NATIONAL SENIOR CERTIFICATE

GRADE 10

NOVEMBER 2018

GEOGRAPHY P1

MARKS: **225**

TIME: **3 hours**

This question paper consists of 16 pages and an addendum of 12 pages.

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 ADDENDUM.
4. Leave a line between subsections of questions answered.
5. Start EACH question on a NEW page.
6. Number the answers correctly according to the numbering system used in this question paper.
7. Number the answers in the centre of the line.
8. Do NOT write in the margins of the ANSWER BOOK.
9. Draw fully labelled diagrams when instructed to do so.
10. Answer in FULL SENTENCES, except where you have to state, name, identify or list.
11. Write neatly and legibly.

SECTION A: THE ATMOSPHERE AND GEOMORPHOLOGY

Answer at least ONE question in this section. If you answer ONE question in SECTION A, you MUST answer TWO questions in SECTION B.

QUESTION 1

1.1 Study the following weather station model of Butterworth FIGURE 1.1 and answer the questions below.

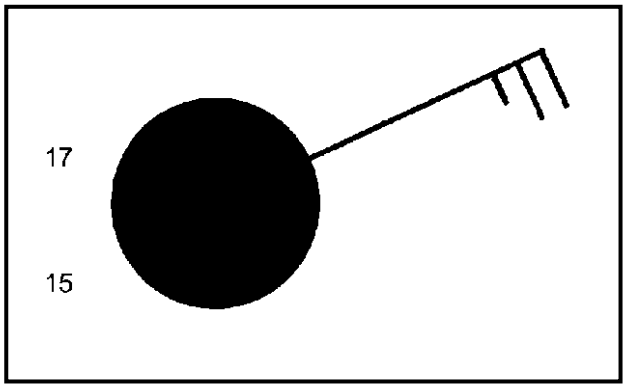

FIGURE 1.1

Use the weather station model to write the script for the television weather presenter's program. In your script outline the following weather properties:

1.1.1 Dew point temperature

1.1.2 Air temperature

1.1.3 Cloud cover

1.1.4 Wind direction

1.1.5 Wind speed in knots

1.1.6 Precipitation

1.1.7 Is the atmosphere unsaturated or saturated with water vapour?

(7 x 1) (7)

1.2 Match the terms in COLUMN B with the descriptions in COLUMN A. Write only the correct letter (A–I) next to the corresponding question number (1.2.1–1.2.8) in your ANSWER BOOK, for example 1.2.8 K.

COLUMN A		COLUMN B	
1.2.1	The study of Earth's physical features and processes that formed them	A	sediments
1.2.2	Large cracks which form as a result of continuous tension and compression forces	B	Crust
1.2.3	Solid outer layer of the Earth, 5–70 km thick	C	Fossil
1.2.4	Pieces of rock, clay and other substances from eroded rocks which accumulate at the bottom of a lake or sea	D	Geomorphology
1.2.5	The remains of dead plants or animals that have been preserved in rock	E	Fault
1.2.6	A bending of rocks into folds due to strong compressional forces from the inside	F	Mantle
1.2.7	The layer of molten material around the Earth's core	G	Quartzite
1.2.8	A metamorphic rock formed from sandstone, quite resistant to erosion	H	Folding
		I	Batholith

(8 x 1) (8)

1.3 Refer to FIGURE 1.3 showing ozone depletion.

1.3.1 Define the term *ozone depletion.* (1 x 1) (1)

1.3.2 In which layer of the atmosphere is ozone concentrated? (1 x 1) (1)

1.3.3 What does the acronym CFC stand for? (1 x 1) (1)

1.3.4 Identify THREE causes of ozone depletion in FIGURE 1.3. (3 x 1) (3)

1.3.5 Describe ONE way in which the depletion of the ozone layer will affect humans. (1 x 2) (2)

1.3.6 In a paragraph of approximately EIGHT lines, discuss sustainable strategies (ways) to reduce ozone depletion. (4 x 2) (8)

1.4 Refer to FIGURE 1.4 showing a cloud type.

1.4.1 Label **A** and **B** on the diagram as *warm air* and *cold air* respectively. (2 x 1) (2)

1.4.2 Identify the type of cloud in FIGURE 1.4. (1 x 1) (1)

1.4.3 (a) Is this cloud type associated with *snow* or *lighting?* (1 x 1) (1)

(b) Justify your answer in QUESTION 1.4.3(a) by providing TWO reasons. (2 x 2) (4)

1.4.4 Thunderstorm is another form of precipitation. Discuss ONE positive and TWO negative impacts of thunderstorms on people and the environment. (3 x 2) (6)

1.5 Carefully read the extract in FIGURE 1.5 on earthquakes.

1.5.1 Provide a geographical term for the following:

(a) The vibration in the Earth's crust due to sudden movements of the crust along a fault

(b) The point on the Earth's surface immediately above the focus of an earthquake (2 x 1) (2)

1.5.2 Give the magnitude of this earthquake and the number of people who died respectively. (2 x 1) (2)

1.5.3 Which instrument is used to measure the magnitude of an earthquake? (1 x 1) (1)

1.5.4 Explain why most earthquakes happen close to plate boundaries. (1 x 2) (2)

1.5.5 Briefly describe the negative results or damage caused by the earthquake in Kashmir. (2 x 2) (4)

1.5.6 Discuss why less developed countries are unable to cope with earthquakes than more developed countries. (2 x 2) (4)

1.6 Refer to FIGURE 1.6 showing the structure of the Earth.

1.6.1 Name the layers labelled **X**, **Y** and **Z**. (3 x 1) (3)

1.6.2 Copy the table below and fill in the following thicknesses for each layer to complete it. 1200 km, 5 to 90 km and 1 200 km.

LAYER	**THICKNESS**
X	
Y	
Z	

(3 x 1) (3)

1.6.3 Is the temperature change decreasing or increasing as one moves from layer **Y** to layer **Z**? (1 x 1) (1)

1.6.4 Layer **Z** consists of TWO layers. Name these TWO layers. (2 x 1) (2)

1.6.5 Explain how layer **X** results in volcanic activity. (1 x 2) (2)

1.6.6 Describe TWO ways in which the layer labelled **Z** is important to humans. (2 x 2) (4)

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QUESTION 2

2.1 Various options are provided as possible answers to the following questions. Choose the correct answer and write only the letter (A–D) next to the question number (2.1.1–2.1.8) in the ANSWER BOOK, for example 2.1.9 D.

2.1.1 Which of the following is not a greenhouse gas?

A Methane
B CFC
C Carbon dioxide
D Oxygen

2.1.2 Incoming solar radiation is called …

A convection.
B insolation.
C reflection.
D conduction.

2.1.3 The warm ocean current found along the east coast of South Africa is the … current.

A Indian
B Benguela
C Mozambique
D Kuroshio

2.1.4 Clouds of great vertical extension are …

A cumulo-stratus.
B cumulo-nimbus.
C cirrus.
D strato-cumulus.

2.1.5 Lines joining places of the same pressure:

A Isotherms
B Isobars
C Longitudinal lines
D Latitudinal

2.1.6 The layers of the atmosphere where there is inversion of temperature increase are the …

A troposphere and thermosphere.
B mesosphere and stratosphere.
C stratosphere and thermosphere.
D troposphere and mesosphere.

2.1.7 Convectional rain is the type of rainfall that is common in the … Province during summer.

A Free State
B Western Cape
C Eastern Cape
D Gauteng

2.1.8 Water vapour is moisture in the atmosphere in its … state.

A liquid
B gaseous
C solid
D condensation (8 x 1) (8)

2.2 Refer to FIGURE 2.2 which shows various igneous intrusions.

2.2.1 Label the igneous intrusions indicated by letters **A**, **B, C** and **D** as dyke, sill, batholith and laccolith. (4)

2.2.2 Name the process that is responsible for the exposure of intrusive igneous features on the Earth surface. (1)

2.2.3 Which letter indicates a volcanic pipe? (1)

2.2.4 Name ONE intrusive igneous feature that is associated with granite. (1)

2.3 Refer to FIGURE 2.3 which shows a rainfall type.

2.3.1 Is the type of rainfall depicted by FIGURE 2.3, a convectional rainfall or a frontal rainfall? (1 x 1) (1)

2.3.2 Give the name of the boundary between warm air and cold air. (1 x 1) (1)

2.3.3 Identify warm air and cold air in FIGURE 2.3 as sinking or rising air respectively. (2 x 1) (2)

2.3.4 (a) Are clouds likely to form in **X** or **Y**? (1 x 1) (1)

(b) Justify your answer in QUESTION 2.3.4 (a) by providing ONE reason. (1 x 2) (2)

2.3.5 In a paragraph of approximately EIGHT lines, discuss the positive and negative impact of the rainfall type mentioned in QUESTION 2.3.1 in the Western Cape Province. (4 x 2) (8)

2.4 Carefully read the case study in FIGURE 2.4 about drought in Ethiopia as a result of climate change.

2.4.1 Define the term *drought.* (1 x 1) (1)

2.4.2 Mention TWO human causes of droughts in the case study. (2 x 1) (2)

2.4.3 Provide TWO effects of drought on the people of Ethiopia. (2 x 2) (4)

2.4.4 Drought is a threat to the environment. Discuss TWO point of evidence from the case study to support this statement. (2 x 2) (4)

2.4.5 Describe TWO sustainable strategies that can be put in place to manage drought. (2 x 2) (4)

2.5 Study the extract in FIGURE 2.5 about tsunamis.

2.5.1 Differentiate between *tsunami* and an *earthquake.* (2 x 1) (2)

2.5.2 Excluding South Africa, list TWO countries affected by this tsunami. (2 x 1) (2)

2.5.3 Give the total number of people killed in South Africa. (1 x 1) (1)

2.5.4 Explain why South Africa had few deaths as compared to other countries affected by this tsunami. (1 x 2) (2)

2.5.5 Discuss the main dangers (threats) to the survivors of the tsunami in Sumatra. (2 x 2) (4)

2.5.6 Suggest TWO methods that can be used in these countries to reduce the impact of a tsunami. (2 x 2) (4)

2.6 Refer to FIGURE 2.6 which shows Laurasia and Gondwanaland 200 million years ago.

2.6.1 All the continents and adjacent water masses are divided into tectonic plates. What is *plate tectonics*? (1 x 1) (1)

2.6.2 Which theory is illustrated in FIGURE 2.6? (1 x 1) (1)

2.6.3 Which continent in Gondwanaland is part of both the Southern and Northern hemisphere? (1 x 1) (1)

2.6.4 (a) Name TWO continents that formed Laurasia. (2 x 1) (2)

(b) Name THREE continents that formed Gondwanaland. (3 x 1) (3)

2.6.5 What was the name of the single continent that existed before Laurasia and Gondwanaland? (1 x 1) (1)

2.6.6 Provide THREE points of evidence that suggest that continents were once all joined in a single landmass. (3 x 2) (6)

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SECTION B: POPULATION AND WATER RESOURCES

ANSWER at least ONE question from this section. If you answer ONE question from SECTION B, you must answer TWO questions from SECTION A.

QUESTION 3

3.1 Choose the correct word(s) between brackets to make the statements true. Write ONLY the word(s) next to the question number (3.1.1–3.1.7) in your ANSWER BOOK.

3.1.1 (Water distribution / Rainfall distribution) is the spread of rainfall across an area.

3.1.2 The process where liquid changes into ice is called (freezing / melting).

3.1.3 (Desalination / Sublimation) is the process of turning salty water into fresh water.

3.1.4 The process of absorption of water by plants, the transfer of the water through the plant and release to the atmosphere is (transpiration / evaporation).

3.1.5 (Infiltration / Run-off) is the process where water seeps into the soil.

3.1.6 Most precipitation happens over the (rivers / oceans).

3.1.7 (Marine pollution / Land pollution) is the pollution of the oceans (7 x 1) (7)

3.2 Match the term/concept in COLUMN A with the correct relevant descriptions in COLUMN B. Write only the correct letter (A–I) next to the corresponding number (3.2.1–3.2.8) in your ANSWER BOOK, for example 3.2.9 K.

COLUMN A		COLUMN B	
3.2.1	Birth rate	A	The way people are spread out over an area
3.2.2	Population density	B	The number of deaths per 1 000 population per year
3.2.3	Death rate	C	Number of children who die before they reach age 5
3.2.4	Life expectancy	D	The number of babies born per 1 000 population per year
3.2.5	Infant mortality rate	E	The number of people per square km
3.2.6	Growth rate	F	A person who moves to a foreign country
3.2.7	Population distribution	G	Calculated by finding the difference between birth rate and death rate
3.2.8	Fertility rate	H	Average number of years a person can be expected to live
		I	Average number of children per woman

(8 x 1) (8)

3.3 Study the ARTICLE in FIGURE 3.3 on the population of South Africa.

3.3.1 Define the term *population.* (1 x 1) (1)

3.3.2 What was South Africa's population in 2001 and 2015 respectively? (2 x 1) (2)

3.3.3 Name the province with the lowest population and the number of people living in this province. (2 x 1) (2)

3.3.4 Comment on the trend from 2001 to 2016 in the article regarding the population of South Africa. (1 x 2) (2)

3.3.5 Discuss TWO negative impacts that the increased population growth has shown on the natural resources of the country. (2 x 2) (4)

3.3.6 Suggest any TWO strategies that can be put in place to manage the population growth in South Africa. (2 x 2) (4)

3.4 Refer to FIGURE 3.4 which illustrates HIV/Aids infection rate per province.

3.4.1 Write the acronym Aids in full. (1 x 1) (1)

3.4.2 Name TWO symptoms that might be experienced by people who have contracted HIV/Aids. (2 x 1) (2)

3.4.3 List provinces with the highest and lowest infection rate respectively. (2 x 1) (2)

3.4.4 South Africa is one of the countries with the highest HIV/Aids infection rate. Explain ONE factor that contributes to high infection rate in a country like South Africa. (1 x 2) (2)

3.4.5 Suggest TWO ways in which HIV is passed from one person to another. (2 x 2) (4)

3.4.6 Suggest the best strategies to decrease the humiliation (shame) that people with HIV/Aids experience. (2 x 2) (4)

3.5 Carefully study FIGURE 3.5 illustrating inter-basin water transfer.

3.5.1 Explain what is meant by *water transfer*. (1 x 1) (1)

3.5.2 Mention ONE municipality and the province that benefits from this water transfer. (2 x 1) (2)

3.5.3 Give TWO activities that water is used for in this municipality. (2 x 1) (2)

3.5.4 Explain the way water is transferred from the Great Fish River basin to the Sundays River basin. (2 x 2) (4)

3.5.5 There is an increased demand for water in South Africa, but the supply of usable water is decreasing.
Discuss THREE human and physical factors influencing the availability of water in South Africa. (3 x 2) (6)

3.6 Refer to FIGURE 3.6 and answer the questions that follow.

3.6.1 Give a suitable term that describes electricity generated from water. (1 x 1) (1)

3.6.2 Is water a renewable or non-renewable resource? (1 x 1) (1)

3.6.3 What is water used for in FIGURE 3.6. (1 x 1) (1)

3.6.4 Provide TWO other examples of how rural communities use their water resources excluding the one illustrated in FIGURE 3.6. (2 x 1) (2)

3.6.5 Briefly explain how groundwater contributes to the availability of water in South Africa. (1 x 2) (2)

3.6.6 In a paragraph of approximately EIGHT lines suggest how individuals can sustainably save water at home, garden and in the community. (4 x 2) (8)

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QUESTION 4

4.1 Select the correct answer from the list provided below to match the statements (4.1.1–4.1.7). Write only the correct word next to each question number, for example 4.1.8 pyramid.

Immigration; emigration; voluntary migration; push factor; pull factor; refugees; xenophobia

4.1.1 This encourages people to move away from a specific area.

4.1.2 Movement of people from one place to another by choice.

4.1.3 When people move to a new country.

4.1.4 People leave their homes and flee to another country out of fear for their lives.

4.1.5 Unreasonable fear, distrust and hatred of foreign nationals.

4.1.6 When people move out of a country.

4.1.7 This attracts people to an area. (7 x 1) (7)

4.2 Describe the hydrological cycle by choosing correct word(s) in brackets in the following paragraph. Write the number (4.2.1–4.2.8) and correct word next to it.

Most water evaporates from 4.2.1 (oceans / rivers) to form moist air. Moist air is pushed over the land from 4.2.2 (high pressure / low pressure) over the sea to the 4.2.3 (high pressure / low pressure) over the land. When the 4.2.4 (dry / moist) air is forced up it condenses and 4.2.5 (clouds / run-off) will form. 4.2.6 (Precipitation / Percolation) takes place and the water lands on the earth's surface. Water drains into rivers and this is called 4.2.7 (surface run-off / base flow). As the water infiltrates, the water table will 4.2.8 (rise / subside). (8 x 1) (8)

4.3 Read the case study in FIGURE 4.3 carefully before you answer the questions that follow.

4.3.1 Give the geographical term that best describes the movement of the Tsitsa family from one place to another. (1 x 1) (1)

4.3.2 Choose the correct word in relation to the Tsitsa family's relocation from South Africa to England.

(a) Regional / International

(b) Voluntary / Forced

(c) Permanent / Temporary (3 x 1) (3)

4.3.3 Explain why the Tsitsa family moved from South Africa to England. (1 x 1) (1)

4.3.4 Discuss TWO pull factors that attracted the Tsitsa family to England. (2 x 2) (4)

4.3.5 Suggest THREE negative impacts of the voluntary migration on the Tsitsa's place of origin (South Africa). (3 x 2) (6)

4.4 Read the case study in FIGURE 4.4 carefully before you answer the questions that follow.

4.4.1 Define *demographic transition model*. (1 x 1) (1)

4.4.2 Identify the stage where birth rate is high and death rate falls rapidly. (1 x 1) (1)

4.4.3 Indicate the stage where both death rate and birth rate are low. (1 x 1) (1)

4.4.4 Compare the level of birth rate and level of death rate in stage 1. (1 x 2) (2)

4.4.5 In stage 2 the death rate is starting to drop rapidly. Suggest TWO reasons why this is the case. (2 x 2) (4)

4.4.6 In stage 3 the birth rate starts to level out as the population growth rate decreases. Discuss THREE factors that affect birth rates. (3 x 2) (6)

4.5 Carefully study FIGURE 4.5.

4.5.1 Define the term *over-fishing*. (1 x 1) (1)

4.5.2 Give TWO reasons that cause over-fishing. (2 x 1) (2)

4.5.3 Provide TWO negative effects of over-fishing on people and the environment. (2 x 2) (4)

4.5.4 'The oceans are one of our greatest resources for life.'
In a paragraph of approximately EIGHT lines, discuss the importance of the oceans in people's lives. (4 x 2) (8)

4.6 Read the extract in FIGURE 4.6 carefully before you answer the questions that follow.

4.6.1 Name the country affected by flooding in the extract. (1 x 1) (1)

4.6.2 Which country was called upon to assist the affected country? (1 x 1) (1)

4.6.3 Mention the organisation that was deployed to the flooded area to provide relief to people. (1 x 1) (1)

4.6.4 Explain why the houses illustrated in FIGURE 4.6 are referred to as 'informal'. (1 x 2) (2)

4.6.5 Provide TWO examples of poor infrastructure that led to inaccessibility in the area affected by flooding. (2 x 2) (4)

4.6.6 Suggest THREE strategies to reduce the impact of flooding in the informal settlement. (3 x 2) (6)

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GRAND TOTAL: 225