

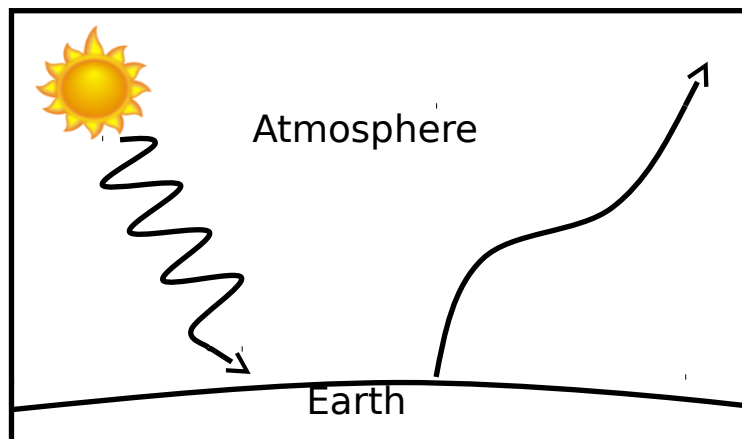
TIME: 45 MINUTES

50 MARKS

Instructions:

- Please number all questions as they are numbered on the question paper.
- Calculators may be used.
- No correction fluid may be used. Rule a neat line through any errors made.

1. State whether the following statements are **TRUE** or **FALSE**. Only write down the question number and the answer. E.g. 1.6. False
 - 1.1. Climate is the atmospheric conditions at a particular place and time (1)
 - 1.2. Cities on the equator have the greatest temperature ranges. (1)
 - 1.3. Cape Town is in the Mediterranean climate region. (1)
 - 1.4. Normally south facing slopes get the most sun in the northern hemisphere. (1)
 - 1.5. The Himalayas funnel cold air into India. (1)(5)
2. List five factors that influence temperature and precipitation. (1x5=5)
3. "Land surfaces are hotter than sea surfaces in the summer." Give **THREE** reasons why this statement is true. (3x2 = 6)
4. Study the diagram below on the heating of the atmosphere and answer the questions that follow.



- 4.1. Explain how the atmosphere is heated. (6x1=6)
 - 4.2. Rustenburg Girls High School (RGHS) is approximately 40m above sea level. The top of Table Mountain is approximately 1140m above sea level. If the temperature is 20°C at RGHS what will the temperature be at the top of Table Mountain? (Show all calculations) (4)
- (10)

5. Refer to Table 1 and Table 2 then answer the questions that follow.

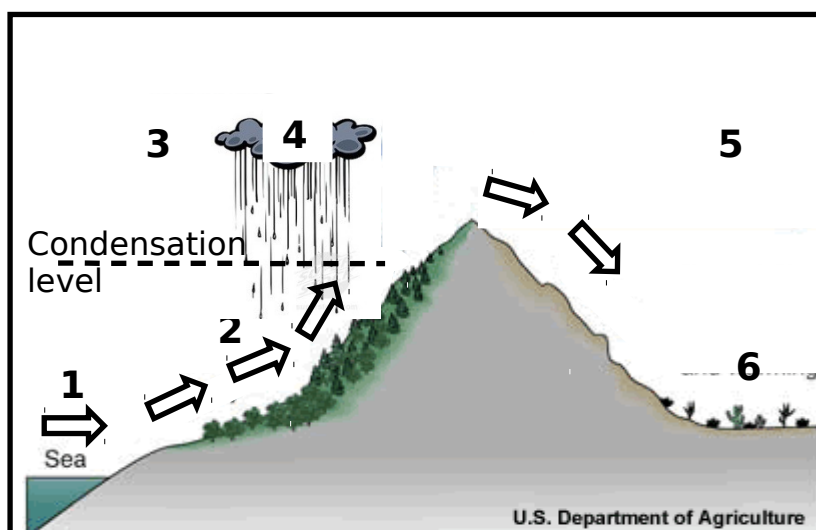
Table 1

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Max (°C)	31	29	27	24	21	17	18	20	26	28	28	30
Min (°C)	15	15	12	8	3	-1	-1	1	6	9	12	14

Table 2

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Max (°C)	28	28	28	27	25	23	23	23	23	24	25	27
Min (°C)	21	21	21	18	15	12	12	14	16	17	19	20

- 5.1. The two tables are for the cities of Durban and Bloemfontein. Which table is for which city? (1)
 - 5.2. Explain the reason for your answer in 5.1. (2x1=2)
 - 5.3. What is the average maximum temperature for the city in Table 1? (2)
 - 5.4. In Table 1 which month has the biggest temperature range? What is the temperature range in that month? (1+2=3)
 - 5.5. In Table 2 which month has the smallest temperature range? What is the temperature range in that month? (1+2=3)
 - 5.6. What is the name of the ocean current that flows past Durban? (1)
 - 5.7. In which direction does this current flow and is it a warm or cold current? (1+1=2)
 - 5.8. How does this current influence Durban's rainfall? (1x2=2)
 - 5.9. Are Durban and Bloemfontein in a summer or winter rainfall area of South Africa? (1)
- (17)**
6. Study the diagram below and provide the correct labels. Write down the numbers 1 - 7 and then give the correct labels. For **Number 7** state the type of rainfall occurring at 4? (7x1=7)



1. State whether the following statements are **TRUE** or **FALSE**. Only write down the question number and the answer.
- 1.1. F (1)
- 1.2. F (1)
- 1.3. T (1)
- 1.4. T (1)
- 1.5. F (1)
- (5)**
2. Latitude or distance from equator
Mountains or relief
Ocean currents
Altitude
Distance from the sea (1x5=5)
3. Water is transparent so rays penetrate deeper (bigger area to heat) while only the top surface of land warms up.
Water moves & distributes heat (waves and currents)
Evaporation from water surface (uses energy) so cools the water down
Water reflects much of the sun's energy (albedo)
Land masses only need $\frac{1}{2}$ as much heat to raise the temperature by 1°C as the same mass of water.
ANY 3 (3x2 = 6)
- 4.1. The sun heats the earth's surface in the form of short wave radiation called insolation. The earth then heats the atmosphere in the form of long wave radiation called terrestrial radiation. (6x1=6)
- 4.2. $1140\text{m} - 40\text{m} = 1100$, $1100/100=11$, $11 \times 0.65^{\circ}\text{C} = 7.15^{\circ}\text{C}$, $20 - 7.15^{\circ}\text{C} = 12.85^{\circ}\text{C}$ (4)
- (10)**

- 5.1. Table 1 = Bloemfontein Table 2 = Durban? (1)
- 5.2. There is a smaller difference in the max and minimum temperatures of Durban as it is at the coast (Durban has a smaller temperature range). Vice versa for Bloemfontein because it is far from the coast **(Any of the two)** (2)
- 5.3. 25 °C (24.9 °C) (2)
- 5.4. September, 20 °C (1+2=3)
- 5.5. Nov, 6 °C (1+2=3)
- 5.6. Mozambican (1)
- 5.7. South, warm (1+1=2)
- 5.8. A high rainfall or increases rainfall (2x1=2)
- 5.9. Summer (1)
- (17)**
6. 1. Warm moist air
2. air rises and cools down.
3. Windward side
4. Clouds form
5. Leeward side or rain shadow
6. Rain shadow (dry conditions) or leeward side
7. Orographic rainfall or relief rainfall **(7x1=7)**