

**KZN DEPARTMENT OF EDUCATION
GREENBURY SECONDARY SCHOOL
JUNE EXAMINATION – 2015
GEOGRAPHY – GRADE 10**

EXAMINER : R. RANGANATHAN

DATE : 18/06/15

MODERATOR : F. PARUK

DURATION : 2 HOURS

MAX MARKS: 140

NAME : _____ GR/DIV. : _____

INSTRUCTIONS :

1. This paper consists of 2 Questions and 6 pages + a separate Addendum.
 2. Answer all questions.
 3. Number questions as per question paper and rule off after each question.
 4. Write neatly and legibly.
 5. Use a blue or black pen – no neon colours allowed.
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QUESTION 1 – ATMOSPHERE AND GEOMORPHOLOGY

- 1.1 Match the statement in Column A with the concepts in Column B. Write down the numbers 1.1 – 1.5 and next to each, the letter of the correct answer from Column B.**

COLUMN A	COLUMN B
1.1 Gaseous layer that supports life on earth.	a) Evaporation
1.2 Process whereby water changes to water vapour.	b) Atmosphere
1.3 Long wave radiation that heats lower layers of earth.	c) Isobar
1.4 Any form of water that falls from the atmosphere.	d) Precipitation
1.5 Lines on map that join places of equal temperature.	e) Solar radiation
	f) Isotherm
	g) Terrestrial radiation
	h) condensation

5X1=[5]

PTO to Pg 2

1.2 Refer to the graph (Source 1A) – structure of the atmosphere and answer the following questions.

- 1.2.1 Provide labels for the layers of the atmosphere 1, 2, 3 and 4. [4]
1.2.2 In which layer is the ozone layer found? [2]
1.2.3 Explain the role of the ozone layer. [2]

1.3 Study the figure (Source 1B) – heating of the atmosphere and answer the following questions.

- 1.3.1 Define the following terms :
a) Greenhouse effect [2]
b) Deforestation [2]
c) Fossil fuels [2]
1.3.2 List 3 sources of greenhouse gases that are illustrated in Source 1B. [3]
1.3.3 Predict what will happen to the temperature if more greenhouse gases continue to be added to the atmosphere as depicted in Source 1B. [2]
1.3.4 List 3 ways in which insolation is lost in the atmosphere. [3X1=3]

- 1.4 With the aid of a simple sketch, explain how latitude affects temperature. [8]

1.5 State whether the following are 'true' or 'false'.

- 1.5.1 The Core is the inner most layer of the earth.
1.5.2 An upfold of rocks is called syncline.
1.5.3 Igneous rock was the first type of rock to form.
1.5.4 Magma is rock that is in solid form.
1.5.5 Sandstone is an example of sedimentary rock.

[5]

1.6 Refer to Source 1C (the layers of the earth) and answer the following questions.

- 1.6.1 Provide labels for A, B, C and D. [4]
1.6.2 Name the 3 types of rocks that you have studied. [6]
1.6.3 What 2 factors cause rocks to metamorphose? [2]
1.6.4 Explain what you understand by weathering. [2]

1.7 Refer to diagram Source 1D (Igneous intrusions) and answer the following questions.

- 1.7.1 Provide labels for features 1, 2, 3, 4. [4]
1.7.2 Explain your understanding of volcanism. [2]
1.7.3 Differentiate between intrusive and extrusive volcanism. [4]
1.7.4 Name the 3 types of volcanic cones that you studied. [6]

TOTAL - Question 1 = [70]

QUESTION 2

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

CRYSTALISATION	SUBLIMATION,	HUMIDITY,
TEMPERATURE,	RELATIVE-HUMIDITY,	HEAT BALANCE,
COALESCENCE	EVAPORATION,	CLIMATE

- 2.1.1 Degree of heat or cold.
- 2.1.2 Water changes directly from gas to ice.
- 2.1.3 Proportion of water vapour compared to the amount it can hold at any given temperature.
- 2.1.4 Earth radiates the same amount of energy that it receives from the sun.
- 2.1.5 Many minute water droplets joining together.

[5x1=5]

2.2 Refer to the case study. Consequences of Global Warming (Source 2A) and answer the following questions.

- 2.2.1 Explain your understanding of global warming. [2]
- 2.2.2 List 3 possible consequences of global warming according to the case study. [3X2=6]
- 2.2.3 Explain why poor countries such as those in Africa will be affected worst by global warming. [2X2=4]

2.2.4 The following quotation is also from the UNICEF article.

“Climate change is a global issue. Addressing it is a shared responsibility. Yet it is increasingly apparent that the world’s poorest countries and most vulnerable people will bear the brunt of climate change.”

With reference to the above quotation, answer the following questions.

- 2.2.4.1 According to the quote, addressing the climate change issue is a shared responsibility. Who needs to share this responsibility? Give a reason for your answer. [2+2=4]
- 2.2.4.2 If you were on a panel to decide how to address the issue of climate change, what points would you need to consider before making any recommendations? (List 3 points) [3X2=6]

2.3 Draw a weather station model that is experiencing the following weather conditions

- Cloud cover – $\frac{3}{4}$ cloudy
- Wind direction – north easterly
- Wind speed – 25 knots
- Air temperature - 27°C
- Dew point temperature - 10°C
- Precipitation – rainfall

[6+2=8]

2.4 Choose the correct term from the list below.

FOCUS, TSUNAMI, RIFT VALLEY, FAULT FOLDING,
OVERFOLD, BLOCK MOUNTAIN

- 2.4.1 Greater pressure on one side.
- 2.4.2 Point of origin of the earthquake.
- 2.4.3 Huge tidal wave.
- 2.4.4 A crack or fracture in the rock.
- 2.4.5 Block of land that moves upwards along fault lines.

[5]

2.5 Refer to Source 2B (Plate tectonics and continental drift) and answer the following questions.

- 2.5.1 What is the name of the single continent that existed approximately 175 million years ago? [1]
- 2.5.2 Name the 2 landmasses the single continent formed about 170 million years ago. [2]
- 2.5.3 Give 2 pieces of evidence to back up this theory of continental drift. [2X2=4]

2.6 Study the article (Japanese Volcano awakens – Source 2C and answer the following questions.

- 2.6.1 Explain your understanding of volcanologist. [2]
- 2.6.2 The Shinmoedake volcano can be classified as dormant. Provide evidence from the article to support this statement. [2]
- 2.6.3 Discuss the impact that this volcanic activity had on the residents of the area. [2X2=4]
- 2.6.4 Give one advantage that volcanic eruptions can have. [2]

2.7 Refer to article (Earthquake – Nepal) Source 2D and answer the following questions.

- 2.7.1 Define the following terms :
- a) Earthquake [2]
- b) Epicentre [2]
- 2.7.2 Is a magnitude of 7.8 severe or less severe? [1]
- 2.7.3 Explain your understanding of an avalanche. [2]
- 2.7.4 What damage did the avalanche cause? [2]
- 2.7.5 According to the article, three UNESCO world heritage sites were damaged. Discuss the impact of this on the economy of Nepal. [2X2=4]

TOTAL - Question 2 = [70]

TOTAL : [140]

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D. Ramasami

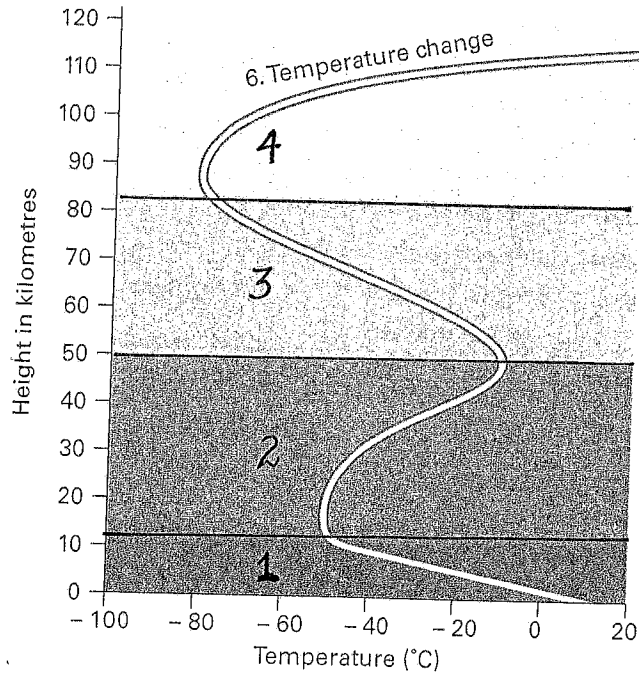
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ADDENDUM

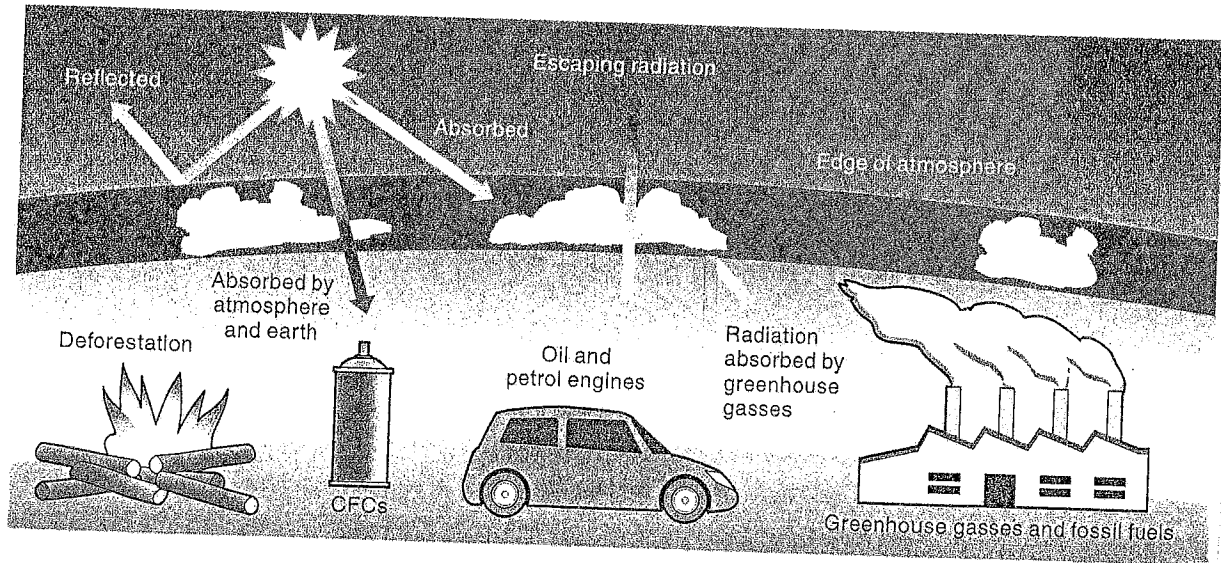
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GEOGRAPHY

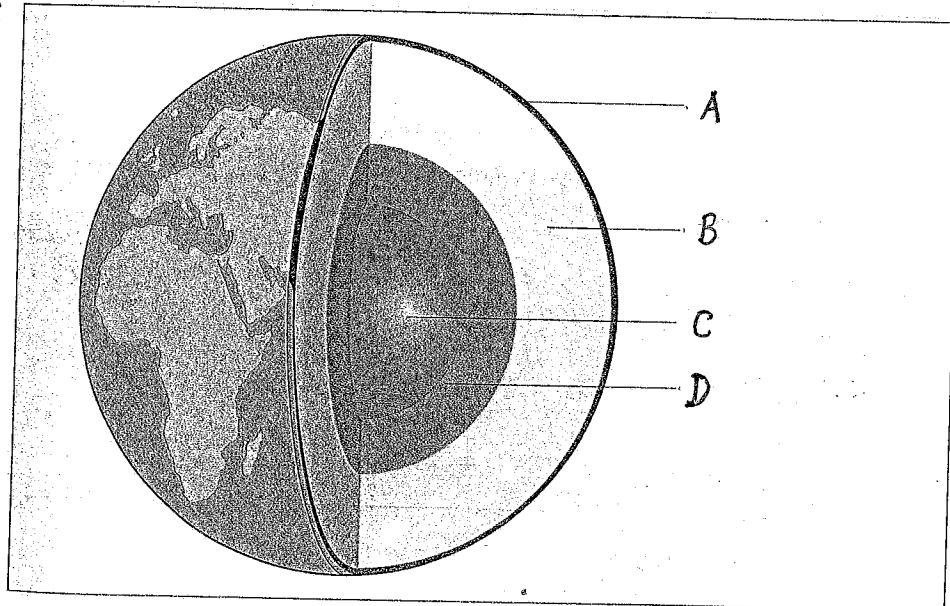
Source 1A



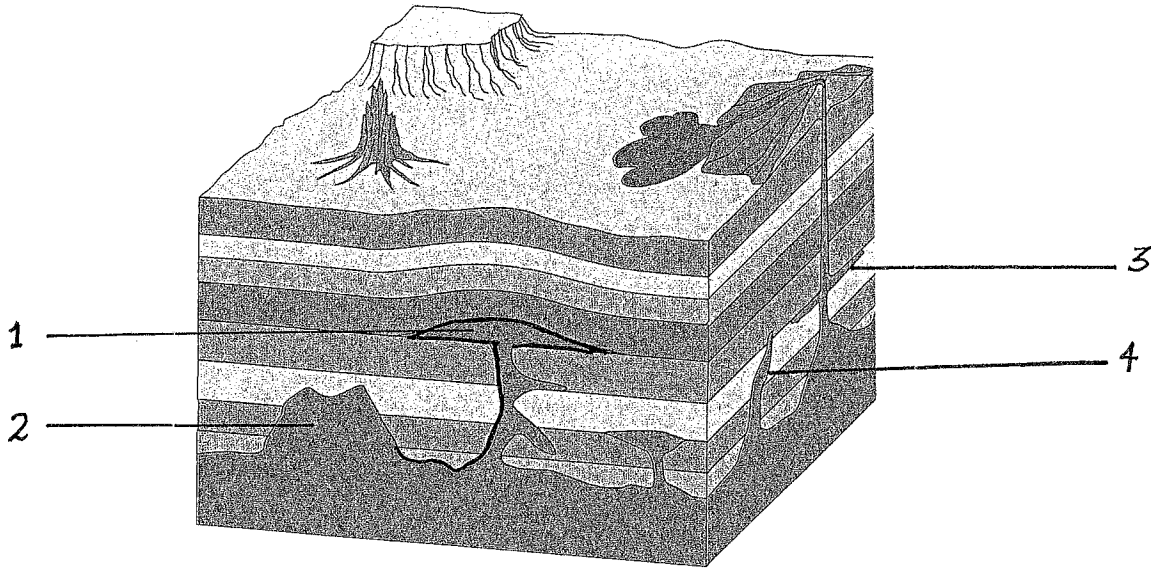
Source 1B



Source 1C



Source 1 D



Source 2A

Case study: Consequences of global warming

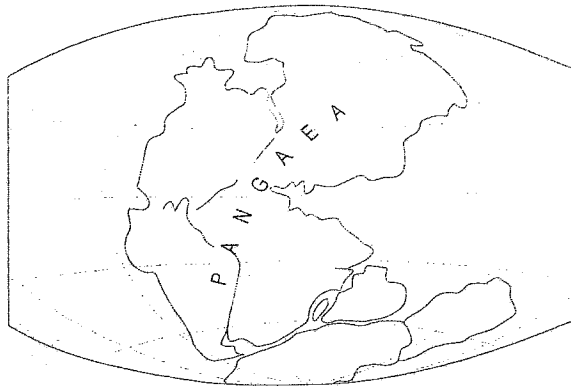
Climate change is with us now. We see the impacts all around us. For the vast majority of people the impact of climate change means an increased risk of losing their homes and livelihoods, more disease, less security and sometimes death. Children in the world's poorest communities are the most vulnerable. They are already seeing the impacts of climate change through malnutrition, disease, poverty, inequality and increasing risk of conflict – and ultimately an increase in child mortality rates.

All the essential effects we are seeing now are associated with a temperature increase since 1850 of less than 1 °C. Past actions and the likely trend of emissions of greenhouse gasses over the next few years imply that another 1 or 2 °C will be hard to avoid, even with responsible action. It will be the young and the poor and developing countries, such as [in] Africa, that will suffer earliest and hardest.

Our children – particularly those in Africa and Asia – are already facing a future in which it appears likely that disasters will increase in number and become more intense, where economic growth will falter and incomes fall, where disease outbreaks will be more frequent, clean water and good sanitation harder to secure, and habitats and communities less stable. As a consequence, children may also have to cope with higher levels of conflict and other pressures which keep them out of school and force them into work too soon.

Many developing countries have poor infrastructure and lack the technologies that could help them cope with a changing climate, such as flood defences and early warning systems. They are thus more vulnerable to the impact of climate change and their children are the most vulnerable of all.

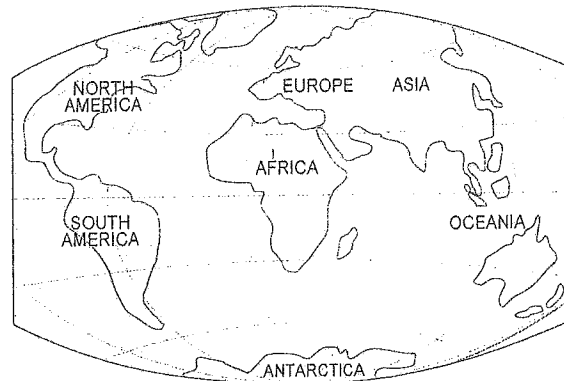
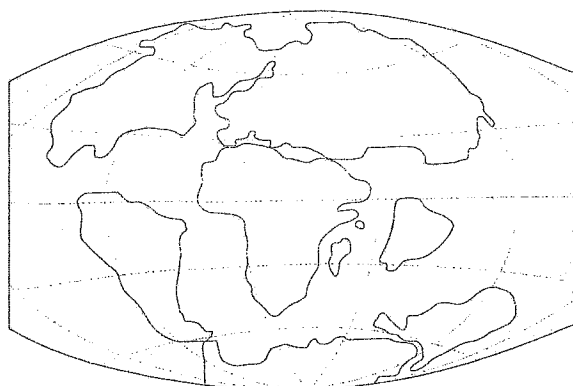
(UNICEF UK Climate Change Report 2008)



1. The world was one large landmass called **Pangaea** 180 million years ago.



2. Pangaea began to break up into **Laurasia** and **Gondwanaland** 175 million years ago.



SOURCE 2C

Japanese volcano awakens with a vengeance

By North Asia correspondent Mark Willacy Updated Mon Jan 31, 2011 9:06 pm.

VOLCANIC LIGHTNING STRIKES ABOVE SHINMOEDAKE PEAK AS IT ERUPTS

Officials in southern Japan have urged more than 1000 residents of a town near an erupting volcano to evacuate amid reports of large rocks falling in the area. Mount Shinmoe's first major eruption in almost 200 years is sending plumes of ash and rocks kilometres into the sky.

The eruption, on the southern island of Kyushu, has disrupted flights and train services and sparked warnings about another, even more powerful blast. More than 600 people have already been evacuated.

Volcanologists say a giant lava dome on the volcano has now grown to more than 500 metres in diameter. For some people living near the volcano it is nothing more than a nuisance, but for others it is like a biblical curse. "It's good that it's not hovering in the air," a used car lot owner said, taking a break from shovelling up the mess. "But it's getting heavier and harder to clean up. This ash piled up on the cars will be hard to remove," he complained, as his once immaculate lot of cars sits under centimetres of grey paste - the windscreen wipers on each vehicle sticking forlornly up in the air.

The mayor of Takaharu, a town near the volcano, says people have never seen Mount Shinmoe like it is. "It's the first time the people of my community have experienced volcanic ash like this, so we are very concerned about their health," Mitsuhiro Hidaka said.

With 108 active volcanoes, or 10 per cent of the world's total, Japan shakes precariously on the infamous Pacific Ring of Fire.

The Japanese are wearily familiar with eruptions like Mount Shinmoe's, but scientists warn there could be worse to come. In the past nine months volcanologists estimate seven million cubic metres of magma have accumulated in two vast reservoirs underneath the peak and small pyroclastic flows, or super-heated clouds of gas travelling at up to 700 kilometres per hour, have been seen sweeping down Mount Shinmoe. The volcano's behaviour is said to be eerily similar to its belligerent demeanour 300 years ago, when it belched and bellowed on and off for 18 months.

For the people living around Shinmoedake, this is just the latest biblical-style cataclysm. "Then came the avian flu. Now the first eruption of the Shinmoedake volcano in 52 years. It is indeed a triple blow of disasters we're suffering from now."

Adapted from <http://www.abc.net.au/news/stories/2011/01/31/3126199.htm>

The earthquake centered outside Kathmandu, the capital, was the worst to hit Nepal in over 80 years. It destroyed swaths of the oldest neighborhoods of Kathmandu and severely damaged three Unesco World Heritage sites. The earthquake was strong enough to be felt all across parts of India, Bangladesh, China's region of Tibet and Pakistan.

P4

A magnitude 7.8 earthquake occurred with an epicenter 77 km (48 miles) northwest of Kathmandu, the capital city of Nepal that is home to nearly 1.5 million inhabitants. The earthquake flattened homes, buildings and temples, causing widespread damage across the region and killing more than 2,300 and injuring more than 5,000.

Reports of damage and injuries are still being confirmed. The situation is unclear in remote areas which remain cut off or hard to access. Many mountain roads are damaged or blocked by landslides.

The earthquake triggered a major avalanche on the south slopes of Mt. Everest, located approximately 160 km east-northeast of the epicenter. The avalanche destroyed the base camp, where climbers were waiting for a break in the weather to ascend the mountain. According to reports, the avalanche killed at least 17 people and injured 61 others.

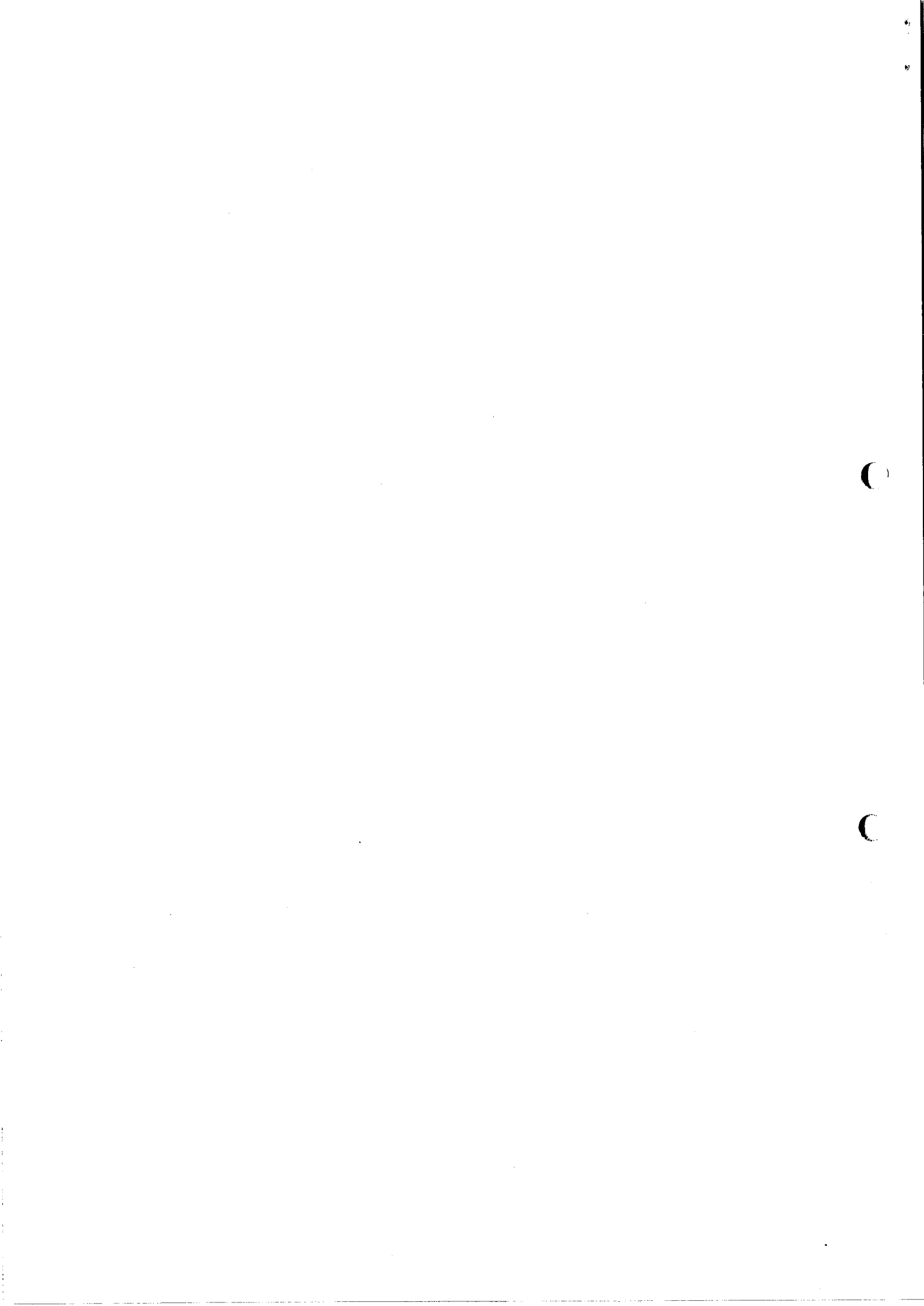


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Grade 10 - Geography.
June Exams - Paper 1
Marking Memo.

Question 1

1.1. B

1.2. A

1.3. G

1.4. D

1.5. F

- () 1.2.1 1 - Troposphere
2 - Stratosphere
3 - Mesosphere
4 - Thermosphere

1.2.2. Stratosphere

1.2.3. Protects us from bombardment of the dangerous UV rays.

1.3.1. a) Trapped heat in the atmosphere.

b) Chopping of trees / removal of trees / forests

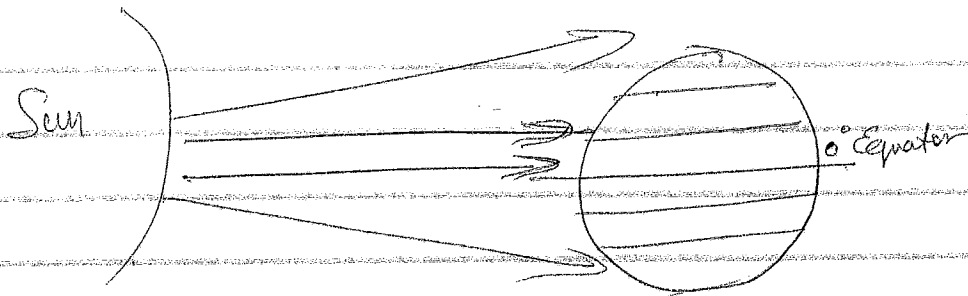
c) - Dead plants & animals remains - millions of yrs.

1.3.2. CFCs / fires / CO₂ / cars / factories / burning of fossil fuels.

1.3.3. Temp will increase - bec the more greenhouse gases, the more the long-wave (terrestrial radiation) will be absorbed. Hence greatest increase in troposphere (Troposphere - Atmosp. density greatest)

1.3.4. Reflection / Scattering + Absorption

1.4.



Temp is highest in areas close to the equator.
As you move away from the equator, the temp decreases.
Why? Because of direct (perpendicular rays) 90° at equator.

At poles - perpendicular rays.
(Also Accept - distance + thicker layers at poles)

1.5.1. - True

2 - False

3 - True

4 - False

5 - True

1.6. A - Crust

B - Mantle

C - Inner Core

D - Outer Core

1.7.1. 1 - Lacolith

2 - Batholith

3 - Dyke

4 - Sill

1.7.2. Process - transfer of molten material from one part of the earth's crust to another.

1.7.3. Intrusive - below surface/under

Extrusive - lava flows on surface.

1.7.4. Shield Cone

Cinder Cone

Composite Volcano.

Question 2.

- 2.1.1 temperature
- 2.1.2. crystallization
- 2.1.3. relative - humidity
- 2.1.4 heat balance
- 2.1.5. coalescence

2.2.1. Increasing of the world's average temp.

2.2.2. altered weather patterns / droughts / floods / plants and animals die.
hunger / famine.

(1) 2.2.3. - Poor countries such as African countries - govts do very little to combat effects of global warming.

- They are primitive - hence more prone to effects of G. Warming.
Homes made of poor building material / Lack technology - eg early warning signals
Economies linked to agriculture etc / Poor infrastructure, sanitation etc
(open ended)

2.2.4.1. Govt - ultimate decision maker in country. - has money to implement strategies \Rightarrow should take lead in decision making.

- Govt should however consult with experts in the field.

(1) - Input from general population - thro' referendums / public annoucement

- Also - importantly - internationally - intergovt panel should co-operate to address the issues.

2.2.4.2. (1) Is the evidence of climate change reliable and conclusive?

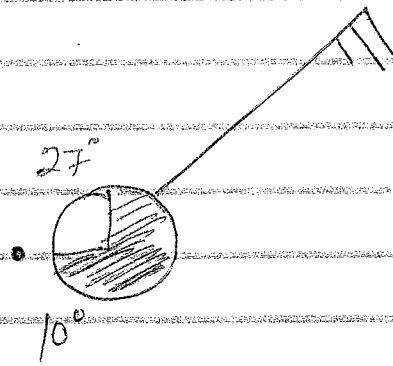
- bec decisions made will have far-reaching consequences on people's lives - jobs / livelihood & health etc.

(2) What conclusive proof is there about the causes of climate change or global warming?

(3) Which countries are responsible for climate change?

(4) What are the implications for future generations?
(open ended)

23.



2.4.1. over-fold

2.4.2. Focus

2.4.3. Tsunami

2.4.4. fault

2.4.5. Block mountain

2.5.1. PANGEA

2.5.2. Laurasia

Gondwanaland.

2.5.3. Similar fossils

Fit like jig-saw puzzle

2.6.1. Person who studies volcano.

2.6.2. First in 52 yrs - First major eruption in 200 yrs

2.6.3. Interrupted flights / Trains

600 people evacuated. / Threat to people's lives & Enviro /
Ash deposits & Clouds

2.6.4. Tourist attraction

Precious metals eg gemstones

Fertile soil

geothermal activity - generate electricity

Islands form.

2.7.1. a) - violent vibration of earth's crust. (slippage of crustal plates)

b) - directly above focus where greatest intensity of the earthquake is felt.

2.7.2. Severe

2.7.3. Large mass of ice/snow that falls downslope or down mountain.

2.7.4. Destroyed the base camp.
killed at least 17 people
injured 61 others.

2.7.5. - Less tourists to view WHS - hence less income - GDP

- Repairs to damage - impact - rely on economy
govt has to pay for damages/repairs.
- loss of jobs -

C

C