



education

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**NATIONAL
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GRADE 12

GEOGRAPHY P1

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MARKS: 300

TIME: 3 hours

This question paper consists of 16 pages and 1 annexure of 11 pages.



INSTRUCTIONS AND INFORMATION

1. The question paper consists of four questions.
2. Answer ANY THREE questions of 100 marks each.
3. All diagrams are included in the annexure.
4. Number all your answers in the CENTRE of the line.
5. Leave a LINE between subsections answered.
6. Start each question at the top of a NEW page.
7. Number your answers correctly according to the numbering system used in this question paper.
8. Do NOT write in the margins of the ANSWER BOOK.
9. ENCIRCLE the numbers of the questions that you have answered on the front page of the ANSWER BOOK.
10. Where possible, illustrate your answers with labelled diagrams.
11. Write neatly and legibly.



SECTION A: WEATHER AND CLIMATE, FLUVIAL PROCESSES AND STRUCTURAL LANDFORMS

Answer at least ONE question from this section.

QUESTION 1

- 1.1 Refer to FIGURE 1.1. Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (1.1.1 – 1.1.5) in the ANSWER BOOK.
- 1.1.1 The diagram illustrates conditions that exist during daytime.
- 1.1.2 The graph illustrates a temperature inversion.
- 1.1.3 The downward flow of air illustrated in FIGURE 1.1 is known as anabatic air flow.
- 1.1.4 The zone marked **X** is the warm thermal belt.
- 1.1.5 The heat loss is as a result of terrestrial radiation. (5 x 2) (10)
- 1.2 Refer to FIGURE 1.2 showing a landscape found in South Africa. Four options are provided as possible answers to the following questions. Choose the answer and write only the letter (A – D) next to the question number (1.2.1 – 1.2.5) in the ANSWER BOOK, for example 1.2.6 A.
- 1.2.1 The landscape illustrated in FIGURE 1.2 is associated with ... rock.
- A massive igneous
B horizontal sedimentary
C tilted igneous
D tilted sedimentary
- 1.2.2 Landform **P** is a ...
- A mesa.
B cuesta.
C butte.
D tor.
- 1.2.3 Slope element **Z** is the ...
- A crest.
B cliff.
C talus.
D pediment.



1.2.4 The landscape is typical of ... regions in South Africa.

- A humid and hot
- B dry and hot
- C humid and cold
- D dry and cold

1.2.5 The landscape is typical in ...

- A Mpumalanga.
- B KwaZulu-Natal.
- C the Northern Cape.
- D Gauteng.

(5 x 2) (10)

1.3 Refer to FIGURE 1.3 showing the global distribution of the Earth's pressure belts, planetary wind belts and the tri-cellular circulation of air and answer the questions that follow. The planetary wind system is the result of the coriolis force which causes air to deflect.

1.3.1 (a) What is responsible for the existence of the coriolis force?
(1 x 2) (2)

(b) How does the strength of the coriolis force change from the equator to the poles?
(1 x 2) (2)

(c) Explain how the coriolis force results in the planetary wind belts as illustrated in FIGURE 1.3.
(2 x 2) (4)

1.3.2 (a) Identify the planetary wind belts labelled **A** and **B** respectively.
(2 x 2) (4)

(b) In which ONE of the planetary wind belts mentioned in QUESTION 1.3.2(a) do mid-latitude cyclones develop?
(1 x 2) (2)

(c) Taking your answer to QUESTION 1.3.2(b) into account, give the general direction of movement of a mid-latitude cyclone.
(1 x 2) (2)

1.3.3 (a) At which position, **D**, **E** or **F**, does one expect to find convectional thunderstorms?
(1 x 2) (2)

(b) Explain your answer to QUESTION 1.3.3(a).
(2 x 2) (4)



- 1.4 Refer to FIGURE 1.4 showing a satellite image and synoptic weather chart for 26 June 2007. Find the two mid-latitude cyclones labelled **P** and **Q**. Carefully read through the weather update and answer the following questions.
- 1.4.1 (a) Provide evidence from the synoptic chart indicating that **P** and **Q** are mid-latitude cyclones. (1 x 2) (2)
- (b) Which one of the two mid-latitude cyclones, **P** or **Q**, is most likely to be older? (1 x 2) (2)
- (c) Give ONE reason for your answer to QUESTION 1.4.1(b). (1 x 2) (2)
- 1.4.2 (a) With reference to the satellite image and synoptic weather chart, explain why the Eastern Cape is experiencing rain and very cold conditions. (4 x 2) (8)
- (b) Which weather condition, not mentioned in the weather report, is clearly visible on the satellite image? (1 x 2) (2)
- (c) Give ONE reason why it is important for people living in the Eastern Cape to be made aware of the weather conditions mentioned in QUESTION 1.4.2(a). (1 x 2) (2)
- 1.5 The heavy rainfall associated with the mid-latitude cyclone mentioned above, could result in major flooding in all the affected regions. Refer to FIGURE 1.5 showing a flow hydrograph that would be typical of all the affected regions. The mismanagement of drainage basins in the Eastern Cape will change the flow characteristics of many drainage basins in this province.
- 1.5.1 (a) What is a *flow hydrograph*? (1 x 2) (2)
- (b) At what time was the rainfall peak reached? (1 x 2) (2)
- (c) At what time was the flood peak reached? (1 x 2) (2)
- (d) Calculate the lag time as indicated in FIGURE 1.5. (1 x 2) (2)
- (e) Explain why the lag time exists. (2 x 2) (4)
- 1.5.2 (a) Name TWO ways in which drainage basins are changed through human intervention. (2 x 2) (4)
- (b) Describe how the mismanagement of drainage basins will change any ONE of the following flow characteristics of river systems in the Eastern Cape: lag time, flood peak, drainage density. (1 x 2) (2)
- (c) Give reasons why the change that you described in QUESTION 1.5.2(b) will occur as a result of mismanagement of drainage basins. (2 x 2) (4)
- (d) Explain why it is important to manage drainage basins properly. (3 x 2) (6)



- 1.6 FIGURE 1.6 illustrates the development of a structural landform associated with massive igneous rock.
- 1.6.1 Identify the landforms labelled **G** and **H** respectively. (2 x 2) (4)
- 1.6.2 Name the original underground igneous landform from which landforms **G** and **H** originated. (1 x 2) (2)
- 1.6.3 Briefly explain how landform **H** develops. (3 x 2) (6)
- [100]**

QUESTION 2

- 2.1 Refer to FIGURE 2.1, an extract from a synoptic weather chart. Choose the correct term(s) from those given in brackets to make EACH of the statements below TRUE. Write only the term(s) next to the question number (2.1.1 – 2.1.5) in the ANSWER BOOK.
- 2.1.1 The synoptic chart shows typical (winter/summer) conditions.
- 2.1.2 The low pressure (L) north of Cape Town is known as a (coastal low/temperate cyclone).
- 2.1.3 Dew point temperature at Upington is (32 °C/15 °C).
- 2.1.4 Wind direction at Cape Town is (southwest/northeast).
- 2.1.5 Pretoria is experiencing (drizzle/rain). (5 x 2) (10)
- 2.2 Refer to FIGURE 2.2 showing various characteristics/landforms associated with a drainage basin. Identify the characteristics/landforms numbered 2.2.1 to 2.2.5. Choose the correct characteristic/landform from the list given below.
- confluence; watershed; first order stream; river mouth; meander; base flow
- Write down the number of the feature and next to it the correct term. (5 x 2) (10)



- 2.3 Refer to FIGURE 2.3 showing the formation of a storm line.
- 2.3.1 What is meant by the term *storm line* as mentioned in the statement above? (1 x 2) (2)
- 2.3.2 Describe some of the processes (air movement, influx of air) which lead to line thunderstorms occurring. (3 x 2) (6)
- 2.3.3 What name is given to the band of low pressure that extends across the South African interior along which line thunderstorms develop? (1 x 2) (2)
- 2.3.4 Do line thunderstorms develop on the eastern or western side of the band of low pressure mentioned in QUESTION 2.3.3? (1 x 2) (2)
- 2.3.5 Discuss the consequences of line thunderstorms for farming activities in South Africa's interior. (2 x 2) (4)
- 2.4 FIGURE 2.4 shows some extreme weather conditions that have been experienced lately. Africa's population is the most vulnerable to climatic changes that are taking place. Scientists blame global warming for these extreme weather conditions. Global warming is thought to be the result of the emission of more greenhouse gases into the atmosphere. In order to reduce the emission of greenhouse gases into the atmosphere, many countries signed the Kyoto Protocol in 1997.
- 2.4.1 What is the meaning of the term *global warming*? (1 x 2) (2)
- 2.4.2 Briefly explain why global warming is taking place. (3 x 2) (6)
- 2.4.3 With reference to FIGURE 2.4, identify TWO extreme weather conditions that are most likely to be experienced by Africa's population. (2 x 2) (4)
- 2.4.4 Why do you think the African population is the most vulnerable to climate change? (2 x 2) (4)
- 2.4.5 In your opinion, do you think the signing of the Kyoto Protocol was successful in reducing global warming? Give reasons for your answer. (3 x 2) (6)



- 2.5 Study FIGURE 2.5 based on fluvial processes and drainage basins. After heavy rainfall in this drainage basin, the river will not reach its discharge peak immediately. This difference in time between the rainfall peak and the discharge peak is known as the lag time.
- 2.5.1 Identify the drainage patterns at **D** and **E** respectively. (2 x 2) (4)
- 2.5.2 Give ONE example of a natural feature that will restrict the river's discharge. (1 x 2) (2)
- 2.5.3 Give ONE example of a man-made feature that will restrict the river's discharge. (1 x 2) (2)
- 2.5.4 Suggest TWO positive effects that the deciduous woodland (forest) is likely to have on the catchment area. (2 x 2) (4)
- 2.5.5 Explain why there is a lag time between peak rainfall and peak discharge. (2 x 2) (4)
- 2.5.6 Where, at station **A** or station **B**, will the lag time be longer? (1 x 2) (2)
- 2.5.7 Explain your answer to QUESTION 2.5.6. (1 x 2) (2)
- 2.6 Refer to FIGURE 2.6 illustrating the cross profile of a river, before answering the questions that follow.
- 2.6.1 Identify the river banks (slopes) **C** and **D** respectively. (2 x 2) (4)
- 2.6.2 Why does deposition occur on the inner bend? (1 x 2) (2)
- 2.6.3 Give and explain ONE way in which a river carries its load. (2 x 2) (4)
- 2.6.4 Explain why flooding is more likely to occur after heavy rains along the bend of a river. (1 x 2) (2)
- 2.7 Rocks have different types of strata which give rise to unique landforms. Use FIGURE 2.7 to observe some of these landforms and answer the questions that follow.
- 2.7.1 Identify the features (landforms) labelled **E** and **F**. (2 x 2) (4)
- 2.7.2 Give ONE difference between feature (landform) **E** and **F**. (1 x 2) (2)
- 2.7.3 Of what value is this landscape to man? Give TWO reasons. (2 x 2) (4)
- [100]**



SECTION B: PEOPLE AND PLACES: RURAL AND URBAN SETTLEMENTS, PEOPLE AND THEIR NEEDS

Answer at least ONE question from this section.

QUESTION 3

3.1 Refer to FIGURE 3.1 showing a section of a side view of a settlement. Choose the correct term(s) from those given in brackets to make EACH of the statements below TRUE. Write only the term(s) next to the question number (3.1.1 – 3.1.5) in the ANSWER BOOK.

- 3.1.1 The settlement shown is a/an (rural/urban) settlement.
- 3.1.2 The settlement shows a (nucleated/dispersed) pattern.
- 3.1.3 The side view of this settlement is referred to as the (plan view/urban profile) of the settlement.
- 3.1.4 The many tall buildings are a result of (low/high) land values in the settlement.
- 3.1.5 This settlement will occupy a (high/low) position in the urban hierarchical rank order. (5 x 2) (10)

3.2 Refer to FIGURE 3.2. Choose a description from COLUMN B that matches an item in COLUMN A. Write only the letter (A – F) next to the question number (3.2.1 – 3.2.5) in the ANSWER BOOK, for example 3.2.6 G.

COLUMN A		COLUMN B	
3.2.1	General dealer	A	value added to raw materials
3.2.2	Tyre factory	B	largest contributor to South Africa's GDP
3.2.3	Informal sector	C	service provider with a small sphere of influence
3.2.4	Formal sector	D	the sector where businesses are not registered with government and occupy whatever premises are available
3.2.5	Pick 'n Pay	E	area in the centre of the city set aside for commercial functions
		F	service provider of a high order

(5 x 2) (10)



- 3.3 Refer to FIGURE 3.3 showing three settlements that differ in size and complexity. Pine Village and Kingstown are considered to be central places. All three settlements occupy different positions in the urban hierarchy.
- 3.3.1 Refer to the settlement known as Rocklands in FIGURE 3.3. Classify this settlement according to the following criteria:
- (a) Size and complexity (1 x 2) (2)
- (b) Pattern (1 x 2) (2)
- 3.3.2 Refer to the settlements known as Pine Village and Kingstown in FIGURE 3.3. The spheres of influence and range of these two settlements differ from one another.
- (a) Which settlement, Pine Village or Kingstown, will have a greater sphere of influence and range? (1 x 2) (2)
- (b) Give ONE reason for your answer to QUESTION 3.3.2(a). (1 x 2) (2)
- (c) According to the hierarchical rank order of settlements, which settlement, Pine Village or Kingstown, will have a higher rank order? (1 x 2) (2)
- (d) Give ONE reason for your answer to QUESTION 3.3.2(c). (1 x 2) (2)
- (e) Describe the relationship between the number of settlements of a specific rank order and the hierarchical order of settlements. (1 x 2) (2)
- 3.3.3 Refer to FIGURE 3.3. Many people will leave Rocklands and Pine Village to settle in Kingstown.
- (a) Name ONE physical factor that could result in people leaving Rocklands to settle in Kingstown. (1 x 2) (2)
- (b) Name ONE socio-economic factor that could result in people leaving Pine Village to settle in Kingstown. (1 x 2) (2)
- (c) What are the consequences of the above-mentioned migration of people to Kingstown for the rural landscape? (2 x 2) (4)
- (d) Describe TWO measures that can be introduced to slow down the migration of people from rural areas to Kingstown. (2 x 2) (4)



- 3.4 Many people migrating to Kingstown will not be able to find suitable accommodation in the formal housing sector of this settlement and will find themselves living in informal settlements.

The following extract (adapted) was taken from the *South African Geographical Journal*, November 1997. In the ten years since this article was published, not much has changed for people living in informal settlements. Also refer to TABLE 3.4 before answering the following questions.

**A HOME IS MORE THAN A HOUSE:
ENVIRONMENTAL CONSIDERATIONS IN LOW COST HOUSING
DEVELOPMENT IN KHAYELITSHA, CAPE TOWN**

An investigation in Khayelitsha, a large township on the edge of Cape Town, showed the degree to which its residents were trapped, figuratively, within its boundaries during the course of their daily lives. Low-income shack inhabitants find no worthwhile features in their physical environment but value many socio-economic features. It is argued there is strong evidence to suggest that insufficient emphasis has been placed on public intervention to develop the world beyond the shack and to create a better looking, functionally efficient and socially stimulating public environment which would help to relieve the alienating circumstances imposed by poverty and life in a shack.

- 3.4.1 What is the main reason for the development of informal settlements? (1 x 2) (2)
- 3.4.2 With reference to TABLE 3.4, give the highest ranked dislike regarding the social living environment. (1 x 2) (2)
- 3.4.3 With reference to TABLE 3.4, which problems should be addressed to 'create a better looking, functionally efficient and socially stimulating environment'? (2 x 2) (4)
- 3.4.4 Many people living in informal settlements find employment in the informal sector of the economy. Give ONE example of such an informal sector activity. (1 x 2) (2)
- 3.4.5 Today many countries are legalising/formalising the establishment of informal settlements. Should the same be done in South Africa? Explain your answer. (3 x 2) (6)
- 3.5 Refer to FIGURE 3.5. From the diagram give ONE:
- 3.5.1 Primary activity (1 x 2) (2)
- 3.5.2 Secondary activity (1 x 2) (2)
- 3.5.3 Tertiary activity (1 x 2) (2)



- 3.5.4 Coal mining is extremely important for South Africa's economic development. The fact that large quantities of coal are exported as a raw material affects South Africa's balance of payment negatively. The sustainable development of the coal mining industry is important to ensure that future generations do not run out of this valuable resource.
- (a) Discuss the importance of the coal mining industry for the development of South Africa's economy. (2 x 2) (4)
- (b) Why will South Africa's balance of trade be affected negatively if large quantities of coal are exported as a raw material? (2 x 2) (4)
- (c) Mining activities result in various environmental injustices. Name TWO environmental injustices that could possibly result from the coal mining activity north of Senzinani. (2 x 2) (4)
- (d) What can be done to rectify (fix) the environmental injustices mentioned in QUESTION 3.5.4(c)? (3 x 2) (6)
- 3.5.5 Transport is essential (important) for the economic development of a country. The settlement illustrated in FIGURE 3.5 is well-connected to its surroundings.
- (a) Why can we say that the settlement illustrated in FIGURE 3.5 is well-connected to its surroundings? (1 x 2) (2)
- (b) Discuss the importance of a well-developed transport network for the development of South Africa's economy. (3 x 2) (6)
- (c) An increase in South Africa's urban population has had a negative effect on transport and transport facilities in South Africa. Explain why this is the case. (3 x 2) (6)
- [100]**



QUESTION 4

4.1 Use FIGURE 4.1 to assist you to answer the question below. Choose a term from the list provided that will match each of the statements labelled A to J. Write only the letter (A – J) and the selected term in the ANSWER BOOK.

LIST OF TERMS:

secondary activities; informal trading; quaternary activities; rural-urban fringe; positive balance of trade; mining; rural settlement; gross national product; dispersed settlement; nucleated settlement; site; break-of-bulk-point; tertiary activities; green belt

A _____	type of settlement referred to as unifunctional
B _____	pattern associated with a single farmstead
C _____	zone where rural and urban functions merge
D _____	where one type of transport is replaced by another
E _____	precise land on which a settlement is located
F _____	activity concerned with the processing of raw material
G _____	extraction of raw materials from the Earth
H _____	an open space in a settlement for recreation
I _____	more goods are exported than imported at the harbour
J _____	specialised skills and information available in the CBD



- 4.2 Read the article below that looks at the relationship between Aids and agriculture in Zambia before answering the questions that follow.

AIDS: THE EFFECT ON SUBSISTENCE FARMERS

According to the World Health Organisation (WHO), HIV/Aids poses the greatest threat to human health world wide. For this reason Aids has been described as a pandemic. It knows no bounds geographically, socially, ethnically and economically. Globally about 34,3 million people are infected.

Africa has generally been affected to a higher degree than other parts of the world. About 21 million people in sub-Saharan Africa are HIV positive. Although the rate is higher in urban areas, the transfer of the virus to rural populations is seen as a growing problem. Returning migrant workers and relatives carry the virus to rural communities.

Aids poses a number of economic threats to rural Zambia in the form of labour shortages and increased production costs. Aids has attacked the one resource that poor farmers can rely upon, namely their own and their family's labour. Some households engage in labour substitution but this is a problem. Removal of children from school is also an option ...

[Adapted from: *Geography Review*, Richard Byrne]

- 4.2.1 Why is AIDS referred to as a pandemic? (1 x 2) (2)
- 4.2.2 Explain the role of migrants in transferring the HIV/Aids virus to rural communities. (2 x 2) (4)
- 4.2.3 Name THREE negative effects that HIV/Aids is having on rural Zambia. (3 x 2) (6)
- 4.2.4 Why do you think that labour substitution is a problem as indicated in the article? (1 x 2) (2)
- 4.2.5 Suggest TWO measures that the government of Zambia can put in place to control the problem of the HIV/Aids pandemic. (2 x 2) (4)



- 4.3 Read the excerpt below on urban population growth and then answer the questions.

GOVERNMENTS URGED TO PLAN FOR RISE IN URBAN DWELLERS

Governments must act now to prepare for a massive increase in urban populations especially in Africa, Asia and Latin America. The urban population of Africa and Asia is growing by a million people a week. Discouraging migration to cities by limiting homes only leads to the growth of slums. It is a misconception that urban growth is a result of migration only. Urban reproduction is also a reason. Empowering women and improving reproductive health is important ...

[Adapted from: *Daily News Correspondent*, 2007]

- 4.3.1 The extract hints at TWO major causes of urbanisation. Name them. (2 x 2) (4)
- 4.3.2 What does the term *urbanisation* mean? (1 x 2) (2)
- 4.3.3 Name THREE challenges that cities face as a result of rapid urbanisation. (3 x 2) (6)
- 4.3.4 In which land use zone are slums likely to develop? (1 x 2) (2)
- 4.3.5 How will empowering women help in addressing the problem of urbanisation? (2 x 2) (4)
- 4.3.6 Explain TWO measures that can be put in place to make urban areas more sustainable. (2 x 2) (4)
- 4.4 Answer the following questions on industrial development in South Africa.
- 4.4.1 To which economic sector does industrialisation belong? (1 x 2) (2)
- 4.4.2 What is the meaning of *industrial agglomeration*? (1 x 2) (2)
- 4.4.3 Explain THREE ways in which industrialisation contributes to the economic development of South Africa. (3 x 2) (6)
- 4.4.4 Explain any TWO ways that retard industrial development in South Africa. (2 x 2) (4)
- 4.4.5 Explain, using examples, how functional incompatibility affects the location of heavy industries. (2 x 2) (4)



4.5 Agriculture is an important pillar in the South African economy. Below is a balance sheet showing the supply and demand (consumption) for wheat in South Africa.

PROJECTED ANNUAL CEREAL BALANCE SHEET FOR WHEAT FOR THE 2007/08 MARKETING SEASON	
Wheat	(1 000 tons)
Supply	
Opening stocks	850
Commercial production	1 727
Subsistence agriculture	9
Total domestic supply	2 586
Consumption	
Human	2 798
Animal	14
Other	15
Total domestic consumption	2 827
Plus: Exports	125
Total demand	2 952
Net shortage/surplus	?

- 4.5.1 What is the actual amount of wheat that is expected to be produced in 2007/2008 in South Africa? (1 x 2) (2)
- 4.5.2 Will South Africa be able to meet its total domestic demand for wheat? Explain your answer. (2 x 2) (4)
- 4.5.3 Calculate the net shortage/surplus wheat production. (1 x 2) (2)
- 4.5.4 Why is the contribution of subsistence farmers to meet wheat production so low? (2 x 2) (4)
- 4.5.5 State THREE ways in which agriculture generally contributes to the economy of South Africa. (3 x 2) (6)
- 4.5.6 Explain how water availability affects the economic development of rural areas. (2 x 2) (4)

[100]

GRAND TOTAL: 300

