

SENIOR CERTIFICATE EXAMINATION NOVEMBER 2006

GEOGRAPHY HIGHER GRADE: PAPER II

Time: 3 hours

300 marks

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

- 1. This paper consists of 24 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.
- ANSWER THREE QUESTIONS AS FOLLOWS: One from Section A One from Section B One from Section C.
- 4. Credit will be given for:
 - interpretation and explanation; and
 - evidence of personal observation in the field where this is appropriate to the question.
- 5. You are encouraged to use sketch maps, diagrams and other explanatory drawings to support your answers whenever relevant.
- 6. Number your answers exactly as the questions are numbered.
- 7. Please **circle** the number of each question answered on the back inside flap of your answer book.
- 8. It is in your own interest to write legibly and to present your work neatly.
- 9. There is a **glossary** of words on the final page which will help you to understand exactly what the words printed in **bold** in the questions are asking you to do.

SECTION A PHYSICAL GEOGRAPHY

Answer ONE question from this section, **EITHER** Question 1 **OR** Question 2.

QUESTION 1 Climatology, geomorphology and ecology

1.1 South African synoptic weather map Study Figure 1.

Figure 1: Synoptic weather map: 2005-06-12



(1)

- 1.1.1 **Name** the high pressure cells labelled A and B.
- 1.1.2 **State** the atmospheric pressure (mb or hPa) at C and D. (1)
- 1.1.3 Below is a cross section from X to Y through the cold front of the temperate depression/mid-latitude cyclone. X and Y are indicated on Figure 1.



The table below shows the weather conditions being experienced along this cross section. Redraw this table in your answer book and fill in the missing details.

	Cold Sector	Cold Front	Warm Sector
Approximate Temperature	(i)	(ii)	18°C
Wind Direction	(iii)	Northerly	(iv)
Weather Conditions	Overcast	(v)	(vi)
Type of cloud	(vii)	(viii)	cumulus

1.1.4 The weather at Cape Town on 2005-06-12 was described as:"Overcast, windy, cold and wet". With reference to the synoptic weather map, explain the cause of each of these FOUR weather conditions.

- 1.1.5
- (a) **Describe** the weather being experienced at weather station E on the synoptic weather map. The weather station symbols for E are:



(3)

(3)

(4)

(4)

- (b) A berg wind is occurring at weather station E.
 - (i) Give THREE pieces of evidence, from the synoptic weather map, which prove that a berg wind is occurring at E.
 - (ii) Using a diagram, **explain** the development of such a wind. (3)

1.1.6 You are a weather forecaster on a luxury yacht which is cruising from Durban to Cape Town and is currently at position F on the weather map. You receive the following warning from the South African Weather Service: "Gale-force north-westerly winds (65km/hr) are expected to develop between Cape Point and Cape Agulhas, accompanied by very rough seas with a swell reaching 5 metres by evening".

Write a report of no more than 10 lines to the captain of the yacht in which you **explain** why the yacht needs to head for the safety of Mossel Bay harbour immediately.

(4)

(2)

(1)

(1)

1.2 Geomorphology, valley climate and ecology

Study Figure 2.

Figure 2: SA Landscape



[[]Source: Landforms and Landscapes in Africa: Pritchard]

- 1.2.1 (a) **Identify** the stream patterns at A and B. (2)
 - (b) **Explain** the development of both stream patterns you have described in 1.2.1 (a) above. (2)
- 1.2.2 The edge of the Great Escarpment labelled C is known as a watershed. With reference to Figure 2, **explain** this term.
- 1.2.3 Below is a longitudinal profile of the Gamka River from its source at D to E as shown on Figure 2.



- (a) **Explain** the term 'longitudinal profile of a river.'
- (b) What feature has formed at F and G?
- (c) Explain why the river maintains a steeper gradient between F and H compared with that between H and E.
 (2)

- 1.2.4 Draw the hillslope D I in your answer book and, on the profile, clearly mark the following slope elements:
 - crest
 - free face
 - talus slope
 - pediment slope.
- 1.2.5 The Interior Plateau, shown on Figure 2, is a feature associated with horizontal rock strata. Predict what will happen to this feature over the next 10 to 15 million years. Use diagrams to support your answer. (4)

1.2.6 Valley climate and ecology (refer to Figure 2).

- (a) During winter the farms in the Great Karoo Basin experience frequent frosts in the valleys of the Dwyka and Gamka Rivers.
 Explain how these frosts develop and also describe the effect of frost on agriculture in the area.
- (b) You are a prospective farmer who has been offered two farms, one at X and the other at Y. Name the farm you would choose, explain your choice and also say why you did not choose the other farm. (3)
- (c) **Discuss** how sheep farming in the Great Karoo Basin impacts negatively on the ecology of the area.

50 x 2 = 100 marks

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(4)

, í

(3)

(3)

QUESTION 2 Climatology, geomorphology, ecology and city climate

2.1 Tropical cyclones

Study Figure 3 which shows the path taken by Hurricane Katrina from 23 August to 30 August 2005.





[Source: National Hurricane Centre Website]

2.1.1 **Describe,** and give reasons for, the path taken by Hurricane Katrina from 24 August to 30 August.

2.1.2 When Hurricane Katrina passed over the State of Florida on 26 August, its winds were blowing at 120 km/hr. From 27 August until 29 August Hurricane Katrina strengthened and, at one stage, its winds reached 250 km/hr.

- (a) **Explain** what caused this dramatic increase in the strength of the hurricane between 27 and 29 August.
- (b) Why did the hurricane weaken when it passed over the coasts of Mississippi and Louisiana (30 August)?
- 2.1.3 You are a geographer working for an emergency rescue unit in the city of New Orleans. As Hurricane Katrina approaches you are asked to draw a **flow diagram** which will be used by the unit to plan how they are going to deal with the predicted devastation. Your answer must be in the form of a **flow diagram** and include the following:
 - The causes of the devastation
 - The devastation itself, and
 - The impact of this **devastation on** the physical and human environments of the city.

(2)

(1)

(1)

(15)

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2.1.4 At the same time that Hurricane Katrina was battering New Orleans, Super Typhoon Talim, with wind speeds of 220 km/hr, was causing extensive damage over east coast of China. Over 600 000 people had to be evacuated from low lying areas in the path of the typhoon and 117 people died when it passed over.

Give your view on why this tropical cyclone received very little publicity compared with that given to Hurricane Katrina. (2)

2.2 Structural landscapes

Study Photograph 1 (on page (i) of the insert), which shows Paarl Rock in Western Cape. Paarl Rock is one of the largest domes in South Africa.

2.2.1	Name the type of rock normally associated with such features.	(1)
2.2.2	Using neat sketches, describe the formation of this dome.	(2)

2.2.3 **Suggest** what could happen to this feature over millions of years. (2)

2.3 Geomorphology, valley climate and ecology

Study Photograph 2 (on page (i) of the insert), which shows the site of the Katse Dam on the Malibamatso River in Lesotho before construction commenced.

- 2.3.1 The Malibamatso River is in its middle course in Photograph 2. Give THREE pieces of evidence which support this. (3)
- 2.3.2 Because of the planned construction of the Katse Dam, a nucleated, linear settlement, which was sited at A on Photograph 2, had to be moved to make way for the dam.Give THREE reasons why the local people chose this site for their village.

Study Photograph 3 (on page (ii) of the insert), which shows the completed Katse Dam in the Malibamatso River Valley.

- 2.3.3 The dam has created a temporary base level in the longitudinal profile of the Malibamatso River. Using a sketch, explain the term 'temporary base level'. (2)
- 2.3.4 The Katse Dam has overflowed a number of times since its completion and it has been discovered that the Malibamatso River has been rejuvenated below the dam wall. Using evidence from Photograph 3, **explain** why the river has been rejuvenated and **describe** the features which have probably formed as a result of the rejuvenation.
- 2.3.5 What effect has the completion of the Katse Dam had on the ecology of the river valley above the wall?

(3)

(5)

(4)

2.4 City climate

Study Photograph 4 (on page (ii) of the insert), which shows a layer of smog over the Cape Flats, Cape Town Metropolitan Area, on a winter's morning.

(1)

242	Draw a neatly labeled	l diagram to ex	nlain the developm	nent of this smog	(4)
2.7.2	Draw a nearly labeled	ulugiani to ca	plain the developh	ient of this shog.	(+)

2.4.3 What can be done to try to reduce the amount of smog over this area? (2)

50 x 2 = 100 marks

SECTION B SETTLEMENT GEOGRAPHY

Answer ONE question from this section, **EITHER** Question 3 **OR** Question 4.

QUESTION 3 Rural and urban settlement

3.1 Urban development

Study the fact file below on Cosmo City, a new development north-west of Johannesburg. Figure 4 is a map showing the location of Cosmo City.

Cosmo City: Fact File

- R2 billion is available for bonds on low cost housing on 1200 hectares north-west of Johannesburg.
- Mixed income and multi-cultural housing for 70 000 people.
- Accessible to N14 to Pretoria and N1, and four major shopping centres.
- Not a 'township' but a community 12 schools, clinics, 15% of area for parks, libraries, churches, sports facilities and commercial and industrial sites, taxi ranks.
- 'Single unit planning' which will incorporate 12 500 housing units.

Figure 4: Location Map of Cosmo City



(4)

- 3.1.1 **Explain** how this urban development differs from the former South African 'apartheid' model of urban planning.
- 3.1.2 Cosmo City has been planned as a 'single unit'. **Differentiate** between 'single-unit planning' and 'piecemeal planning' of urban settlement. (2)
- 3.1.3 **Describe** the advantages of living in this new development (Cosmo City). (4)
- 3.1.4 Suggest, using a flow diagram or mind map, how this new urban development could impact on the surrounding areas. (NB your answer must be in the form of a flow diagram or mind map.) (3)

3.2 Shopping Areas

Study Photographs 5 and 6 (on page (iii) of the insert), showing two shopping areas in different sections of Ballito, a seaside town north of Durban, KwaZulu-Natal. Ballito was originally laid out as a small town in 1954.

3.2.1	(a)	Classify the TWO types of shopping areas represented by Photographs 5 and 6.	(2)
	(b)	Compare and contrast the shopping areas in Photographs 5 and 6.	(4)
	(c)	Suggest where and why the two shopping areas would be located in and around the town of Ballito.	(3)
3.2.2	(a)	The goods sold in the shops in Photograph 5 have changed with time. Suggest which products were available when the shops originally opened in the 1960s.	(2)
	(b)	Explain why shopping trends and goods sold have changed in the	
		shopping area depicted in Photograph 5.	(2)
	(c)	Comment on the sphere of influence and threshold population of the	
		shopping area shown in Photograph 6.	(2)

3.3 Rural Settlement

Study the fact file and accompanying location map, Figure 5, relating to developments in Sutherland, a small Karoo town in Northern Cape. (A computer generated image of the SALT is included.)

Fact File	Picture of SALT
"Stargazing (astronomy) is big business at Sutherland, and with the opening of the SALT telescope, it's going to get even bigger." <i>Country Life, November</i> 2005	
 The R200 million Southern African Large Telescope (SALT) – the largest telescope in the southern hemisphere - opened in 2005. 27 guest lodges and B & Bs, as well as hostels, have opened to accommodate 3000 visitors a month. Property prices have increased by 70% in one year. A golf estate with 470 stands is being developed with typical Karoo homes being built for R1,5 million each. 	

Figure 5: Location Map



(3)

(4)

(2)

- 3.3.1 **Explain** why Sutherland is an ideal location for 'stargazing' using the new large telescope. (2)
- 3.3.2 **Suggest** why tourists would visit this part of South Africa, other than for visiting the astronomical observatory.
- 3.3.3 **Comment** on how this rapid development in Sutherland could impact on the local people, the environment and the long-term 'stargazing' potential. (6)

3.4 Traditional rural settlement

Study Photograph 7 (on page (iii) of the insert), illustrating a traditional rural settlement north of Sutherland in the Namaqualand area. (See location map Figure 5 on page 11).

3.4.1 **Comment** on the

(a) physical site; and

(b) structure of this rural settlement.

3.4.2 The surrounding environment appears semi-arid.

- (a) **Justify** this statement.
- (b) **Suggest** how the family living here survives and **comment** on the significance of the modes of transport visible in the picture. (5)

50 x 2 = 100 marks

QUESTION 4 Urban and rural settlement

4.1 Township urban renewal

Study the information boxes on INK (Inanda, Ntuzuma and KwaMashu) and Soweto.

INK (Inanda, Ntuzuma and KwaMashu) Townships near Durban, KwaZulu-Natal	SOWETO (township south west of Johannesburg built in 1930s), Gauteng
The townships that comprise INK are located north of Durban. A population of over 600 000 live in this area and there is little social or administrative infrastructure and no Central Business District to provide employment. 70% of the residents travel to work outside their area, mostly to the industrial area to the south of Durban. The Bridge City project is being built by the Ethekwini municipality (Durban) to house a provincial hospital, business park, commercial centre, apartment blocks, taxi rank and tourist attractions.	The Orlando Ekhaya Project will see the construction of shopping centres, business nodes, recreational facilities, hotels and a waterfront development. This make-over will cost R400 million. Soweto's 3 million residents (who have a combined spending power of R9 billion) will spend their income in Soweto. There are 10 development initiatives planned for this 90 000 sq. m. precinct, e.g. 1 000 middle to upper-income homes, a rail link to assist the soccer World Cup in 2010, a regional shopping centre, a waterfront and boat club. This mixed-use development will encourage people to invest in Soweto and restaurants like "Wandie's Place" will thrive as more tourists arrive.

4.1.1 **Classify** these townships, where most of the residents travel to work outside the settlements in which they live. (1)

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(4)

- 4.1.2 **Explain** why these 'townships' still exist in post-apartheid South Africa. (3)
- 4.1.3 **List** FOUR examples of informal job-creating enterprises that would be visible in townships like these.
- 4.1.4 Predict how urban renewal projects such as these create opportunities for local residents to focus more on "succeeding and less on surviving". (3)

4.2 Distribution of urban and rural settlements

Study Figure 6, a tourist map of the west coast, north of Cape Town.





[ReuCon Printers, Club Mykonos]

4.2.1	Describe the situation of Club Mykonos (X on the map). ((2)
4.2.2	Vredenburg (Y on the map) could be described as a 'Central Place' – explain what you understand by this term.	(2)
4.2.3	Saldanha (S) and Velddrif (V) are both considered trade and transport towns. Suggest reasons for this classification.	(4)
4.2.4	Yzerfontein (Z) could be classified as a specialised town.	
	 (a) State what is meant by a 'specialised town'. (b) Design an advertisement for a travel magazine that would attract tourists to Yzerfontein. 	(1) (4)
4.2.5	 (a) Arrange the following central place settlements hierarchically according to size: Darling, Geelbek, Cape Town, Vredenburg (begin with the smallest central place). ((b) Suggest which settlement would be associated with higher order services and give an example of such a service ((2)
4.2.6	 (a) Describe FOUR reasons why people may leave this rural area and go to the bigger towns. 	(2)
	 (b) Suggest some counter-urbanisation policies that are being applied to this area. 	(4)

4.3 Rural Settlement

Study Photograph 8 (on page (iv) of the insert), of the which shows a typical rural settlement found in the Western Cape.

Write an essay of approximately 1 - 2 pages using these sub-headings as a guide:

- Classification of the settlement
- Site of the settlement
- The physical and social problems experienced by the inhabitants of this settlement, and
- Solutions to the problems you discussed.

(14)

50 x 2 = 100 marks

SECTION C REGIONAL GEOGRAPHY (SOUTH AFRICA)

Answer ONE question from this section, **EITHER** Question 5 **OR** Question 6.

QUESTION 5 South Africa: Regional Geography

5.1 Map of South Africa

Study Figure 7 (on page 17), which is a map of South Africa. Write down the numbers 1 to 15 in your answer book and the answer next to the corresponding number.

Note: Numbers 11 to 15 each have TWO answers.

Number 1	Neighbouring country	
Number 2	Province	
Number 3	Provincial capital	
Number 4	River	
Number 5	Biome (Natural vegetation)	
Number 6	Port	
Number 7	Ocean	
Number 8	Ocean current	
Number 9	Mountain range	
Number 10	Transfrontier Park $(10 x \frac{1}{2})$	= 5)
Number 11	Isohyet. What is its significance to agriculture in South Africa?	(1)
Number 12	Mineral mined here. What is the importance of this mineral to South	
	Africa?	(1)
Number 13	Crop grown here. What is the importance of this crop to South	
	Africa?	(1)
Number 14	New harbour and Industrial Development Zone (IDZ). What is its	
	importance to Eastern Cape?	(1)
Number 15	World Heritage Site. What is its importance to South Africa?	(1)

Figure 7: Map of South Africa

Note: Tshwane (Pretoria)



5.2 **Climate and vegetation imbalance**

Study Figure 8 (on page 19) which shows South Africa's Biomes (Natural Regions) and the climatic graphs for Port Nolloth, Cape Town and Durban.

5.2.1	Contrast the monthly rainfall of Cape Town with that of Durban.	(1)
5.2.2	Explain the contrast you have described in 5.2.1 above.	(1)
5.2.3	Why is the rainfall so low in Port Nolloth? Give a climatic explanation for this.	(1)
5.2.4	Explain the difference in mean annual temperature between Durban and Port Nolloth.	(1)
Study map.	Photograph 9 (on page (iv) of the insert), which was taken at Point A on the (Figure 8.)	
In 195 expan	53, a horticulturist, Acocks, predicted that the area of Karoo vegetation would d into the north east. This was a form of desertification.	
5.2.5	With reference to the photograph explain the term 'desertification'.	(1)
5.2.6	 As a concerned geographer you visit the area shown on Photograph 9 (A on Figure 8) and, following a full study of the farming in the area, you write an article for Earthyear Magazine in which you highlight: the causes of the degradation (destruction) of the natural vegetation in the area the effect this has had on agriculture in the area, and emphasise what should be done to try and restore the natural vegetation to its former state. 	(10)
5.2.7	Recent studies have shown that Acocks' predictions of the widespread invasion by Karoo vegetation into the north east have not been as widespread. There are areas, such as the one shown in Photograph 9, where degradation has occurred but not to the extent predicted.	
	Suggest TWO reasons why the desertification has not actually taken place to the extent predicted.	(2)



[Source: *The Geography of S.A. in a Changing World*: Fox and Rowntree]

5.3 **Population**

Study Figure 9 which shows the distribution of rural population in South Africa.

Figure 9: Rural population distribution (2005)



[Source: The Geography of S.A in a Changing World: Fox and Rowntree]

5.3.1	Briefly describe the distribution of the rural population in South Africa.	(2)
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- 5.3.2 **State** TWO reasons for this distribution pattern. (2)
- 5.3.3 **Suggest**, with reasons, what may happen to this pattern over the next ten years. (2)

5.4 Agriculture

Study Figure 10 which shows the lack of required agricultural services/facilities in South Africa (2005).



Figure 10:

Note: Former RSA means the former White farming areas of South Africa. Former homelands refers to homelands that existed during the apartheid era, e.g. Ciskei, Transkei, Lebowa.

[Source: Fast Facts SAIRR]

- 5.4.1 **Name** THREE services which are almost totally lacking in the former homelands. (3)
- 5.4.2 **Explain** why there is such a difference between the lack of services/facilities in the former homelands and in the former RSA. (4)

5.5 Foreign trade

"In 2003 the exports of South Africa's secondary industry exceeded the exports of primary products for the first time."

- 5.5.1 **Name** TWO secondary products and TWO primary products that South Africa exports. (2)
- 5.5.2 In a paragraph of not more than 10 lines, say why the situation, (referred to in statement 5.5 above), is very significant with regard to the future of the South African economy.

50 x 2 = 100 marks

(8)

QUESTION 6 South Africa: Regional Geography

6.1 Eco-tourism and poverty eradication

Study the location map, Figure 11, and read the extract below:

Figure 11:



"World Wildlife Fund (WWF) has donated the 14 500 hectare Karoo Nature Reserve (KNR) to the government to form the core of a new national park proposed for the area surrounding Graaff-Reinet in Eastern Cape. The Department of Environmental Affairs and Tourism (DEAT), the Peace Parks Foundation and S.A. National Parks Trust will invest over R8 million to develop facilities and ultimately link KNR to Mountain Zebra National Park, near Cradock, creating a unique Africa Karoo wildlife experience. Peter Beckett states that "through well-managed nature-based ecotourism" we have the sole copyright on the greatest show on earth, and as the rich nations of the world become increasingly manufactured environments and remote from the wild, so the queues will get longer to see our wildlife spectacles."

[Peter Beckett, 'Africa Geographic', November, 2005]

6.1.1	Defin	e ecotourism.	(2)
6.1.2	(a)	Explain why National Parks and Peace Parks are important to South Africa.	(3)
	(b)	Name any TWO of the National Parks in South Africa, other than those mentioned in this question.	(2)
6.1.3	Sugg envire	est what Beckett is referring to when he mentions "manufactured onments".	(2)
6.1.4	List peopl	THREE positive results that eco-tourism could bring to the local e with this new extended National Park in Eastern Cape.	(3)

6.2 Dam Project

Study the graph (Figure 12) showing water consumption in the Western Cape and read the information following it.

Figure 12:



[Source: Chapman and Le Maitre]

Contract awarded for R550 million Berg River Skuifraam Dam – Western Cape Environmental Impact Assessment (EIA) completed in 1999. • To be built on the Berg River near Franschhoek. • Will increase Western Cape's water by 18%. Construction to be completed by 2007. 600 jobs to be created. There will be a programme to clear the catchment area of "water guzzling" alien plants. 6.2.1 **Define** the term Environmental Impact Assessment (EIA) and **explain** why such assessments are necessary. (2)6.2.2 (a) Name the biome in which the Berg River Dam is being built. (1)Name any alien plant that has invaded the biome in this area. (b) (1)(c) **Explain** the need to remove alien plants from this biome. (2)6.2.3 (a) Compare the water consumption of irrigation/afforestation and mining/industrial on Figure 12. (2) Explain why water is not used extensively in the mining/industry (b) sector in the Western Cape. (2)List reasons why irrigation is necessary in the south western part of (c)

6.2.4 **Outline** the purpose of building dams like the Berg River Skuifraam Dam in South Africa.

the Western Cape.

(3)

(4)

6.3 Economic Activities

- 6.3.1 **List** FOUR primary economic activities in South Africa. (2)
- 6.3.2 **Distinguish** between light and heavy industry, giving an example of each. (4)
- 6.3.3 Write a report of one to two pages for an overseas investor in which you discuss the factors affecting the development and location of secondary/manufacturing industry in any ONE particular area in South Africa. Use the following sub-headings:
 - Physical factors
 - Economic factors
 - Human factors
 - Environmental impact
 - **NB:** Make sure you note which specific industrial area you are referring to.

50 x 2 = 100 marks

Total: 300 marks

GLOSSARY

WORD	MEANING
Compare and	Compare: To point out or show both similarities and differences
contrast	Contrast: To stress the differences, dissimilarities or unlikeness of things
Classify	To divide into groups or types so that things with similar characteristics are in the same group
Comment	To give your opinion or to make a statement about something; to write generally about something
Define	To give the precise meaning of
Describe	To list the main characteristics of something; to give an account of [Note: a diagram or map may be part of a description.]
Discuss	To examine or to investigate by argument the various aspects of a statement
Design	To plan something, perhaps to draw
Differentiate Distinguish	To see or to understand the difference between one thing and another
Explain	To make clear or plain or to make sure that the reader understands what is being said
Flow Diagram	A diagram representing the sequence of actions in a particular process or activity
Identify	To give the essential characteristics of
Justify	To prove or give reasons or conclusions using logical argument
List	To present a list of names, facts, aspects or items
Mind Map	A diagram showing how different components of a system or topic relate to one another
Name	To state something; to list; to give; to identify; to mention
Outline	To give the main features or general principles of a subject
Predict	To say what is expected to happen; to foretell; to say in advance
State	To present information or details plainly, directly and simply, without discussion
Suggest	To propose an explanation or a solution by way of a plan or a suggestion

(15)