Name of the Student:_____
Max. Marks : 25 Marks **Time : 25 Minutes**

Q1.

This question is about the cycling of water and carbon in ecosystems.

(a) Which reaction produces water?

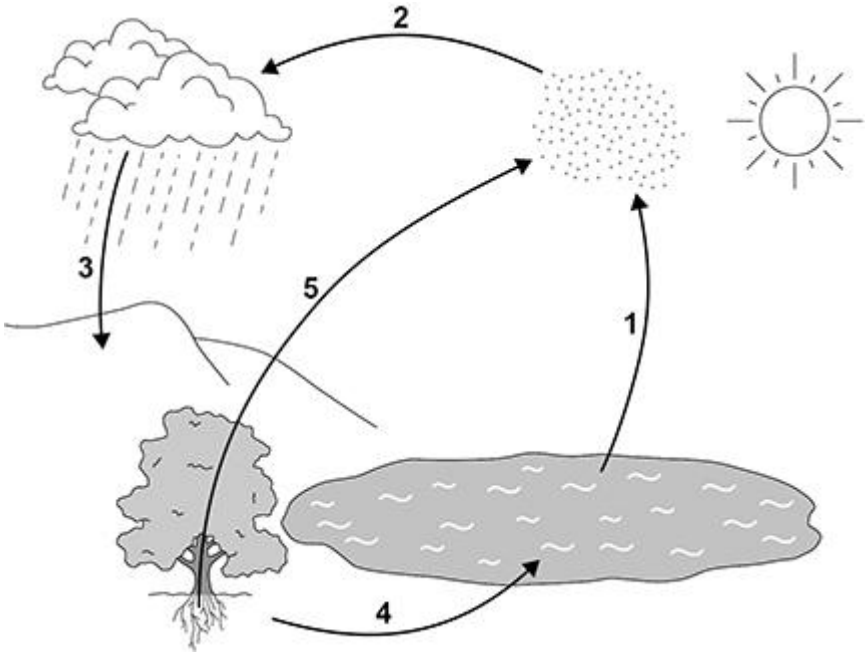
Tick (✓) **one** box.

Aerobic respiration	☐
Anaerobic respiration	☐
Photosynthesis	☐

(1)

The water cycle provides water for plants and animals on land before the water goes into lakes and seas.

The diagram below represents the water cycle.



(b) Name the processes **1** to **5** shown on above diagram.

1. _____

2. _____

3. _____

4. _____

5. _____

(5)

(c) In 2007 the population of the world was 6 000 000 000

A study found that 4.5% of the population had severe water shortage.

Calculate how many people had severe water shortage.

Give your answer in standard form.

_____

_____

_____

_____

_____

Number of people (in standard form) = _____

(3)

(d) Why do more people have severe water shortage now than in 2007?

Tick (✓) **two** boxes.

Climate change has increased the area of deserts.	☐
Each person drinks less water.	☐
More water is used to grow crops.	☐
Sea levels have risen because the ice caps are melting.	☐
Some countries have built de-salting factories for seawater.	☐

(2)

Leaves on a tree contain carbon compounds.

In autumn the leaves fall to the ground.

(e) Microorganisms in the soil recycle carbon from the leaves so that the carbon is used for new plant growth.

Explain how.

_____

_____

_____

_____

_____

_____

_____

_____

(4)

(f) What is **one** benefit of fallen leaves for living plants?

Tick (✓) **one** box.

Energy is released for living plants.	☐
Insect pests in the soil are killed.	☐
Nitrates are released into the soil.	☐
Oxygen is supplied to root cells.	☐

(1)

(Total 16 marks)

Q2.

There has been a rapid increase in the percentage of carbon dioxide in the atmosphere since 1960.

(a) Carbon dioxide is a greenhouse gas that contributes to global warming.

Name **one** other greenhouse gas.

_____

(1)

(b) Global warming causes climate change.

Give **two** effects of climate change.

1 _____

_____

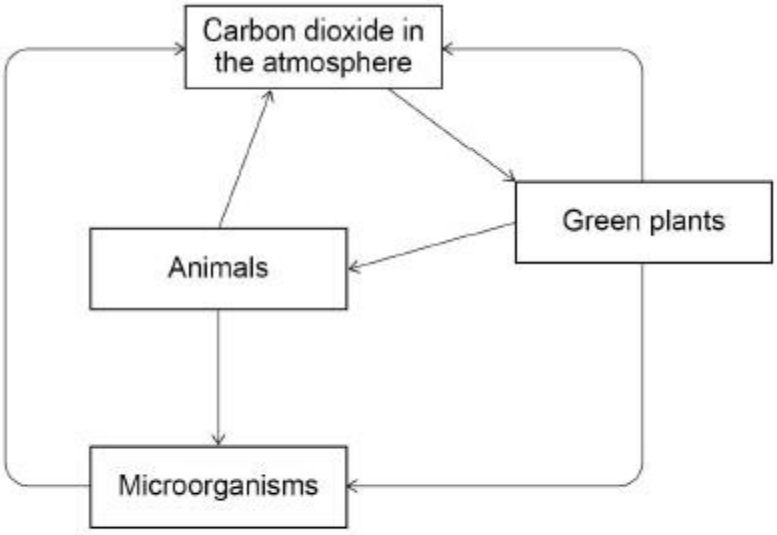
2 _____

_____

(2)

(c) Plants take in carbon dioxide from the atmosphere.

The diagram shows part of the carbon cycle.



Describe how carbon from the atmosphere is cycled through living organisms.

_____

_____

_____

_____

_____

_____

(6)
(Total 9 marks)