Education and Sport Development

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NORTH WEST PROVINCE

PROVINCIAL ASSESSMENT

GRADE 10

GEOGRAPHY P1

JUNE 2019

MARKING GUIDELINES

This marking guide consists of 7 pages (including cover page)

QUESTION 1

1.1

1.1.1. Isobars ✓

1.1.2. Condensation ✓

1.1.3. Isotherms ✓

1.1.4. Air pressure ✓

1.1.5. Thermometer ✓

1.1.6. Crust ✓

1.1.7. Weathering ✓

1.1.8. Igneous rock ✓

1.1.9. Fossil ✓

1.1.10. Metamorphic rock ✓ (10x1)10

1.2

1.2.1 Stratosphere ✓ (1x1)1

1.2.2 The higher the altitude the lower the air pressure ✓ (1x2)2

1.2.3 Ozone **<u>filters out harmful ultraviolet rays</u>**✓✓ that have a bad influence on the functioning on plant and animal cells. (1x2)2

1.2.4 CFC's produced by cooling equipment, aeroplanes, air conditioners, fridges and aerosols ✓✓ combine with one of the oxygen atoms and forms another bond which prevent the ozone (O_3) to combine and function. ✓✓ (2x2)4

1.2.5 The temperature in the lower reaches is very low, but extremely high in the outer layer of the thermosphere / extreme temperature ✓✓
The air pressure is so low ✓✓that a human body would explode. (2x2)4

1.3

1.3.1 (a) Sun✓ (1x1)1

(b) B✓ (1x1)1

(c) C✓ (1x1)1

1.3.2 A greenhouse is a glass house that people use to grow plants. ✓✓
The air inside stays warm because it traps heat. ✓✓
Examine how the Earth's atmosphere works in a similar way to the way a greenhouse works ✓✓ (3x2)6

1.3.3 Without the natural greenhouse effect, the Earth would be too cold to live on, like the moon. ✓✓ (1x2)2

1.3.4 Some areas in Africa will experience more rain, while others will experience more severe droughts
Plant and animal species will be affected by changes in their habitats – and they may become extinct✓✓ Tropical forests will not be able to adapt to the warmer temperatures, and will be destroyed✓✓ Crop yields will be lower, leading to more hunger and starvation✓✓Glaciers and ice caps such as Mount Kilimanjaro will melt- reducing a fresh water supply for people in the area.✓✓Agriculture will be affected by reduced water resources✓✓Diseases such as malaria and cholera will increase✓✓People will die due to exposure to heat (heat stroke) ✓✓A rise in sea levels will affect all the coastal cities along the shores of Africa✓✓An increase in uncontrollable fires will result in a lower humidity, strong winds and high temperatures✓✓People will have to migrate due to a shortage of water or the flooding of coastal areas and islands✓✓

[Any two] (2x2)4

1.**4**

1.4.1 A: Crust ✓

D: Inner core ✓ (2x1)2

1.4.2 A ✓and D ✓or Crust ✓ and Inner core ✓ (2x1)2

1.4.3 a) D / Inner core ✓ (1x1)1

b) It experiences high temperatures due to the high pressure on this layer ✓✓ (2x1)2

1.4.4 A: Batholith ✓

C: Laccolith ✓ (2x1)2

1.4.5 Igneous rock ✓ / Granite / Basalt (1x1)1

1.4.6 F- consist of magma ✓

I- consist of lava ✓ (2x1)2

1.4.7 K is extinct✓ (1x1)1

1.4

1.4.1 A Divergent/constructive✓
B Convergent/destructive✓
C Passive or transverse✓ (3x1)3

1.4.2 A mid oceanic ridge forms when two oceanic plates are moving apart from one another. As they pull apart, magma rises and solidifies on the surface to create new land.
Oceanic trenches form when a denser oceanic plate collides with a less dense continental plate. The denser oceanic plate slides beneath the less dense continental plate, creating a deep subduction zone.

[ANY TWO] (2x2)4

1.4.3 When two continental plates collide, the land in between folds up to form fold mountains. This can also take place when a continental and oceanic plate collides (mountains will form on the continental plate)
(1x2)2

1.4.4 Must be paragraph format. Marks awarded as follows:
Heat inside the Earth rises from the core and spreads to the mantle
This takes place in the form of convection currents
At the surface, the convection current moves sideways and downwards to complete the convection cell
Tectonic plates lie on top of the mantle and moves with the convection cells created inside the mantle. [ANY THREE] (3x2)6

QUESTION 2

2.1

2.1.1	L✓
2.1.2	D✓
2.1.3	B✓
2.1.4	F✓
2.1.5	I ✓
2.1.6	A✓
2.1.7	K✓
2.1.8	G✓
2.1.9	J✓
2.1.10	H✓

(10x1)10

2.2

2.2.1 Water cycle / hydrological cycle ✓

2.2.2 Evaporation is when water change from a liquid to water vapour gas.✓✓

2.2.3 Evaporation from oceans supplies the moist air that leads to cloud formation.✓✓ This moist air is also light and unstable and tend to rise and form clouds✓✓

2.2.4 Orographic / Relief rain ✓

2.2.5 A rain shadow is an area behind the mountain where very little rain occurs as the air temperature rises (at D.A.L.R) and the humidity drops ✓✓when air moves down this side of the mountain. This is usually on the inland side of the mountain and on the opposite side that receives orographic rain. ✓✓

2.2.6 Moist air is forced up / rises ✓✓

The air mass cools downs ✓✓

The air mass reaches dew point temperature above 0ºC ✓✓

Condensation start to take place and water drops ✓✓

Clouds form and water drops accumulate and fall down in the form of raindrops ✓✓

2.3

2.3.1. 14: 00 ✓ (Do not accept 12:00 – Universal time) (1x1) (1)

2.3.2. A: 40ºS Latitude ✓

B: 35ºE Longitude ✓

C: Isobars ✓

D: Cold front ✓ (4x1) (4)

2.3.3. Summer ✓ (1x1) (1)

2.3.4 1 December - date indicate summer in the Southern Hemisphere. ✓✓ (1x2) (2)

2.3.5 a) 3ºC ✓

b) 0ºC ✓

c) 10 knots ✓

d) SW ✓

e) Showers✓

f) 1004 / 1005 hPa ✓

g) (7x1) (7)

2.4

2.4.1. 9.1 On the Richter scale✓✓ (1 x 2)2

2.4.2. Near Banda Aceh ✓ (1x1) (1)

(250 km SSE of Banda Aceh, Sumatra, Indonesia)

2.4.3. A Point on the surface of the Earth where the Earthquake was most intense, (above the focus which lies underground where the rock shifted.) ✓✓ (1x2) (2)

2.4.4 Tsunami ✓✓ (1x2) (2)

2.4.5 A tsunami is a massive wave that forms when an earthquake displace seawater✓✓/ A tsunami is a series of fast-moving waves in the ocean caused by powerful earthquakes or volcanic eruptions. ✓✓ (2x2) (4)

2.4.6 Warning systems: (Must be in paragraph form) People can evacuate the area in time ✓✓ Can identify evacuation routes and safe assembly points✓✓ Can predict severity and possible damage ✓✓ Rescue operations: (Marks must be split between 2 headings) Trapped people can be located and rescued✓✓ Injured people can get medical care✓✓ Emergency services can be set up to assist victims✓✓ Food and water can be distributed ✓✓ Tent camps can be erected as temporary housing✓✓ Clean up operations can help get and burry bodies to prevent the spread of disease✓✓ Bodies can be identified before burial ✓✓ [ANY THREE] (3x2)6

2.5

2.5.1

a. Ring of Fire✓ (1x1) 1

b. This is where the plates meet, where plates are either moving apart or together. At the edges of the plates, there are weak spots where magma wells up and forms volcanoes. ✓ (Concept) (1x2) 2

2.5.2 Active volcanoes are still erupting or are still expected to erupt Dormant volcanoes have not erupted in a long time, is resting, but scientists cannot say that they will never erupt again. (2x2) 4

2.5.3 The volcanic ash that was produced by the volcano is dangerous for aviation as the dust particles could get stuck in the engines of the aeroplane. ✓✓ (1x2) 2

2.5.4 It can be extremely damaging to the environment, because of several toxic gases possibly present in pyroclastic material. ✓✓ It contains carbon dioxide and sulphur dioxide gas.✓✓ Carbon dioxide emitted from volcanoes adds to the natural greenhouse effect. Sulphur dioxides cause environmental problems because they are converted to sulphuric acid in the stratosphere; the main cause of acid rain. ✓✓ Furthermore, sulphate aerosols are formed, which reflect solar radiation and absorb heat, thereby cooling the earth. ✓✓ Sulphate aerosols also take part in chemical reactions, forming ozone destructive material.✓✓

It also affects the weather by producing a lot of rain, lightning and thunder during an eruption. ✓✓

This is because all the ash particles that are thrown up into the atmosphere are good at collecting water droplets. ✓✓

It can also form volcanic fog. ✓✓

[ANY TWO] (2x2)4

2.5.5 The reason why people inhabit land so close to volcanoes is because of the fertile nature of the soil. ✓✓

Lava and ash-based soil makes excellent land for agricultural purposes. ✓✓
Volcanoes heat the groundwater in the surrounding area, concentrating deposits of many important metallic minerals, including gold, lead and zinc over time. ✓✓
In some areas, such as the geysers geothermal field in California, the power of volcanoes has been harnessed for energy. ✓✓
Volcanoes can also bring income to an area by attracting tourists, who come to hike and cycle on the volcano, or just view the spectacular landscape. ✓✓

[ANY TWO] (2x2)4

TOTAL = 140