KZN DEPARTMENT OF EDUCATION
GREENBURY SECONDARY SCHOOL
JUNE EXAMINATION - 2016
GEOGRAPHY
GRADE 10

EXAMINER	: R. RANGANATHAN	**DATE**	: 07/06/16
MODERATOR	: D. RAMASAMI	**DURATION**	: 2 HOURS
	S. SINGH	**MAX MARKS**	: 140

INSTRUCTIONS

1. THIS PAPER CONSISTS OF 2 QUESTIONS AND _5_ PAGES + A SEPARATE ADDENDUM.
2. ANSWER ALL QUESTIONS.
3. NUMBER THE QUESTIONS AS PER QUESTION PAPER AND RULE OFF AFTER EACH QUESTION.
4. WRITE NEATLY AND LEGIBLY.

QUESTION 1 – Atmosphere and Geomorphology

1.1 Match the statements in Column A with the terms in Column B. Write down the numbers 1.1.1 to 1.1.5 and next to each, the letter of the correct answer.

COLUMN A	COLUMN B
1.1.1 Gaseous layer that surrounds the earth.	a) Permanent
1.1.2 Gases that do not change in composition.	b) Atmosphere
1.1.3 Incoming solar radiation.	c) Albedo
1.1.4 Amount of radiation reflected off earth.	d) Insolation
1.1.5 Any form of water that falls from the atmosphere.	e) Precipitation
	f) Variable

5X1=[5]

1.2 Refer to Source 1A – structure of the Atmosphere and answer the following questions.

1.2.1 Name layers 1, 2, 3 and 4 as they appear from earth. [4]

1.2.2 In which 2 layers do temperatures increase with height. [2]

1.2.3 What is the term used to describe change in temperature with the change in altitude? [2]

1.2.4 The stratosphere contains the ozone layer. Explain the importance of this ozone gas that is in the ozone layer. [2]

1.2.5 With regards to ozone depletion, write a short paragraph for each of the following headings.

a) Causes of ozone depletion. (2 points) 2X2=[4]

b) Effects of ozone depletion. (2 points) 2X2=[4]

c) Measures to reduce ozone depletion. (2 points) 2X2=[4]

[22]

1.3 With the aid of a simple sketch, explain the Hydrological (Water) Cycle. [4]

1.4 State whether the following is true or false.

1.4.1 The inner core is extremely hot and solid.

1.4.2 Sedimentary rock was the first type of rock formed.

1.4.3 The mantle is semi-molten.

1.4.4 The lithosphere is hot and plastic in nature.

1.4.5 Continental crust is mostly formed of granite.

5X1=[5]

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

1.5.1 Provide labels for A, B, C, D, E and F. [6]

1.5.2 Explain your understanding of igneous intrusions [2]

1.5.3 Define the term volcanism. [2]

1.5.4 Name 3 types of volcanic cones that you have studied. [3]

[13]

1.6 Refer to the diagram (Source 1C) – structure of an earthquake and answer the following questions.

1.6.1 Provide labels for A, B and C. [3]

1.6.2 Define the term earthquake. [2]

1.6.3 Differentiate between A and B in terms of characteristics. [4]

1.6.4 Where will you prefer to live, at place X or place Y? Give a reason for your answer. 2+2=[4]

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

1.6.6 Explain 3 measures that you would take to reduce the impact of an earthquake. 3X2=[6]

[21]

TOTAL – QUESTION 1 = [70]

QUESTION 2

2.1 Choose the correct term from the list below that matches the statements that follow.

Solar radiation	cumulonimbus	crystalisation	sublimation
Terrestrial radiation	stratus clouds	dew point temp	

2.1.1 Heat given off by the earth.

2.1.2 Temperature at which condensation takes place.

2.1.3 Layered clouds.

2.1.4 Associated with heavy rain, lightening ad thunder.

2.1.5 Water changes directly from gas to ice.

5X1=[5]

2.2 Refer to Source 2A – Table showing average daily temperatures and answer the following questions.

2.2.1 Which place had higher daily temperature, Durban or Cape Town? State 2 factors for your reason. 1+2+2=[5]

2.2.2 The temperature range for Johannesburg is much higher than that of Durban.

a) Explain your understanding of temperature range. [2]

b) What factor is responsible for this difference in temperature range? [2]

c) Briefly explain the factor mentioned (answer 2.2.2 b). 2X2=[4]

2.3 Refer to the synoptic weather map (Source 2B) and answer the following questions.

2.3.1 Is this a summer or a winter map? Provide 2 reasons for your answer. 1+2X2=[5]

2.3.2 Identify the following.

a) Fronts labelled X and Y. [2]

b) High pressure cells labelled A, C and E. [6]

2.3.3 Briefly describe 2 weather conditions that Cape Town is likely to experience. 2X2=[4]

2.4 Match the statements in Column A with the terms in Column B. Write down the numbers 2.4.1 – 2.4.5 and next to each, the letter of the correct answer.

COLUMN A	COLUMN B
2.4.1 Area where new crust is formed.	a) Destructive boundary
2.4.2 When two plates move towards each other.	b) Divergent boundary
2.4.3 Where two plates collide and land is destroyed.	c) Transform boundary
2.4.4 When two plates move away from each other.	d) Constructive boundary
2.4.5 When two plates move side-wards passed each other.	e) Convergent boundary
	f) Subduction zone

5X1=[5]

2.5 Refer to Source 2C and answer the following questions.

2.5.1 Define the term folding. [2]

2.5.2 Identify the types of folds labelled A, B, C, and D. [4]

2.5.3 What type of rock does folding commonly occur in? [2]

2.5.4 Give an example of a South African fold mountain. [2]

2.6 Refer to (Source 2D) Case Study – Volcanic eruption (ICELAND) and answer the following questions.

2.6.1 Define the following terms :

a) Glacier [2]

b) Lava [2]

2.6.2 Differentiate between active and dormant volcano. [4]

2.6.3 Briefly describe two negative effects of this volcanic eruption on the people of ICELAND. 2X2=[4]

2.6.4 What did the authorities do reduce the impact of this eruption? [2]

2.6.5 Suggest three positive effects of volcanic eruptions in general. 3X2=[6]

TOTAL – QUESTION 2 = [70]

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03/06/16

GEOGRAPHY

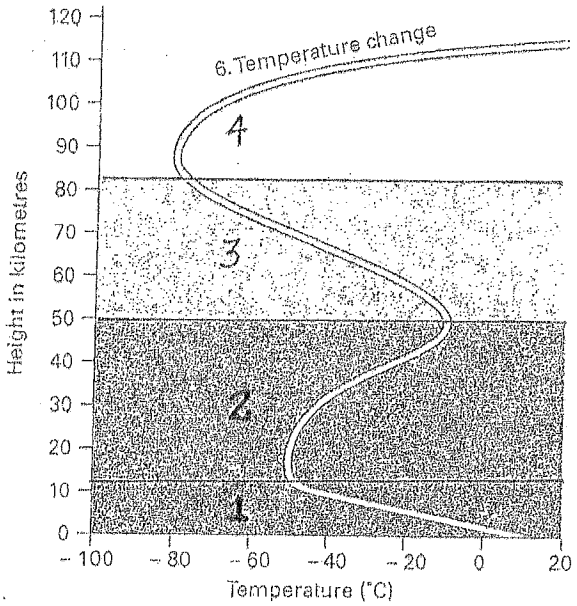
PAPER 1

GRADE 10

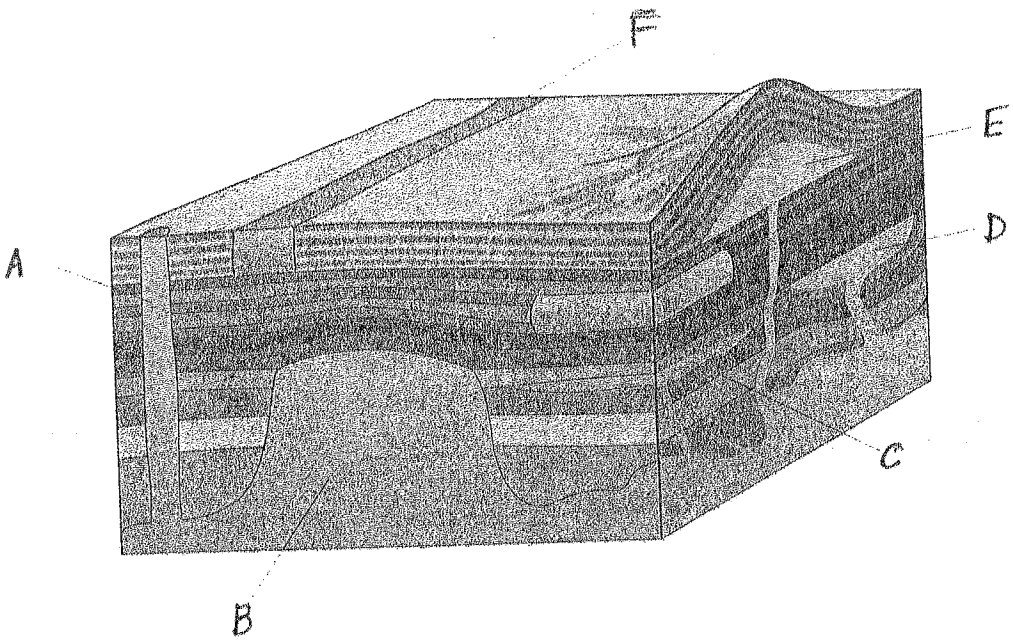
ADDENDUM

JUNE EXAM 2016

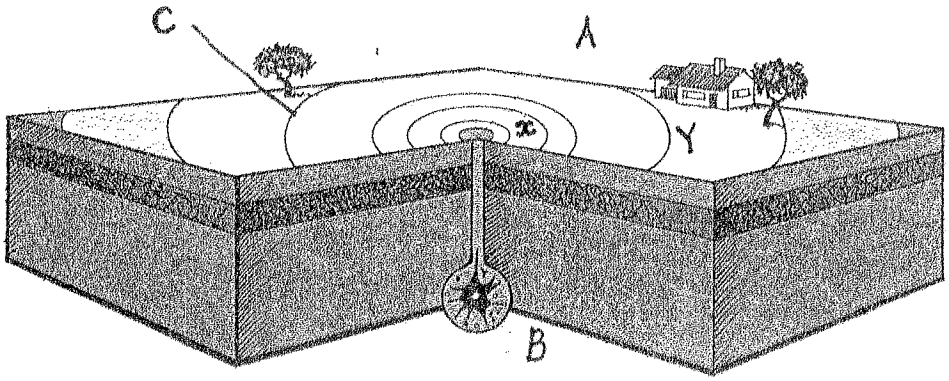
Source 1A



Source 1B



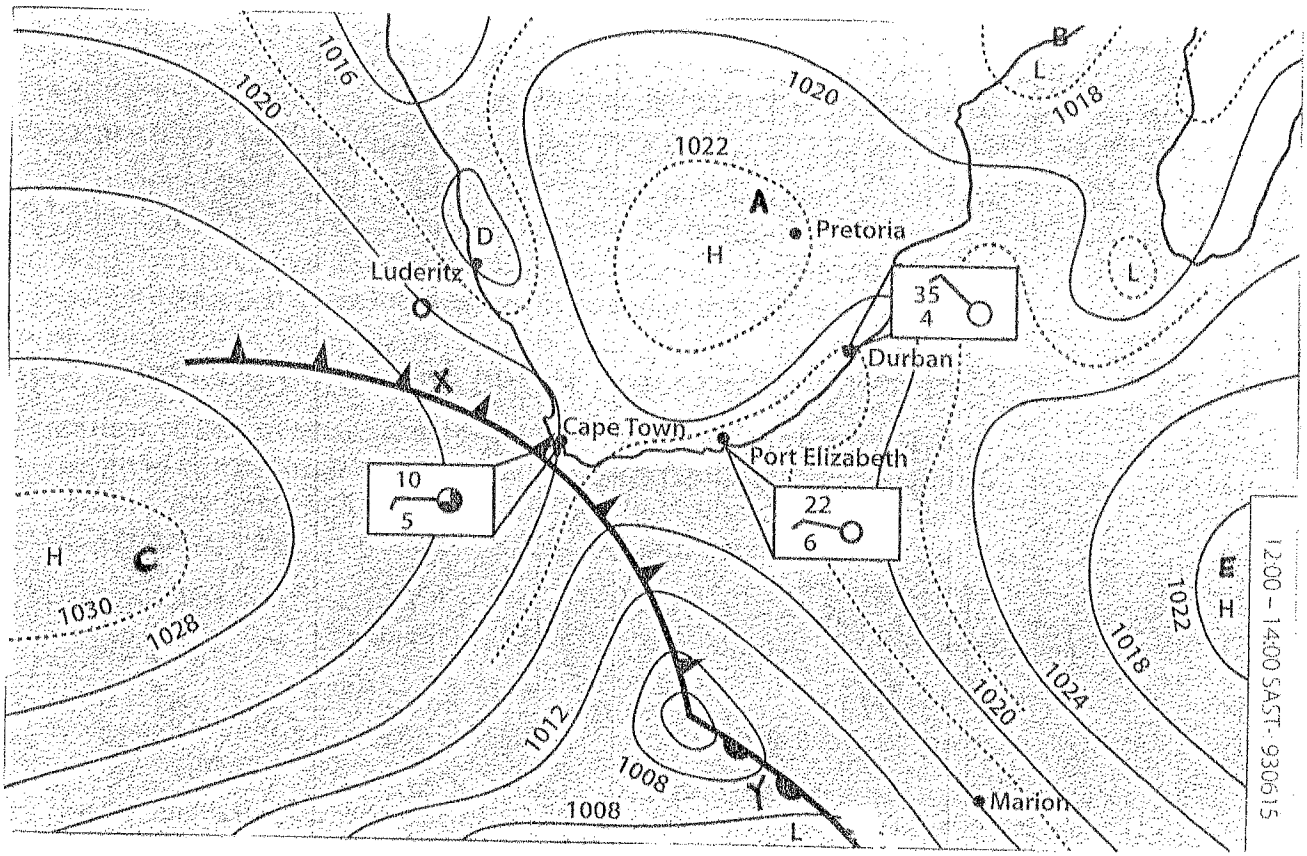
Source 1c



Source 2A

City/town	Average daily temp – January	Average daily temp – July
Durban	High 28° C Low 21° C	High 23° C Low 11° C
Johannesburg	High 26° C Low 15° C	High 17° C Low 4° C
Cape Town	High 26° C Low 16° C	High 18° C Low 7° C
Polokwane	High 28° C Low 17° C	High 20° C Low 4° C

Source 2B



Source 2c

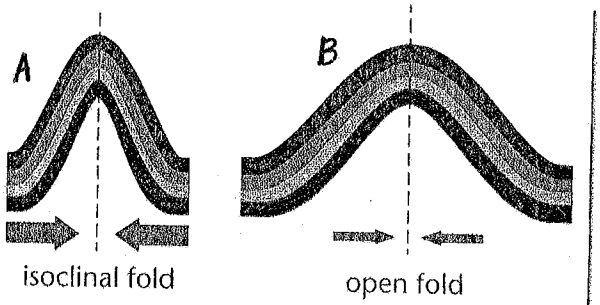


Figure 3.23a): Symmetrical folds

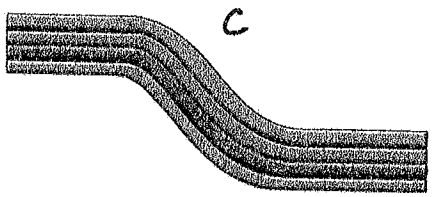
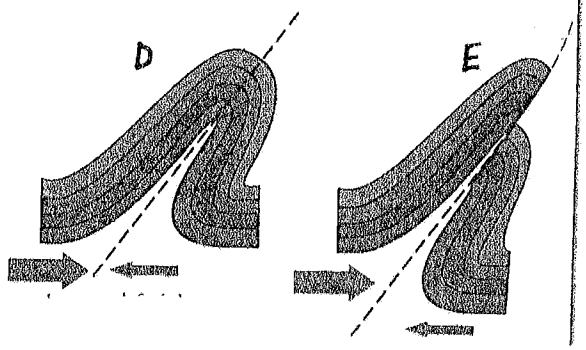


Figure 3.23b): A monocline



Source 2D

Case study

2010 eruptions of Eyjafjallajökull (Iceland)

An Icelandic volcano, dormant for 200 years, has erupted, ripping a 1 km-long fissure in a field of ice.

The volcano near Eyjafjallajoekull glacier began to erupt just after midnight, sending lava a hundred metres high. Icelandic airspace has been closed, flights diverted and roads closed. The eruption was about 120 km (75 miles) east of the capital, Reykjavik. About 500 people were moved from the area. The area is sparsely populated, but the knock-on effects from the eruption have been considerable. A state of emergency is in force in southern Iceland and transport connections have been severely disrupted, including the main east-west road. Ash has already begun to fall in Fljotshlid and people in the surrounding area have reported seeing bright lights emanating from the glacier.

Three Icelandic air flights, bound for Reykjavik from the United States, were ordered to return to Boston. Domestic flights were suspended indefinitely, but some international flights were scheduled to depart on Sunday. There had initially been fears that the volcano could cause flooding, as it causes ice to melt on the glacier above it, but that scenario appears to have been avoided.

Memo

1.1.1. B

1.1.2. A

1.1.3. D

1.1.4. C

1.1.5. E

1.2.1 A - Troposphere

B - Stratosphere

C - Mesosphere

D - Thermosphere

1.2.2. B - Stratosphere

D - Thermosphere

1.2.3. Lapse Rate

1.2.4 Protects us from bombardment from UV Rays

1.2.5. a) Causes

- Substances called free radical catalysts - chlorine, bromine & Nitrous oxide
- Use of CFCs / Industrialisation / Factories / Refrigeration etc
- Use of fertilisers / Motor car fumes / Deforestation / Aerosol sprays

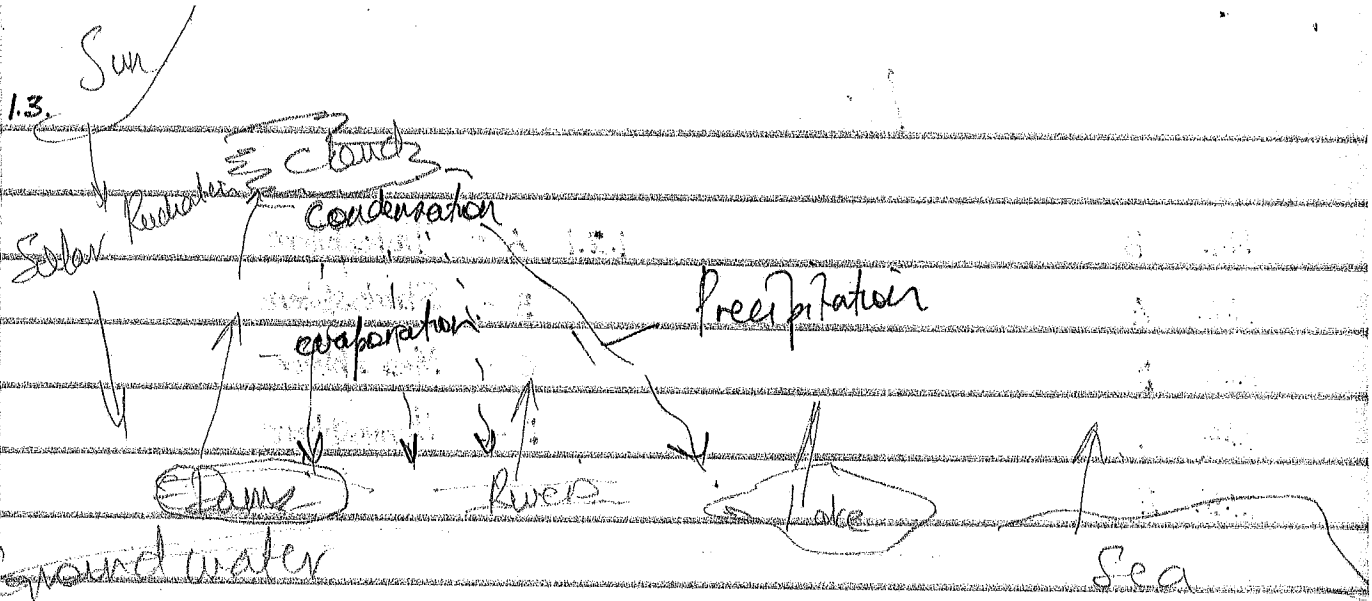
b) Effects

- Skin Cancer / Cataracts
- Reproductive cycle of phytoplankton is affected

c) Measures to reduce Ozone depletion

- Ban the use of aerosols
- use ozone friendly products
- Protocols eg Montreal protocol where CFCs phased out
- Use of filters / Enviro' friendly products / organic foods
- Reduce industrialisation - KYOTO Protocol.
- Modern motor cars - fuel efficient

1.3.



Solar radiation – all water bodies heated
- Evaporation – gas → Water Vapour
- Condenses to form clouds
- Fall as precipitation – fill up Water bodies again
- Cycle continues

1.4.1. True

1.4.2. False

1.4.3. True

1.4.4. False

1.4.5. True

1.5.1. A - Pipe
B - Batholith
C - Sill
D - Lopolith
E - Laccolith
F - Dyke

1.5.2. Igneous intrusions are rock features that form when magma cools

1.5.3. Transfer of molten material (Magma) from one part of the earth to another.

1.5.4. Composite Cone
Shield Cone
Cinder Cone

1.6.1. A - Epicentre
B - Focus
C - Seismic Waves

1.6.2. E/Quake - violent vibration of the earths surface / crust.

1.6.3. B - Focus - point of origin of the Earthquake
A - Epicentre - directly above focus where greatest intensity is felt

1.6.4. Y - Away from epicentre -
ze is close to epicentre - greater destruction - Hence more dangerous to live at ze.

1.6.5. Seismograph.

1.6.6. - Build Earthquake resistant homes - eg. Wood instead of bricks.
- Build houses on stilts.
- Evacuation procedures -
- Epic. - sensors. → ultra sounds. detect -

Copan - any reasonable answer

Question 2.

2.1.1. Terrestrial radiation

2.1.2. Dew point temperature

2.1.3. stratus clouds

2.1.4. cumulonimbus clouds

2.1.5. crystalisation.

2.2.1 Durban - Ocean currents
- Degree of latitude

2.2.2. (Highest temp - lowest temp) Difference between Max and min temp.

2.3.3. Distance from Sea.

2.3.4. Durban is closer to the sea than JHB.
The land heats up faster than the sea and cools down faster than the sea. Hence JHB has warmer summer temp. & cooler winter temp than Dbn.
Sea - moderating effect. - Hence Dbn - Moderate Temp - low T° range.
JHB - Extreme T° → Hence higher T° range.

2.3.1 Winter - Date/Continent dominated by H.P.
- Relatively low T°
- C/Front very close to Continent

2.3.2.a) X - cold front
Y - Warm front
b) A - kalahari High
C - South Atlantic high
E - South Indian high

2.3.3. C.Town - likely to experience:
Torrential Downpour/heavy Rain
Thunderstorms - lightning Activity
Change in W/speeds - stronger Winds
Change in Wind direction.

2.4.1. D

2.4.2. E

2.4.3. A

2.4.4. B

2.4.5. C

2.5.1. Bending of rock strata – into arches

2.5.2. A – Isoclinal (closed) Fold C – MonoClinal fold

B – open fold D. – over turned / over fold

2.5.3. Sedimentary Rock

2.5.4. Cape Fold Mountains

2.6.1. a) Mountain of Ice

b) When molten material cools and flows on surface – called lava.

2.6.2. Active – volcano that has erupted in recent times and could erupt again.

Dormant – volcano that has not erupted for centuries but may well erupt again in future.

2.6.3. - Transport connections have been severely disrupted. / Main east-west road

- Ash began to fall. / 500 people had to be moved.

- Icelandic flights / Domestic flights – suspended indefinitely

- Melting ice – flooding.

2.6.4. - Domestic flights – suspended indefinitely

500 people – moved from the area.

Flights were diverted and roads were closed.

2.6.5. - Tourist Attraction / Precious metals found / Creates new land – islands

- Hot springs / geysers / Fertile soil