KZN DEPARTMENT OF EDUCATION

GREENBURY SECONDARY SCHOOL

JUNE EXAMINATION – 2018

GEOGRAPHY – GRADE 10 - P1

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DATE : 11/06/18
DURATION : 2 HOURS
MAX MARKS : 140

INSTRUCTIONS

1. This paper consists of 2 Questions and 6 pages + a separate Addendum. of 3 pages
2. Answer ALL Questions in black or blue pen.
3. Number your questions as per question paper.
4. Write neatly and legibly.

QUESTION 1 – ATMOSPHERE + GEOMORPHOLOGY

1.1 Match the statements in Column A with the terms in Column B. Write down only the letter of the correct answer from Column B.

COLUMN A	COLUMN B
1.1.1 Any form of moisture released from the atmosphere.	a) Stratus
1.1.2 Incoming solar radiation.	b) Cumulonimbus
1.1.3 Associated with heavy rain, lightning and thunder.	c) Sublimation
1.1.4 Temperature at which condensation takes place.	d) Dew point temperature
1.1.5 Water changes from liquid to gas.	e) Precipitation
1.1.6 When gas changes to a solid.	f) Evaporation
1.1.7 Layered clouds.	g) Insolation
1.1.8 Amount of radiation reflected off the earth.	h) Crystallization
	i) Terrestrial radiation
	j) Albedo

[8X1=8]

1.2 State whether the following statements are true or false.

1.2.1 The crust is the outer layer of earth on which people live.
1.2.2 The asthenosphere is a soft layer in the mantle below the hydrosphere.
1.2.3 External forces operate inside the earth.
1.2.4 Mohorovicic discontinuity is the division between the crust and the core.
1.2.5 Sima is the part of the crust that forms the sea floor.
1.2.6 Igneous rocks are known as primary rocks.
1.2.7 Metamorphic rocks are formed from fragments of other rocks.

[7X1=7]

1.3 Refer to diagram (Source 1A) and answer the following questions.

1.3.1 Name the layer.
a) That contains 75% of all the air in the atmosphere. [1]
b) That is very dry with no clouds. [1]
c) In which the air is very thin. [1]

1.3.2 What is the term used to describe the change in temperature with the change in height? [2]

1.3.3 The stratosphere contains an important gas.
1.3.3.1 Give the chemical symbol of this gas. [2]
1.3.3.2 Give one important function of the gas you named in 1.3.4.1. [2]

1.3.4 "THE OZONE HOLE OVER ANTARCTICA" has been a subject of interest to climatologists for many years. With regards to ozone depletion, write a short paragraph outlining :
a) Causes of ozone depletion. [Two answers] [4]
b) Effects of ozone depletion. [Two answers] [4]
c) Measures to reduce the effects of ozone depletion. [Two answers] [4]

1.4 With the aid of a diagram, explain the Hydrological Cycle.
(4 marks – diagram + 4 marks – explanation) [8]

Use the following words in your diagram and explanation :

- Evaporation
- Condensation
- Water bodies
- Clouds
- Precipitation

1.5 Refer to the diagram (Source 1B) – Igneous intrusions and answer the following questions.

1.5.1 Identify features labelled 1, 2, 3, 4, 5 and 6. [6]

1.5.2 What is a monolith? [2]

1.5.3 Differentiate between features labelled 4 and 5 in terms of shape. [4]

1.5.4.1 Name the largest of all the intrusive features? [2]

1.5.4.2 Give a South Africa example of the feature you named in 1.5.4.1. [2]

1.5.5 Why do you think these intrusions form landforms such as mountains and waterfalls when they are exposed to the surface? [2]

1.6 Write a short paragraph explaining Alfred Wegener's Theory of Continental drift under the following headings :

a) Theory [2X2=4]

b) Evidence of the theory [2X2=4]

15 + 29 + 26 = [70]

QUESTION 2 – ATMOSPHERE + GEOMORPHOLOGY

2.1 Give the correct term from the statements below.

2.1.1 Gaseous layer that surrounds the earth.
2.1.2 Lines on a map that join places of equal temperature.
2.1.3 Degree of heat or cold.
2.1.4 Minute water droplets that join together.
2.1.5 Chemicals used in aerosol sprays.
2.1.6 Gas that makes up 78% of the atmosphere.
2.1.7 Consists of all forms of water on the planet.

[7X1=7]

2.2 Match the statements in Column A with the concepts in Column B. Write down only the letter of the correct answer from Column B.

COLUMN A	COLUMN B
2.2.1 The edge of a crustal plate.	a) Mid oceanic ridge
2.2.2 Central belt of mountain area below the ocean.	b) Constructive boundary
2.2.3 Formation of molten rock pushing the plates apart.	c) Destructive boundary.
2.2.4 One crustal plate being pulled down under the other.	d) Sea floor spreading.
2.2.5 Area where new crust is formed.	e) Subduction zone
2.2.6 Area where plates collide.	f) Plate boundary
2.2.7 Deepest part of the ocean.	g) Oceanic trench
2.2.8 When 2 plates move sideways past each other.	h) Transform boundary
	i) Oceanic ridge
	j) Crustal plate

[8X1=8]

2.3 Refer to (Source 2A) and answer the following questions.

2.3.1 Identify the slope that is warmer. Give a reason for your answer. [1+1=2]
2.3.2 Identify the slope that is cooler. Give a reason for your answer. [1+1=2]

2.4 Refer to (Source 2B) – Newspaper Advertisement.

2.4.1 Explain why the fact that this house faces north, is important to prospective buyers of this house. [2]

2.4.2 If the owner of the house intends making the front yard a fruit garden, what type of crops do you think he / she would plant? [2]

2.4.3.1 In what way would the advertisement be different if the house was in England? [2]

2.4.3.2 Provide an explanation for your answer. [2]

2.5 Refer to (Source 2C) - Synoptic Weather Map and answer the questions set.

2.5.3 Identify the following :

a) The season represented in the map. [2]
b) Anticyclones labelled X and Y. [2]
c) Fronts labelled A and B. [2]

2.5.4 Refer to the weather station near Cape Town and describe the weather under the following headings.

a) Air temperature
b) Dew point temperature
c) Cloud cover
d) Wind direction
e) Wind speed
f) Precipitation [6X1=6]

2.6 Refer to (Source 2D) – Types of folds and answer the questions set.

2.6.1 Define the term 'folding'.

2.6.2 Identify the types of folds labelled A, C, D and E. [4]

2.6.3 State the type of rock that folding generally occurs in. [2]

2.6.4 Which is the highest fold mountain in the world? [2]

2.6.5 The Cape Fold Mountain is an example of a South African Fold Mountain. What effect will this mountain have on the weather patterns in the South Western Cape? [2]

2.7 Refer to the Structure of Earthquake (Source 2E) and answer the questions set.

2.7.1 Explain your understanding of an earthquake. [2]

2.7.2 Provide labels for B, C and D. [3]

2.7.3 Differentiate between B and C. [4]

2.7.4 Name the instrument used to measure the intensity of an earthquake. [2]

2.8 Refer to (Source 2F) – Case Study on Iceland Volcano.

2.8.1 Define the term 'Volcano'. [2]

2.8.2 Why did the authorities order 700 people to evacuate their homes? [2]

2.8.3 "Iceland sits on a volcanic Hot Spot". Explain your understanding of a "Hot Spot". [2]

2.8.4 Quote evidence from the source to suggest that this particular volcano was indeed an active volcano. [2]

2.8.5 State the impact that was caused by the winds which carried the poisonous gases south. [2]

15 + 26 + 29 = [70]

Question 1 = [70]

Question 2 = [70]

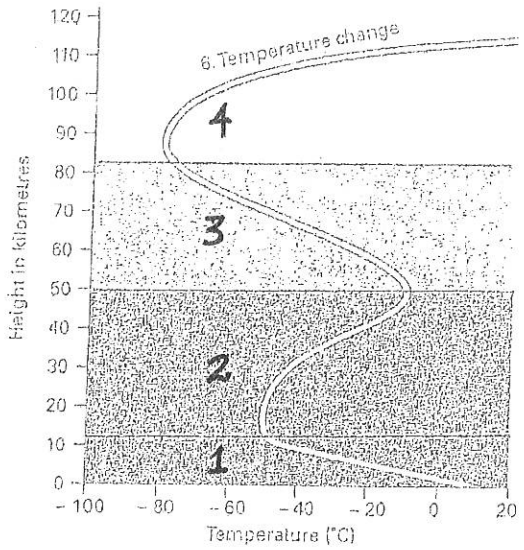
TOTAL = [140]

HOD/HSS
D. RAMASAMY 01/06/18

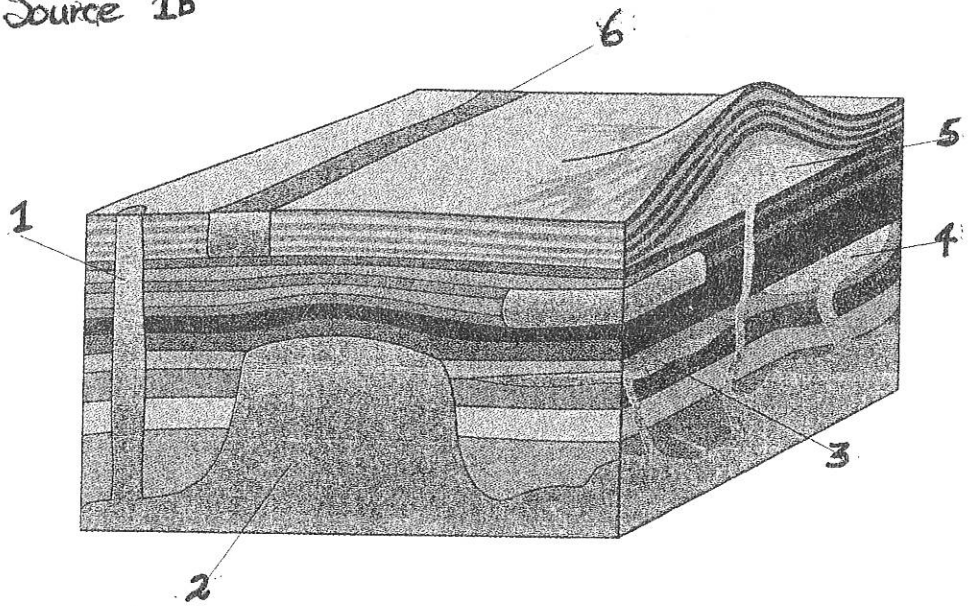
ADDENDUM

GRADE 10

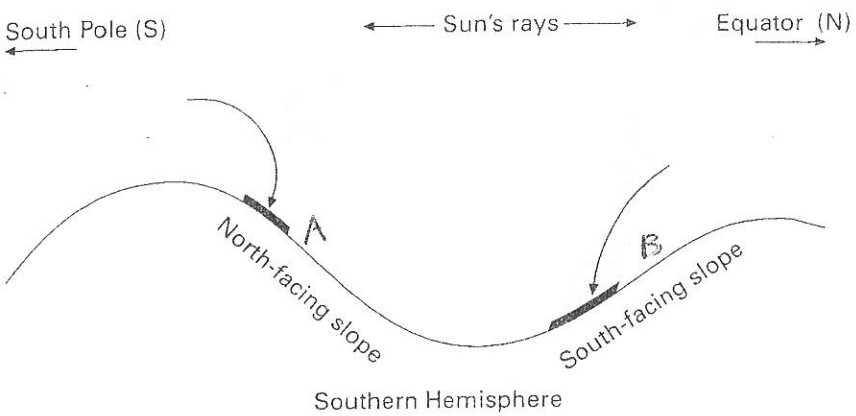
Source 1A



Source 1B



Source 2A



P1

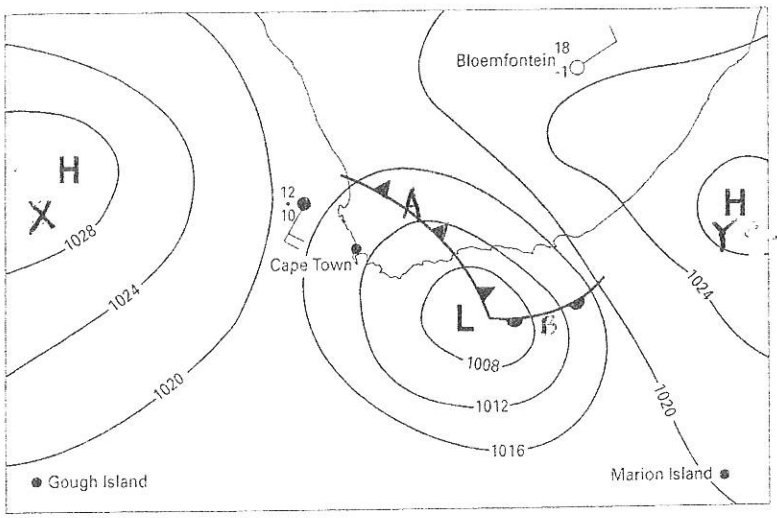
Source 2B

Study the cutting from a newspaper that is advertising a home in a South African city.

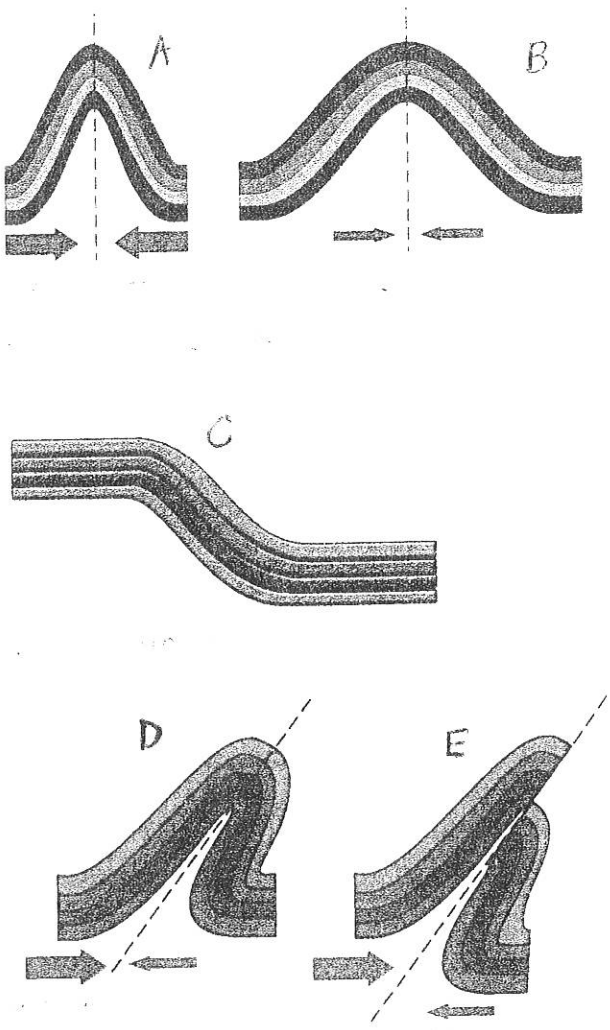
HIGHLAND WINNER

NEW RELEASE. Beautifully restored home on popular road. This north-facer offers: 2 bright beds (BICs), 2 sparkling bathrooms (1 en-suite), eat-in kitchen PLUS 45 m² cottage. Move-in & live condition.

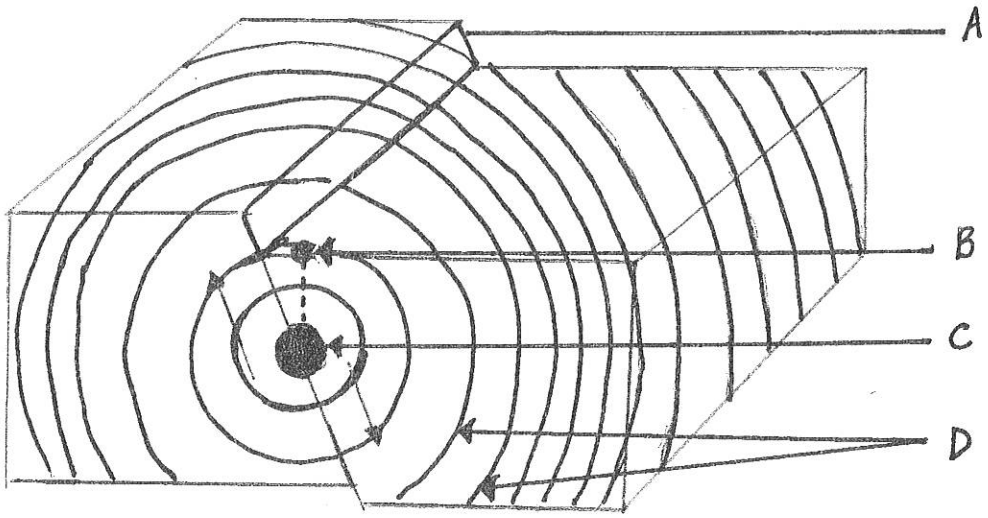
Source 2C



Source 2D



Source 2E



Source 2F

Three craters erupt in Iceland

Volcanic eruptions in southern Iceland spewed lava, black smoke and white steam into the air and partially melted a glacier. The plume of smoke rose from a crater buried beneath 200 metres of ice.

Authorities ordered 700 people to evacuate their homes because the melting glacier was about to cause floods. The police declared a state of emergency. Three Red Cross care centres opened in nearby villages to assist evacuees. The only deaths reported were two tourists who died of exposure whilst trying to see the volcano.

Iceland sits on a volcanic hot spot on the Mid-Atlantic Ridge. This particular volcano, Eyjafjallajökull, has erupted five times since Iceland was settled in the ninth century. The worst eruption was in 1783, when the volcano ejected poisonous gases. This caused the deaths of 9 000 people in Iceland. Winds then carried the poisonous gases south, and more than 2 000 people were killed in England and 16 000 in France.

Marking Memo + Model Answer
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1.1.1 E
1.1.2 G
1.1.3 B
1.1.4 D
1.1.5 F
1.1.6 H
1.1.7 A
1.1.8 J

1.2.1 True
1.2.2 False
1.2.3 False
1.2.4 False
1.2.5 True
1.2.6 True
1.2.7 False

1.3.1 1 - Troposphere
2 - Stratosphere
3 - Mesosphere
4 - Thermosphere

1.3.2 a) Troposphere
b) Stratosphere
c) Thermosphere

1.3.3 Lapse Rate

1.3.4.1. Ozone (O_3)

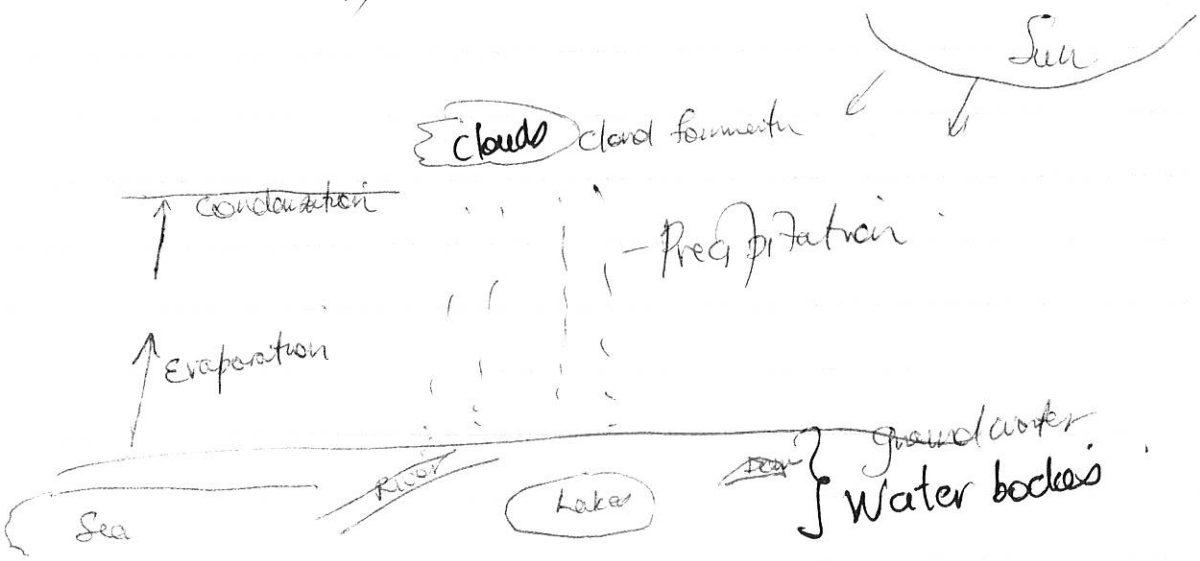
1.3.4.2. Protects us from the bombardment of the dangerous UV Rays.

1.3.5 a). Pollution – Industries etc / Factories
- Use of Aerosol Sprays / Car Exhaust fumes } open Ended
- Coal fired Power Stations

Accept 'Any reasonable answer

1.3.5. b) Cause Skin Cancer / heat strokes
Melting of Ice Caps
Global Warming / Climate change

14.



- Insolation - Water bodies heated
- Evaporation
- Higher Altitudes - cooler - Water Vapour condenses to (Dew Pt T°) form tiny droplets of Water - cloud formation
- Clouds become heavy - fall as diff. forms of precipitation

1.5.1
1 - Pipe
2 - batholith
3 - Sill
4 - lopolith
5 - laccolith
6 - dyke

1.5.2. Monolith is a geological feature that consists of a single large rock.

1.5.3. feature 4 (Lopolith) is saucer shaped.
feature (5) (laccolith) is mushroom shaped.

1.5.4.1. Batholith (2)
1.5.4.2. Pearl Rock - Western Cape.

1.5.5. When they are exposed to the surface, they are exposed to the agents of erosion. - Hence forms mountains and Waterfall -
Also - To on surface are much cooler → solidify to form mountains

1.6. According to Theory - one huge Continent 350 million yrs ago - called PANGEA.
- Tectonic forces - Pulled apart - North & South - LAURASIA and GONDWANA.

Evidence - Continents fit together like jigsaw puzzle
- Similar fossils eg. S.America and Africa.

Question 2.

2.1.1 Atmosphere
2.1.2. Isotherm
2.1.3. Temperature
2.1.4. Coalescence
2.1.5 CFCs
2.1.6. Nitrogen
2.1.7. Hydrosphere

2.2.1 (Plate boundary) F
2.2.2. A
2.2.3. D
2.2.4. E
2.2.5 B
2.2.6 C
2.2.7 G
2.2.8. H.

2.3.1. Slope A - (North facing Slope) - Warmer in S. Hemisphere
2.3.2. Slope B. (South Facing Slope) - Cooler in Southern Hemisphere

2.4.1 If it is facing North, it will be Warmer.
- Buyer will get Sunlight/Sunshine - will be Warmer/Brighter
2.4.2. Owner will plant crops that thrive on Warm conditions
- fruit that require Sunlight for ripening eg grapes

2.4.3. England - N. Hemisphere - hence N.F. Slope will be cooler in England - little/No Sunlight.

2.5 - a) Winter -

b) ∝ - S.A.H Y - S.I.H

c) A - cold front

B - Warm front

2.5.2. a) Air T° - 12°

b) D.P. T° - 10°

c) C/C - overcast

d) W/Dir - S W (S.S.W)

e) W/Sp - 20 knots

f) Precip - Rain

2.6.1 Bending of Earths Crust

2.6.2. A Closed (Isoclinal) fold. D - over fold/overturned

C Monoclinal fold E - overthrust fold

2.6.3. Sedimentary

2.6.4. Himalayas

2.6.5. Windward side - Rainfall - upward movement of warm moist air

- Cloud formation + Condensation ⇒ R/Fall

- Leeward side - little or no rainfall.

2.7.1 Violent vibration of the Earths Crust

2.7.2. B - Epicentre

C - Focus

D - Seismic Waves

2.7.3. C - Focus - pt of origin - where E/Quake starts
B - Epicentre - directly above focus where greatest intensity is felt.

2.7.4. Seismograph.

2.8.1. Volcano - hole through which hot ash, dust, lava & smoke is emmited.

2.8.2. The Melting glacier was about to cause floods.

2.8.3. - Hotspot is an area that is prone to volcanic Eruption
- Weakness in the plate

2.8.4. " It has erupted five times since ... "

2.8.5. more than 2000 people killed in England
16000 people in France