

SNC2P

Climate Change Unit Test

Name: _____

Part A Knowledge (59 marks total):

1. Fill in the blanks: (6 marks)

The Sun is the main energy source for our planet. Its energy travels through space in three forms of EM radiation.

Three types of this energy are IR, V and UV. This energy interacts first with our atmosphere before it interacts with the lithosphere and the hydrosphere (the "rock" sphere and the "water" sphere).

All energy is eventually re-emitted as IR radiation and interacts with our atmosphere for a second time.

2. Fill in the blanks with the correct type of heat transfer. (3 marks)

Heat can be transferred from one object to another in 3 unique ways:

Conduction

Hotter particles move faster and as they bump into their neighbouring particles the energy is spread transferring the thermal energy.

Convection

Hotter particles that are free to move rise while cooler particles fall. A current of movement is then established.

radiation

Electromagnetic radiation stimulates the movement of specific particles within an object. The best example is the use of a microwave oven which stimulates the motion of a water particles.

3. As a class we discussed the carbon cycle and the six important steps involved in the carbon cycle. What were those six steps? (6 marks)

1. Atmosphere → Plants Photosynthesis
2. Plants → Animals Food Chain
3. P + A → Ground Fossilization
4. Living → Atmosphere Respiration
5. Fossil fuels → Atmosphere Burning
6. Atmosphere ↔ Oceans Dissolving

4. Define, BRIEFLY, the following key terms (20 marks)

Heat Source	gives off heat	Sun
Heat Sink	absorb heat	water
<u>Carbon Source</u>	gives off CO ₂	car
<u>Carbon Sink</u>	absorbs CO ₂	tree
Atmosphere	layer of gases surrounding the earth	
Global Warming	increase in T ↑ due to Greenhouse Gases	
Fossil Fuels	fossils which can be burned for energy	
• Climate	long term T, Precipitation	
• Weather	short term T, Precipitation	
Greenhouse Gas	traps IR, ex CO ₂	

5. Using the word bank below, fill in the correct definition for each of the following spheres of the earth. (10 marks)

The Lithosphere is the ground you are standing on and the whole inside of the earth. It's also known as the "rock sphere"

The hydrosphere includes all of the rivers, lakes and oceans of the earth. It's also known as the "water sphere" - - -

The Cryosphere is the frozen part of the earth: the glaciers, icebergs at sea, and the huge icecaps in Greenland and Antarctica. It's also known as the "ice sphere"

The biosphere includes all living things: the trees in the park, the birds in the air, the fly on your wall, the viruses that make you sick, your pets, and even all of you and your friends. It's also known as the "living sphere"

The atmosphere is the envelope of air that surrounds the whole Earth. It is made up of mostly gas with very little parts of liquid water, frozen water and dust particles. It's also known as the "air sphere"

- Biosphere
- living
- Hydrosphere
- water
- rock
- Atmosphere
- Cryosphere
- Lithosphere
- icy cold
- Air

Part B: Application and Thinking (marks total) **24**

6. Annual Climatology: Cape Town, South Africa (12 marks)

Elev: 17.1 m Lat: 33 ° 54' S Long: 18 ° 32' E

Precipitation Data (mm) : Temperature Data (°C):

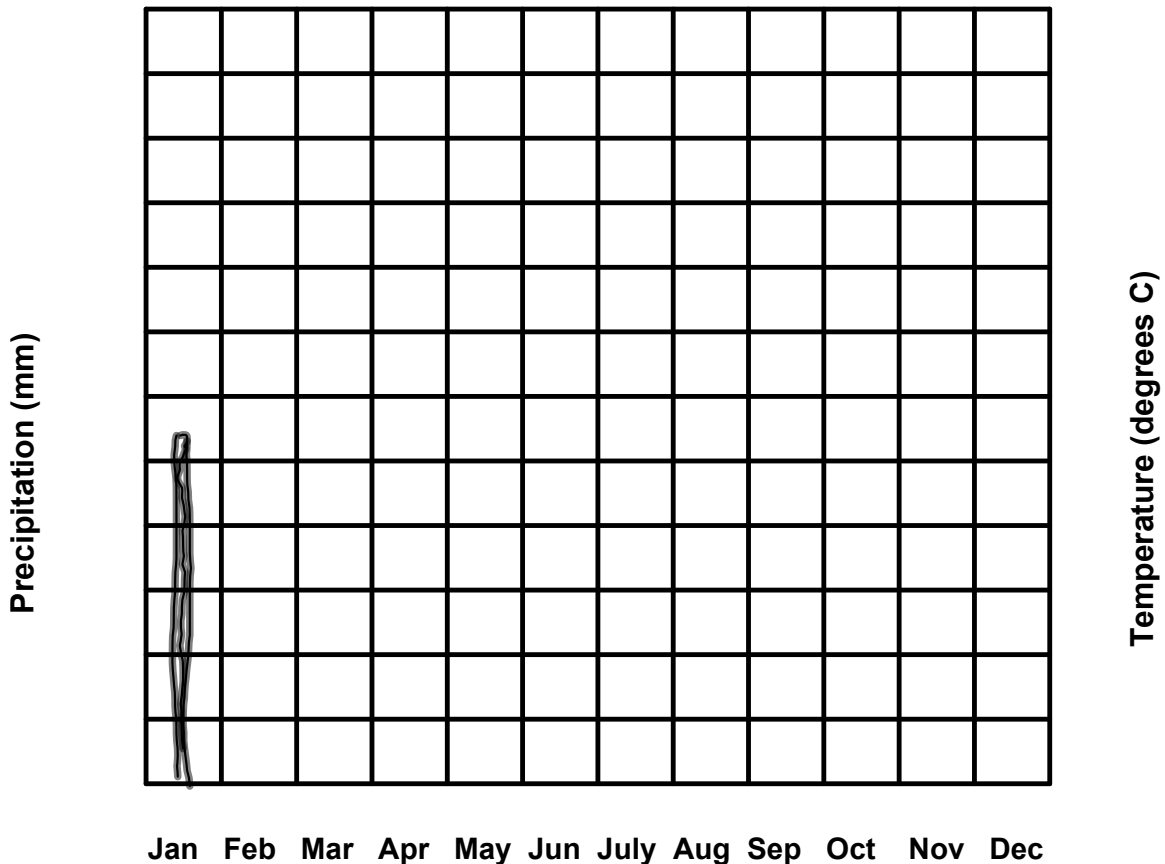
Month	Mean
January	15.0
February	17.0
March	20.0
April	41.0
May	69.0
June	93.0
July	82.0
August	77.0
September	40.0
October	30.0
November	14.0
December	17.0
Annual	515.0

Month	Daily Max	Daily Min	Mean
January	26.1	15.7	20.9
February	26.5	15.6	21.1
March	25.4	14.2	19.8
April	23.0	11.9	17.5
May	20.3	9.4	14.9
June	18.1	7.8	13.0
July	17.5	7.0	12.3
August	17.8	7.5	12.7
September	19.2	8.7	14.0
October	21.3	10.6	16.0
November	23.5	13.2	18.4
December	24.9	14.9	19.9
Annual	22.0	11.4	16.7

Precipitation is shown by the bar graph. Temperature is shown by a line. Complete the Climograph for this city.

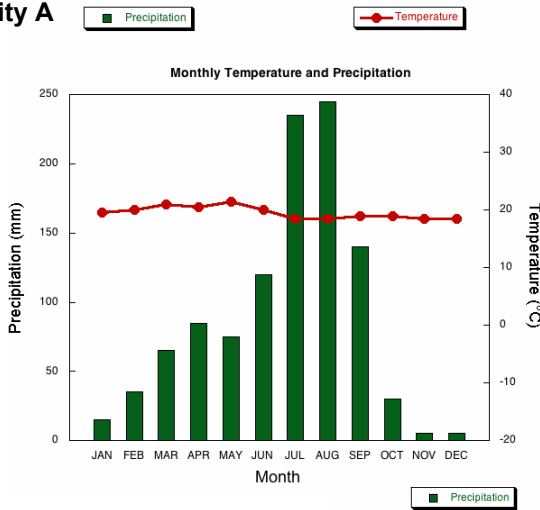
Climograph for the Community of:

Cape Town, South Africa

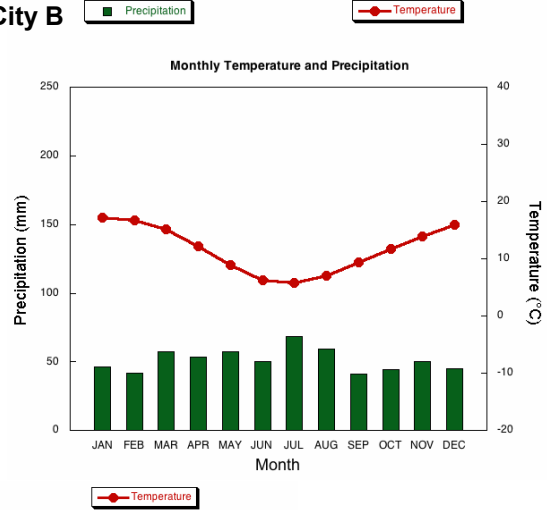


7. Look at the 3 Climographs and answer the questions below:

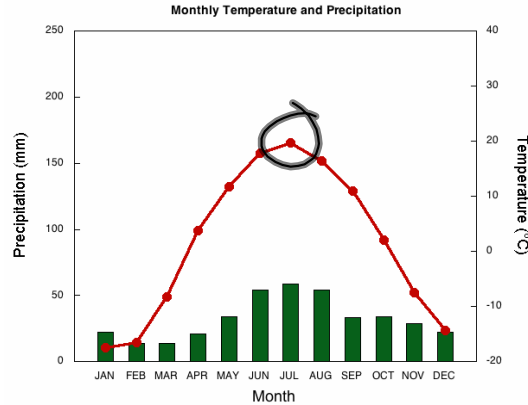
City A



City B



City C



1. Which city is in the northern hemisphere, City A, B, or C? (above the equator)
How do you know this? (3 marks)

C → Temperature is warm in J, cold in Dec.

2. Which city is in the southern hemisphere? (below the equator)
How do you know this? (3 marks)

B → T → warm in D, cold in J, J

3. Which city is nearest to the equator? (3 marks)
How do you know this?

A - least T swings

4. Which city would you like to visit for a holiday? What month would you like to go and why. (3 marks)

Course Grade
Term

63

70
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Exam

Written
+
Reading exercise

30