prestigious status is designated by the International Council of Societies of Industrial Design (ICSID) to cities and their surrounding regions that are dedicated to using design for social, cultural and economic development.



[Source: <[www.theinspiredafrican.com](http://www.theinspiredafrican.com)>]

3.6.1 **Discuss** THREE factors that hinder (make difficult) the manufacturing industry in the Western Cape. (6)

3.6.2 **Analyse** how the award of the World Design Capital 2014 for Cape Town is likely to influence the manufacturing industry in the Western Cape. (6)

3.6.3 Study the extract from the Mail and Guardian article below.

**The informal sector has risen to the unemployment challenge, creating over 12 000 of the 24 000 new jobs added in November and December 2013.**



[Source: Mail and Guardian, 13 January 2014]

Write a 1½ to 2 page report where you:

- **Outline** the nature of informal trading.
- **Discuss** some of the challenges facing South Africa's informal traders.
- **Predict** the role the informal sector could have in solving high levels of unemployment in South Africa. (20)

**100 marks**

**Total: 300 marks**