TEACHERS WITHOUT BORDERS PROGRAMME

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In Bill Gates words, at the Mandela Day 'Living Together' address: "Maintaining the quality of this country's higher education system while expanding access to more students will not be easy. But it's critical to South Africa's future" – working together, we can help achieve this."

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G11 GEOGRAPHY
MAY 2019

Time: 2 Hours **Total: 100**
Examiner: Edmonds
Moderator: Bailey

PLEASE READ THE FOLLOWING INSTRUCTIONS CAREFULLY

1 This paper consists of 7 pages, an insert of 2 pages. Please check that your question paper is complete.

2 Read the questions carefully.

3 ANSWER ALL QUESTIONS:

4 Credit will be given for
- interpretation and explanation, and
- evidence of personal observation in the field where this is appropriate to the question.

5 You are encouraged to use sketch maps, diagrams and other explanatory drawings to support your answers whenever relevant.

6 Number your answers exactly as the questions are numbered.

7 Candidates must pay attention to the mark allocation. Unless otherwise indicated, two marks are awarded for a valid response. This means that a question carrying four marks requires two responses.

8 It is in your own interests to write legibly and to present your work neatly.

9 Answer on paper and remember to draw in a marker's margin. Leave ALL margins blank.

SECTION A GEOGRAPHICAL ISSUES

QUESTION 1 GEOGRAPHICAL CASE STUDY: WESTERN CAPE

Refer to Figure 1: Meteogram of Cape Town on page one of the colour insert

1.1 Local weather patterns

1.1.1 State the (normal) season of greatest rainfall for the Western Cape. (1)

1.1.2 Describe how the climate of this area differs from that experienced by the rest of the country. (1)

1.1.3 Study Figure 1, a meteogram of Cape Town for 13 and 14 November.

a) State the air temperature and pressure for Monday 13 Nov 12:00 from Figure 1. (2)

b) When did it start raining (date and time)? (2)

1.1.4 Draw a weather station as would be shown on a synoptic chart for Cape Town for 06:00 on Tuesday 14 November, using the information from Figure 1. (5)

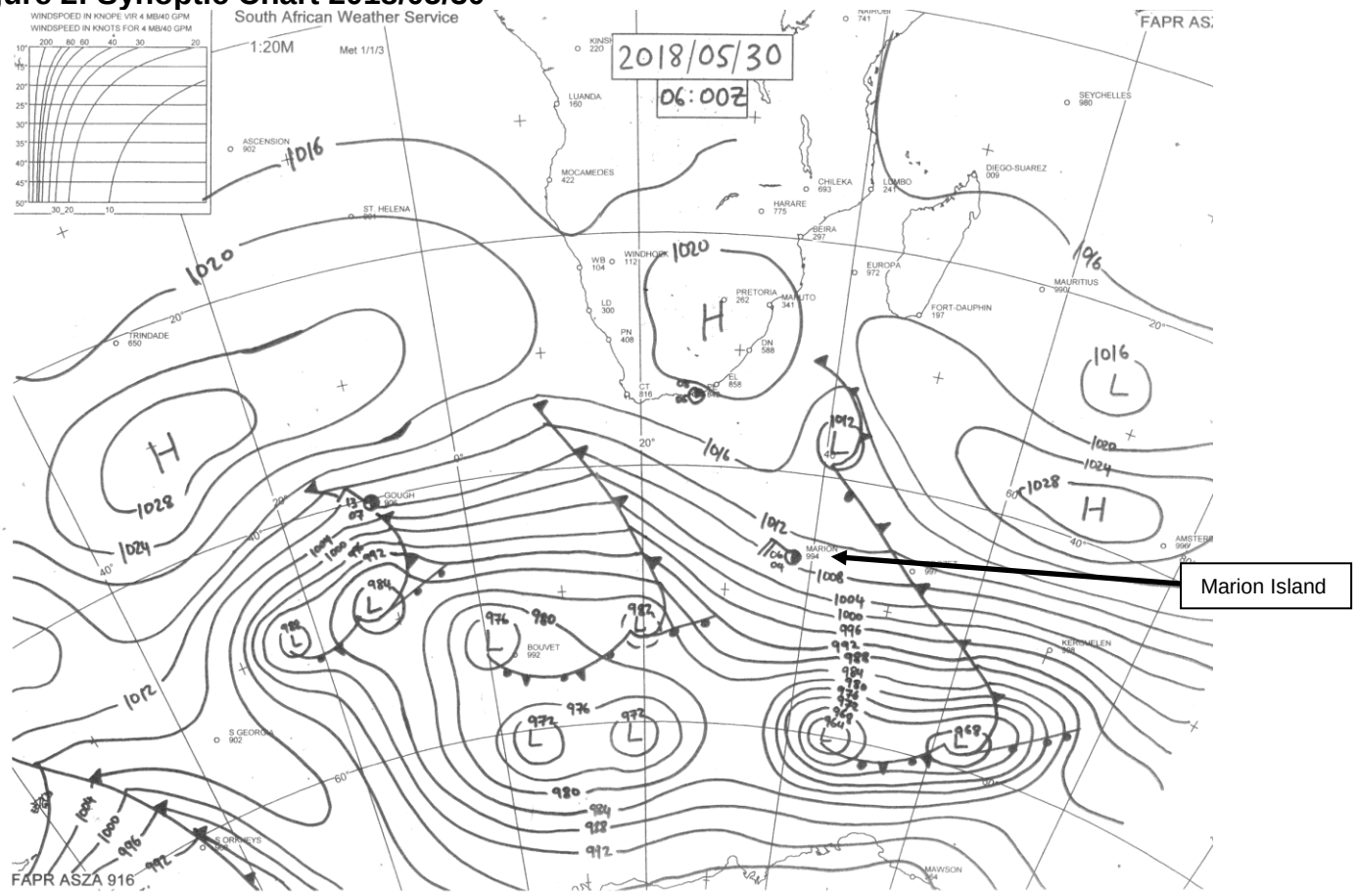
1.1.5 Suggest what probably caused the decrease in temperature seen on Tuesday 13 November. (1)

[12]

1.2 Synoptic charts

Refer to the synoptic chart below for 30 May 2018.

Figure 2: Synoptic Chart 2018/05/30



Source: SAWB - www.weathersa.co.za

1.2.1 Comment on the difference in wind speed around high pressure cells and low pressure cells. And provide a possible reason for the observed difference. (2)

1.2.2 a) State the approximate air pressure at Cape Town on Figure 2. (1)

b) State if this is a HP or a LP and motivate your choice. (2)

1.2.3 Berg Winds are occurring in the Western Cape on this date. With the aid of a diagram, explain how Berg Winds form. (6)

1.2.4 a) Identify the HP pressure belt which results in HP cell over the interior of SA. (1)

b) Name of the two primary circulation cells that occur on either side of this HP belt. (2)

1.2.5 Marion Island is experiencing a geostrophic wind.

a) State the wind speed at Marion Island. (1)

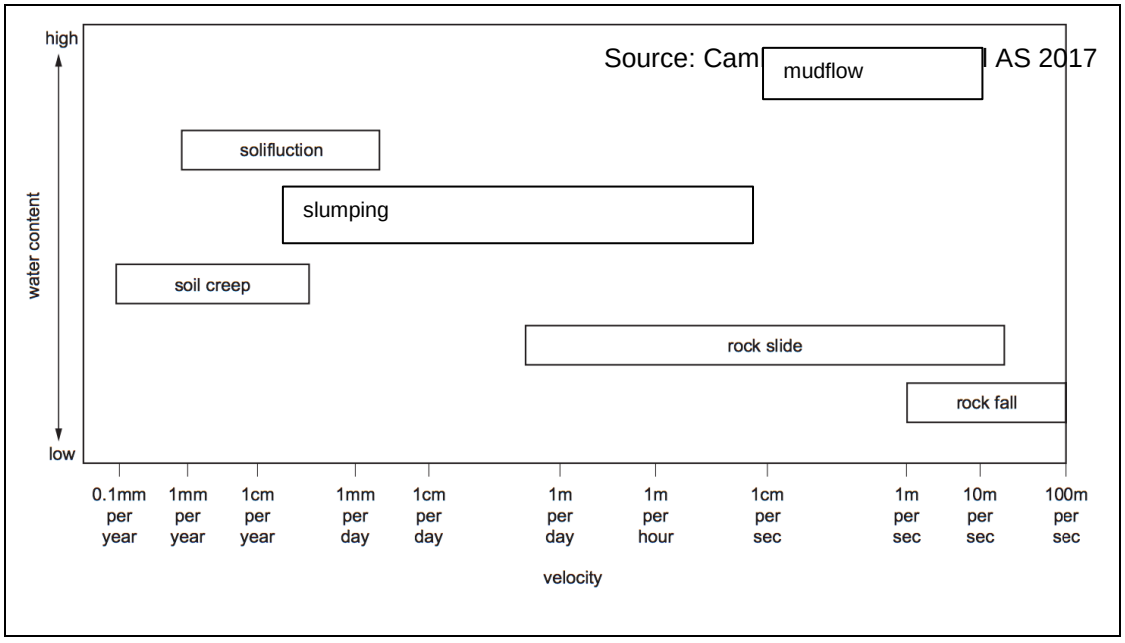
b) How do we know that the wind is "geostrophic"? (2)

c) Explain how a geostrophic wind forms. (4)
[21]

1.3 Mass movement

Study photographs A and B on page one of the colour insert, illustrating slope protection methods and rock falls on Sir Lowry's Pass and Figure 4 showing a classification of mass movements according to water content and velocity.

Figure 4: Classification of mass movements



1.3.1 Complete the table by using the information in Figure 4. (You only have to write the letters a-d and the answers; do not re-draw the table) (4)

	Water content	**Velocities**
mudflows	a)	c)
rock falls	b)	d)

1.3.2 Describe how slumping occurs. (4)

1.3.3 Define soil creep and explain why it occurs at such low velocities. (4)

1.3.4 Explain TWO strategies that could be used to prevent rock falls in situations as shown in photographs A and B. (4)

1.3.5 Elaborate on the impact rock falls have on commuters using Sir Lowry's Pass.(2)
[18]

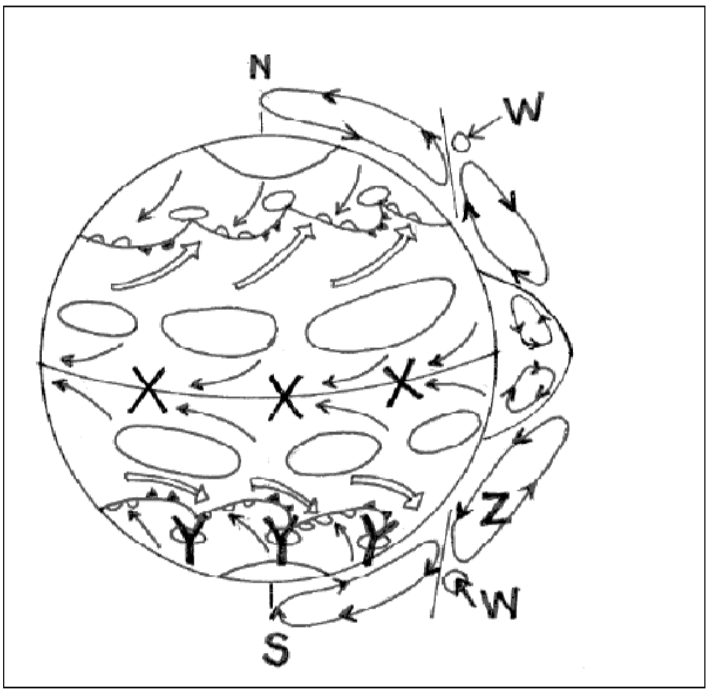
51 marks

SECTION B THE ATMOSPHERE AND GEOMORPHOLOGY

QUESTION 2

2.1 **Global air circulation**
Study Figure 6, a diagram showing the general circulation of the atmosphere.

Figure 6: The general circulation of the atmosphere



Various options are given as possible answers to the following questions. Select the most appropriate answer from the list. Write down only the question number and the correct answer. For example, 2.1.1. – D.

2.1.1. The pressure belt at X is ….
A the equatorial low
B the cool temperate high
C the warm temperate low
D the equatorial high (1)

2.1.2 The winds at Y are known as …..
A sub-polar south westerlies
B polar westerlies
C polar easterlies
D polar trade winds (1)

2.1.3 The air circulation cell at Z is the ….

A Equatorial cell
B Ferrel cell
C Hadley cell
D Polar cell (1)

2.1.4 There is a permanent … centred over the South Pole.

A cyclone
B low pressure trough
C polar front
D high pressure (1)

2.1.5 The name of the contact zone at W is ….

A a cold front
B the moisture front
C the polar front
D a warm front (1)

[5]

2.2 Climate of Africa.

2.2.1 Read the extract in Figure 8 about the drought in East Africa.

Figure 8: East Africa drought crisis

> Dr Chris Funk has no doubt that climate change is making things worse in the East African drought crisis – and believes Somalia is a warning to the rest of the world
>
> The climate in Somalia is difficult to assess because of the political and social situation, but they've had almost no rainfall in many areas.
> There are two rainy seasons in East Africa, one in October to December and another one in March to May. The March to May one has seen a really big decline – one of the most

a) Define the common geographic meaning of the term 'drought'. (1)

b) Explain why "There are two rainy seasons in East Africa, one in October to December and another one in March to May." (2)

c) Create a flow chart to explore the economic, environmental and social impacts of drought in Africa. (6)

[9]

2.3 **Johannesburg Dome**

Refer to Figure 9 on page one of the colour insert when answering the following questions.

2.3.1 Refer to the igneous intrusion labelled A on Figure 9.

a) Explain what is meant by an 'igneous intrusion'. (2)

b) Identify the type of intrusion which could have caused the dome above to have formed. (1)

2.3.2 Find the mountain range north of Pretoria on Figure 9.

a) Name this mountain range. (1)

b) This mountain range is a result of inclined strata. Explain what is meant by the terms 'inclined' and 'strata'? (2)

c) Draw a diagram to show this mountain range as it would appear on a topographical map. Label Pretoria to show its relative location (4)
[10]

2.4 Refer to Figure 10: **a landscape in Namibia,** on page two of the colour insert.

2.4.1 Identify this type of landscape. (1)

2.4.2 Analyse the usefulness of this type of landscape to humankind. (4)
[5]

29 marks

SECTION C MAPWORK

Question Three: Mapwork
Refer to the 1:50 000 Topographical map 2527DB Britz

3.1 On which line of longitude is Brits located
a) 27°47' E b) 25°38'E c) 27°38' S d) 25°47'S (1)

3.2 Give the Co-ordinates of •1176 in F4. (2)

3.3 a) Give the bearing and direction of the line between A (in A4) and B (in G1). (2)

Mean magnetic declination 10°30' west of true north (July 2010)
Mean annual change 2' westawards(2005-2010)
Using the above information calculate
b) the magnetic bearing: (1)
c) the magnetic bearing for 2013. (2)

3.4 Give the map code of the map directly to the North of the map 2527DB Brits. (2)

3.5 Calculate the distance of the railway line from the certre of Pendoring station (C4) to the centre of Stephanus station (H3). Give your answer in Km. (2)

3.6 How long would it take to travel from Pendoring station to Stephanus station if the trains speed was 4km/hr? Give your answer in hours and minutes. (3)

3.7. Calculate the average gradient between ∆104 in E10 and bench mark 1170.7 in F9? (3)

3.8 Give the altitude of the excavation in F3. (1)

3.9 a) In which general direction is the *Krokodilrivier* (river) flowing across the mapped area? (1)

20 marks