Candidate Name	Form Class	Index Number

ANG MO KIO SECONDARY SCHOOL
END OF YEAR EXAMINATION 2022
SECONDARY ONE EXPRESS

GEOGRAPHY

6th October 2022
1 Hour 15 Minutes

Setter: Mr Ian Mui

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your name, index number and class on all the work you hand in.
Write in dark blue or black pen.
You may use a soft pencil for any rough working.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer ALL the questions.
Write all answers on the spaces provided in this question booklet.
Candidates are encouraged to support their answers with the use of relevant examples.

At the end of the examination, fasten all your answers securely together.
The number of marks is given in brackets [ ] at the end of each question or part question

This document consists of **10** pages.

35

[Turn Over

Section A [17 Marks]

1 (a) Study Figure 1, which contains the diagram of a water catchment area.

Diagram of water catchment area

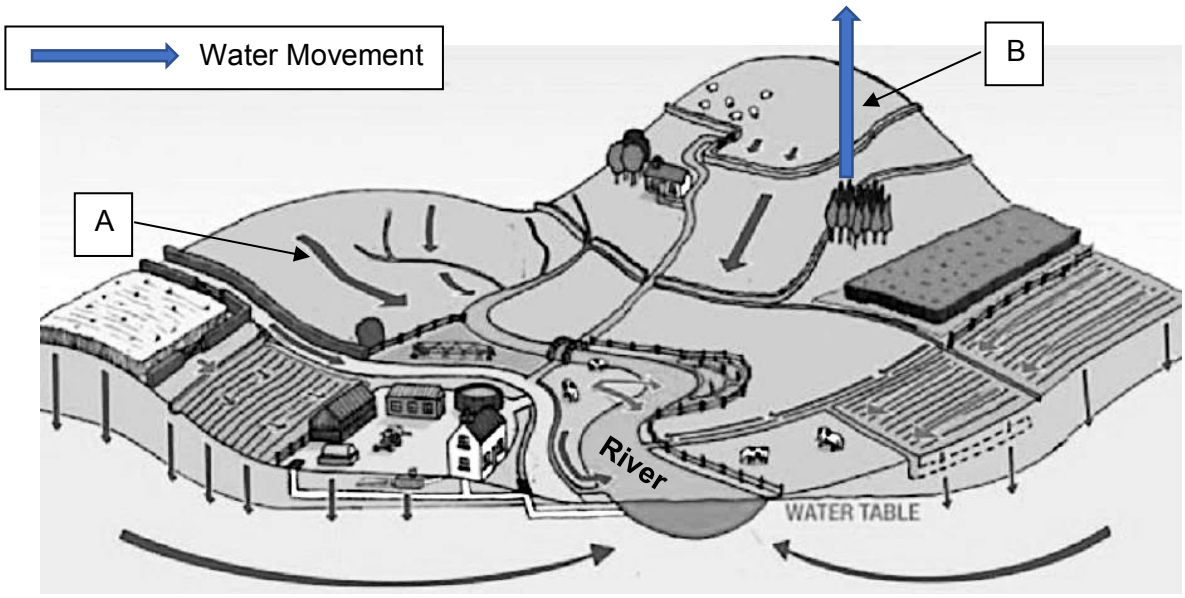

Figure 1

(i) With reference to Figure 1, describe processes A and B.

Process A: .....

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Process B: .....

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.....[2]

(ii) Explain what would occur if there was continuous rainfall in this water catchment area in Figure 1.

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(b) Figure 2 shows the global distribution of renewable freshwater resources by regions in 2015.

Distribution of global renewable freshwater resources in 2015 in km^3

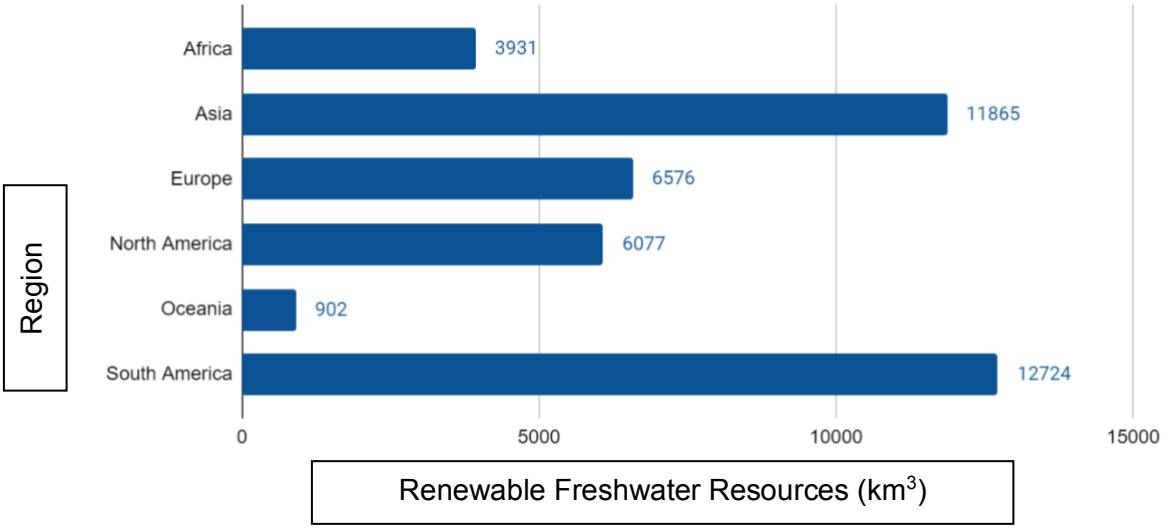

Figure 2

Using Figure 2, describe the distribution of renewable freshwater resources globally in 2015.

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.....[2]

(c) Study Figure 3, which is adapted from an article on Citarum River, which is located in Indonesia.

> The smell is the first thing that hits you on the banks of the Citarum River in West Java, Indonesia. Some 9 million people live in close contact with the river, where bacterial level is 5,000 times the permissible limits. Those living along the river have nowhere to dispose of rubbish, so they either burn it or throw it into the river. There are more than 2,000 companies in the area – mostly textile factories built near the river because they need large quantities of water. In recent years they have discharged enormous amounts of chemical waste directly into the river.

Figure 3

(i) Using Figure 3, describe how human use has caused the pollution of the Citarum River. Support your answer with evidence from the figure.

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……[3]

(ii) Explain how water pollution can harm aquatic plant and animal life living in water bodies.

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(d) (i) Describe and explain how importing water helps Singapore to sustainably manage her water resources.

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(ii) Explain one advantage and one disadvantage of importing water as a way to sustainably manage Singapore's water resources.

Advantage: ……

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Disadvantage: ……

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Section B [18 marks]

2 (a) Study Figure 4, which shows the distribution of tropical rainforests around the world.

Map of Distribution of Tropical Rainforests Around the World

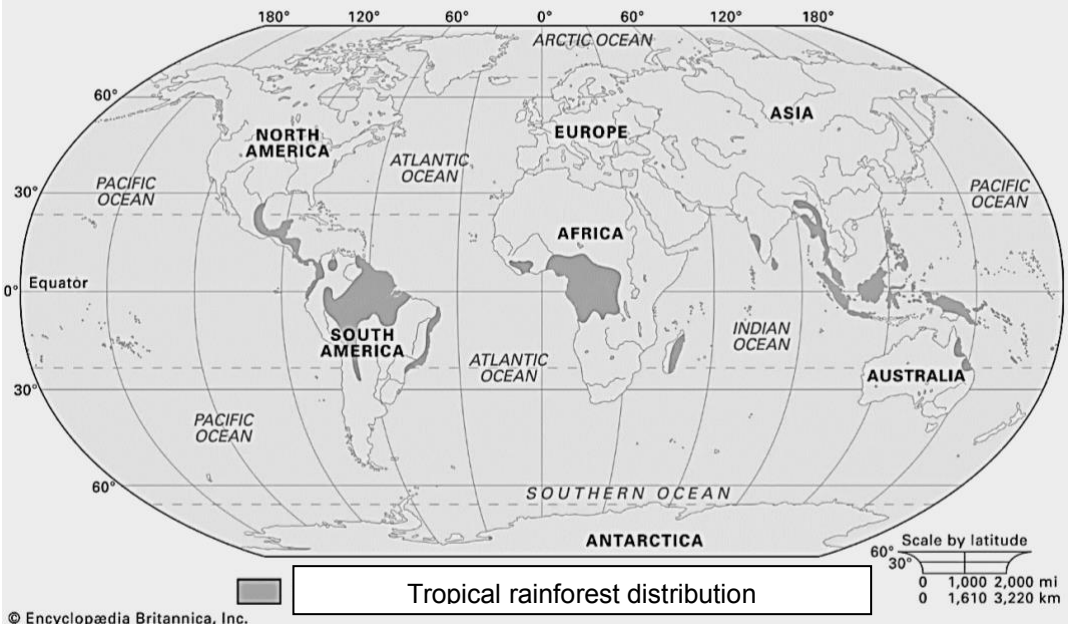

Figure 4

(i) Using Figure 4, describe the distribution of tropical rainforests around the world. Give an example of a tropical rainforest found on the map in Figure 4.

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(ii) Describe the conditions that allow for tropical rainforests to grow in the identified area in (i). Include values in your answer.

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(b) Explain how the leaves and the roots of mangrove trees help them to adapt to a saline environment.

Leaves: ……

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Roots: ……

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(c) Study Figure 5, which shows the rate of Amazon deforestation from 2004 to 2021.

Graph of Amazon Deforestation from 2004 to 2021

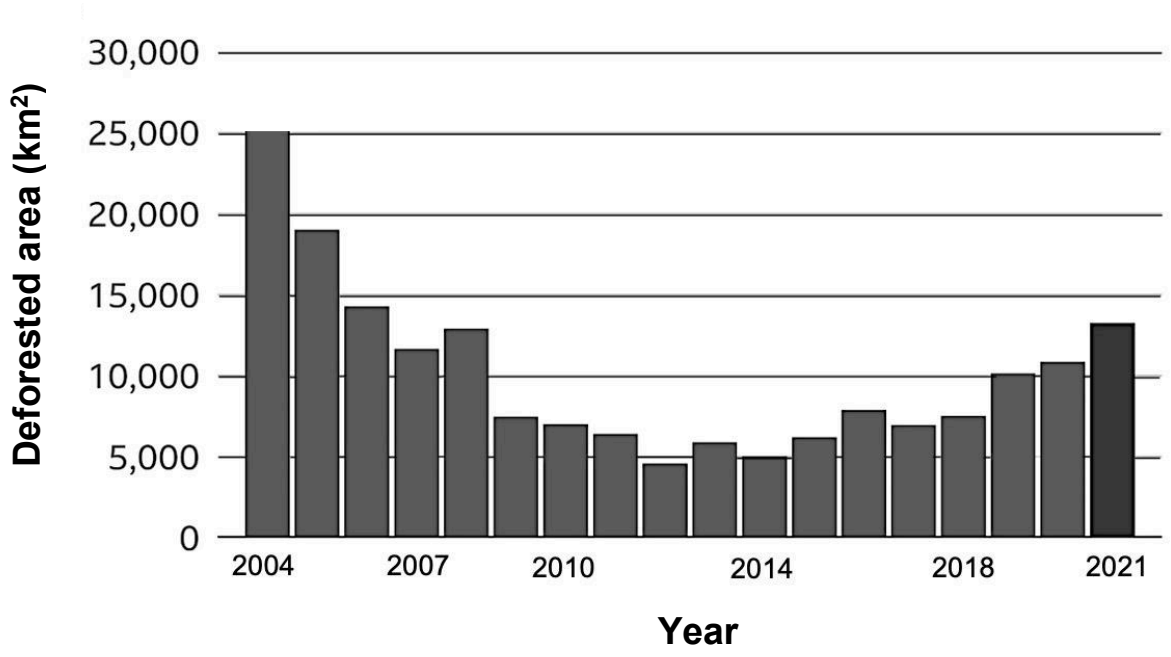

Figure 5

Using Figure 5, describe the change in Amazon deforestation rate from 2004 to 2014.

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(d) Explain how deforestation can affect the earth's global temperatures.

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(e) Study Figure 6, which shows a photograph of people helping to sustainably manage tropical rainforests.

Figure 6

(i) With reference to Figure 6, describe and explain one strategy that helps to sustainably manage tropical rainforest resources.

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……[3]

(ii) With reference to Figure 6, explain **two** advantages of using the identified strategy to sustainably manage tropical rainforest resources.

Advantage #1: ……

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Advantage #2: ……

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……[2]

Copyright Acknowledgements:

Figure 1	*http://adlib.everysite.co.uk/adlib/defra/content.aspx?id=000HK277ZX.0HCFOLJ8NC4429Y*
Figure 2	*https://ourworldindata.org/water-use-stress#water-stress-and-scarcity*
Figure 3	*https://www.theguardian.com/global-development/2020/nov/02/rotten-river-life-on-one-of-the-worlds-most-polluted-waterways-photo-essay*
Figure 4	*https://cdn.britannica.com/78/6578-050-EC3C0F07.jpg*
Figure 5	*https://www.bbc.com/news/59136545*
Figure 6	*https://www.workersliberty.org/files/pictures/forest5-1080x675.jpg*

END OF PAPER

Candidate Name	Form Class	Index Number

ANG MO KIO SECONDARY SCHOOL
END OF YEAR EXAMINATION 2022
SECONDARY ONE EXPRESS
ANSWERS

GEOGRAPHY

6th October 2022
1 Hour 15 Minutes

Setter: Mr Ian Mui

Candidates answer on the Question Paper.

No Additional Materials are required.

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Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer ALL the questions in both Section A and B.
Write all answers on the spaces provided in this question booklet.
Candidates are encouraged to support their answers with the use of relevant examples.

At the end of the examination, fasten all your answers securely together.
The number of marks is given in brackets [ ] at the end of each question or part question

Section A [17 Marks]

1	(a)	Study Figure 1, which contains the diagram of a water catchment area.

Diagram of water catchment area

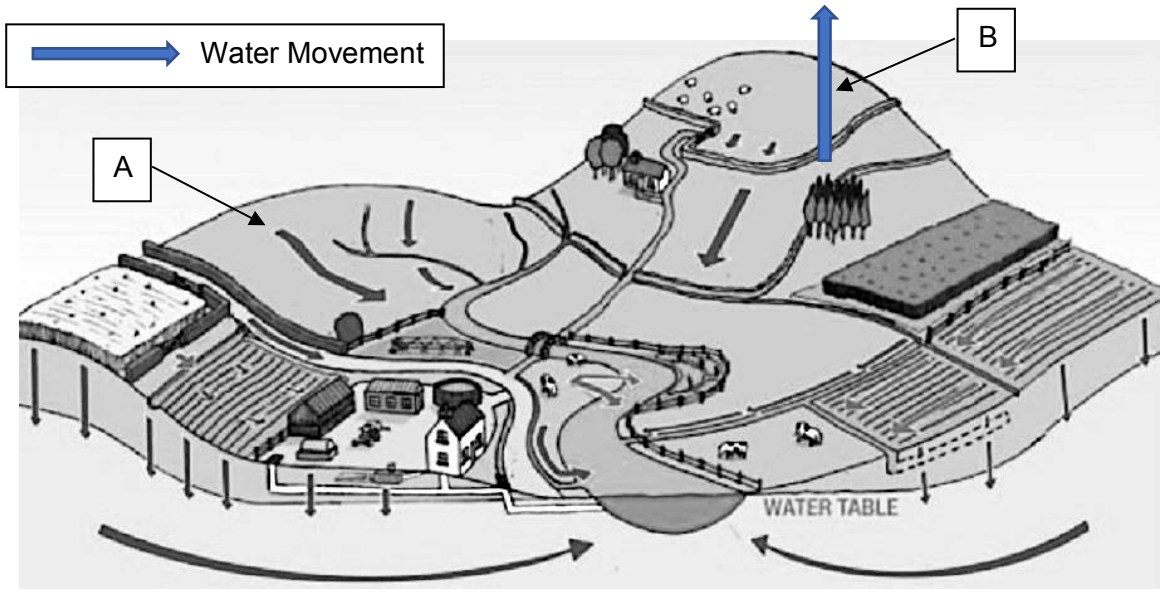

Figure 1

	(i)	With reference to Figure 1, describe processes A and B. [2]

Process A:

- Process A is <u>surface runoff</u>, which is the process where water flows <u>from highlands/mountains</u> <u>over the grounds</u> <u>into nearby water bodies/streams and rivers</u>

Process B:

- Process B is <u>transpiration</u>, which is the process where <u>plants give out water vapour through their leaves</u>.

Award 1m for each point. Candidates are required to identify and elaborate on the process to be awarded the 1m.

Cap of 1m for both points if students elaborate both processes but do not identify the processes described.

	(ii)	Explain what would occur if there was continuous rainfall in this water catchment area in Figure 1. [2]

- A river flood would occur. This occurs when there is high precipitation/heavy rain over a long period of time (or when snow and ice melt to produce meltwater in the spring).
- This causes large amounts of water to seep/infiltrate into the ground, causing water tables to rise and overflow the banks, leading to a river flood.

Award 1m for each point. Candidates need to identify that a river flood forms in the response given. Cap at 1m if students explain the formation of a river flood without mentioning that a river flood is formed.

	(b)	Figure 2 shows the global distribution of renewable freshwater resources by regions in 2015.

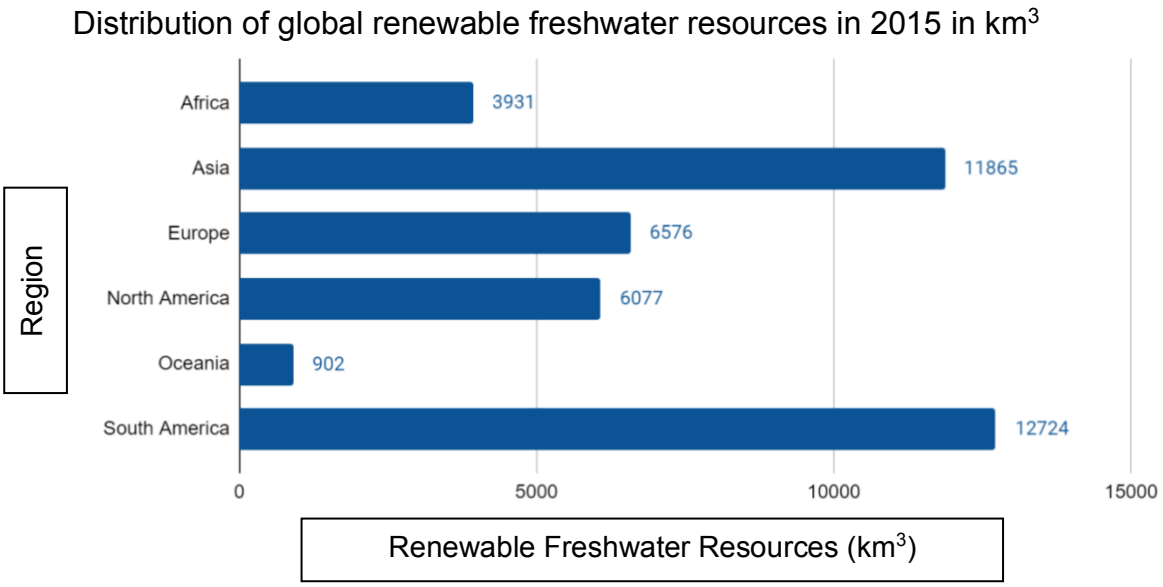

Figure 2

		Using Figure 2, describe the distribution of renewable freshwater resources globally in 2015. [2]

- The greatest amount of renewable freshwater resources is found in South Americas, with 12724 km^3 of water.
- The least amount of renewable freshwater resources is found in Oceania, with 902 km^3 of water.

EITHER award 1m for each point above OR Award 1m for pattern (for both regions) if no evidence is provided. Do not award marks if students list values without describing the pattern. Do not award marks for evidence if students did not give units.

	(c)	Study Figure 3, which is adapted from an article on Citarum River, which is located in Indonesia.

The smell is the first thing that hits you on the banks of the Citarum River in West Java, Indonesia. Some 9 million people live in close contact with the river, where bacterial level is 5,000 times the permissible limits. Those living along the river have nowhere to dispose of rubbish, so they either burn it or throw it into the river. There are more than 2,000 companies in the area – mostly textile factories built near the river because they need large quantities of water. In recent years they have discharged enormous amounts of chemical waste directly into the river.

Figure 3

	(i)	Using Figure 3, describe how human use has caused the pollution of the Citarum River. Support your answer with evidence from the figure. [3]

- When people throw rubbish into drains/release wastewater/chemicals from factories enter water bodies
- This causes harmful substances to lower water quality, leading to water pollution
- From the figure, it is seen that 'There are more than 2,000 companies in the area – mostly textile factories built near the river because they need large quantities of water. In recent years they have discharged enormous amounts of chemical waste directly into the river.' (factories) OR 'Those living along the river have nowhere to dispose of rubbish, so they either burn it or throw it into the river.' (household waste)

	(ii)	Explain how water pollution can harm aquatic plant and animal life living in water bodies. [3]

- When chemicals enter the water bodies, this can create an <u>algae bloom/eutrophication</u>
- This <u>blocks sunlight</u> from entering water bodies and <u>prevents aquatic plants from photosynthesising</u>
- This leads to <u>less oxygen</u> in the water that causes <u>aquatic animals and plants to die</u>/ OR decomposition uses oxygen, which leads to lesser oxygen and causes aquatic plants and animals to die.

Award 1m for each point

(d)	(i)	Describe and explain how importing water helps Singapore to sustainably manage her water resources. [3]

- Importing water refers to agreements between countries to supply water at an agreed cost
- Countries which have relatively abundant water resources may allow their neighbours to import water from them.
- This is so that there is an increase in supply of clean water available for human use to manage water in a sustainable manner.

Award 1m for each point.

	(ii)	Explain one advantage and one disadvantage of importing water as a way to sustainably manage Singapore's water resources. [2]

Advantage:

- Takes up less land as it only requires pipes to transport water which can be built underground
- Does not cost much to treat this imported raw water

Disadvantage:

- Not a long-term solution as these agreements expire.
- In times of conflict/drought this source might not be available/less water might be imported

Award 1m for each point. Accept any plausible answers given.

Section B [18 marks]

2	(a)	Study Figure 4, which shows the distribution of tropical rainforests around the world.

Map of Distribution of Tropical Rainforests Around the World

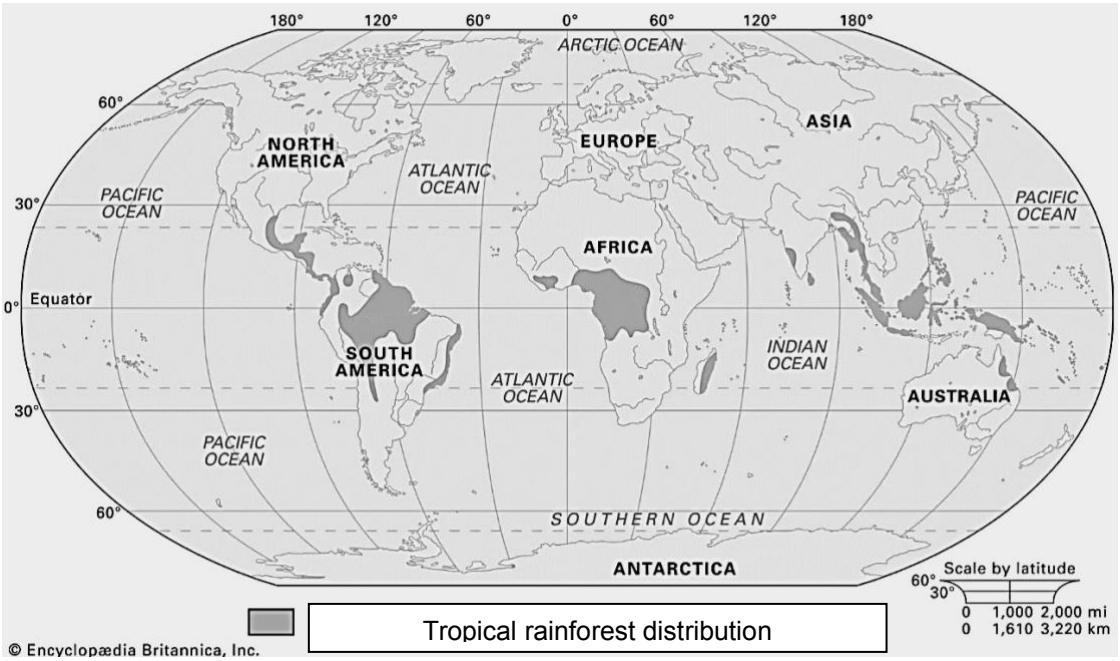

Figure 4

	(i)	Using Figure 4, describe the distribution of tropical rainforests around the world. Give an example of a tropical rainforest found on the map in Figure 4.

- Tropical rainforests are found in between the Tropic of Cancer and Tropic of Capricorn/ 23.5^{o}N and 23.5^{o}S of the Equator.
- One example is the Amazon rainforest/Southeast Asian Rainforest/ Congo Rainforest.

Award 1m for each point.

	(ii)	Describe the conditions that allow for tropical rainforests to grow in the identified area in (i). Include values in your answer.

- High mean annual temperatures of 25^{o}C (Accept any reason temperatures given)
- High total annual rainfall of 2000mm – 4500mm (Accept any reasonable rainfall amount between this range given eg 2500mm-4000mm/around 3000mm)

Award 1m for each point. Candidates must provide units to be awarded the marks.

	(b)	Explain how the leaves and the roots of mangrove trees help them to adapt to a saline environment. [4]

Leaves:

- Salt-excreting leaves help to remove (excess) salt
- from saline water/seawater/ from absorbed saltwater

Roots

- Aerial roots take in oxygen directly from the air (during low tide)
- Because soil is waterlooged/oxygen-deficient/poor in oxygen

Award 1m for each point.

	(c)	Figure 5 shows the rate of Amazon deforestation from 2004 to 2021.

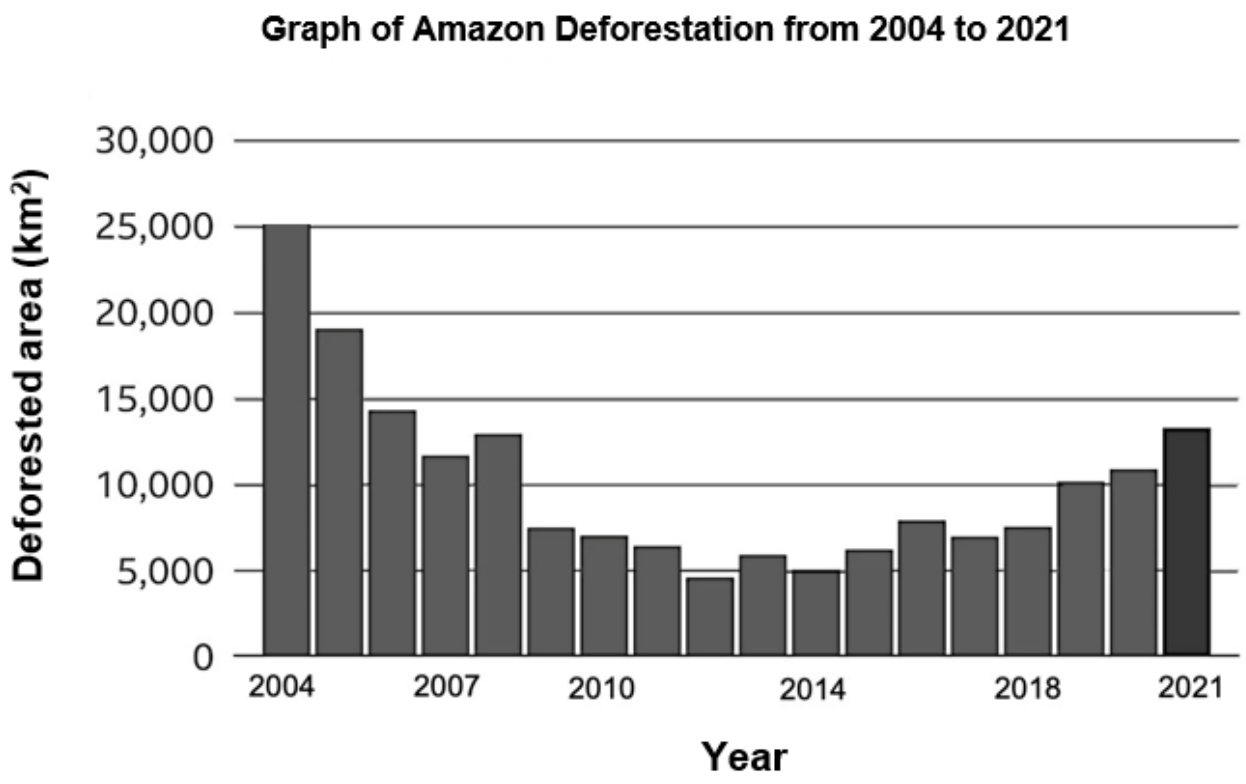

Figure 5

		Using Figure 5, describe the change in Amazon deforestation rate from 2004 to 2014. [2]

- Amazon deforestation rate <u>decreased</u> from 2004 to 2014.
- The Amazon deforestation rate decreased from <u>25 000 square kilometres/km^2 in 2004</u> to <u>5 000km^2 in 2014</u>.

Award 1m for identifying the trend and 1m for supporting evidence.

	(d)	Explain how deforestation can affect the earth's global temperatures. [3]

- When large areas of forests are being cleared,
- This can lead to less carbon dioxide being absorbed, leading to more carbon dioxide in the atmosphere
- This traps more heat, leading to global warming/an increase in earth's temperature.

Award 1m for each point.

	(e)	Figure 6 shows a photograph of people helping to sustainably manage tropical rainforests.

Figure 6

	(i)	With reference to Figure 6, describe and explain one strategy that helps to sustainably manage tropical rainforest resources. [3]

- One strategy used is reforestation, which refers to recovering a deforested area through the planting of plant species that are native to the area, as well as new, fast-growing trees.
- This reintroduces some of the plant and animal species in a deforested area
- Therefore, there will be greater supply of resources for future generations to use, leading to the sustainable management of tropical rainforest resources.

Award 1m for each point.

	(ii)	With reference to Figure 6, explain two advantages of using the identified strategy to sustainably manage tropical rainforest resources. [2]

- Grows in a shorter period of time as selected planted trees are able to grow quickly and easily
- Reduces soil erosion as trees reintroduced helps to provide protective covering over soil
- Helps fight against climate change as more trees are now available to take in carbon dioxide to reduce

Award 1m for an explained advantage of reforestation. Accept any plausible answers given.

END OF PAPER

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