



**BEATTY SECONDARY SCHOOL  
END OF YEAR EXAMINATION 2022  
SECONDARY ONE EXPRESS**

CANDIDATE  
NAME

CLASS

REGISTER  
NUMBER

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**GEOGRAPHY**

**5 October 2022  
1 hour 15 minutes**

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**READ THESE INSTRUCTIONS FIRST**

Write your name, class and register number on the cover page.  
Write in dark blue or black pen.  
You may use an HB pencil for any diagrams or graphs.  
Do not use staples, paper clips, glue or correction fluid.

**Section A**

You must answer Question 1.

**Section B**

You must answer Question 2.

Candidates should support their answers with the use of relevant examples.  
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

The number of marks is given in the brackets [ ] at the end of each question or part question.

For Examiner's Use	
Section A	/ 18
Section B	/ 18
Total	/ 36

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This document consists of **11** printed pages and **1** blank page.

**[Turn over**

## Section A

1 Study Fig. 1, which shows a topographic map.

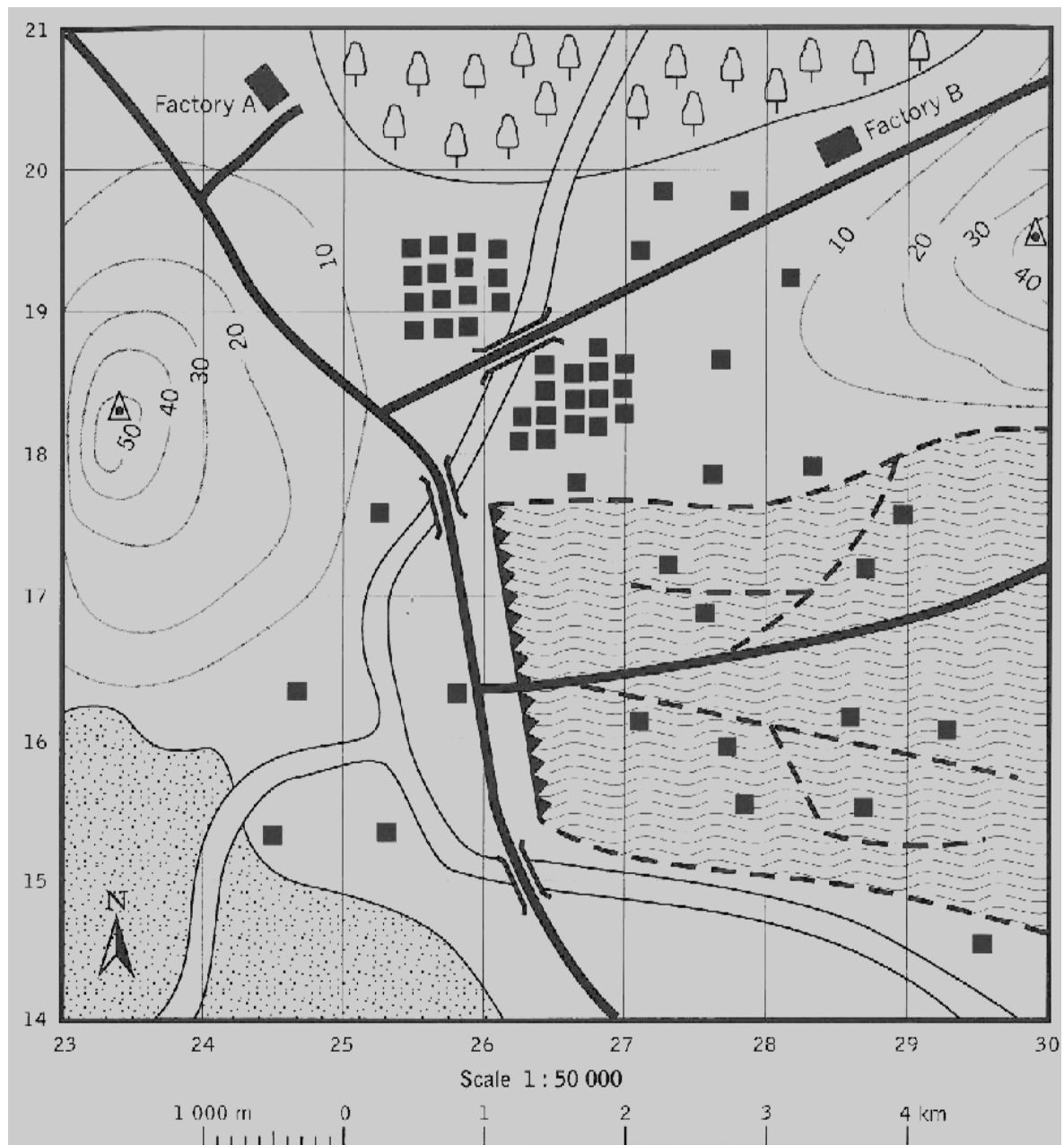


Fig. 1

(a) State the six-figure grid reference of Factory B.  
..... [1]

(b) State the contour interval of the map.  
..... [1]

(c) Describe **one** possible source of water pollution in the river.  
.....  
..... [1]

	<b>(d)</b>	Explain why flash floods occur in cities.
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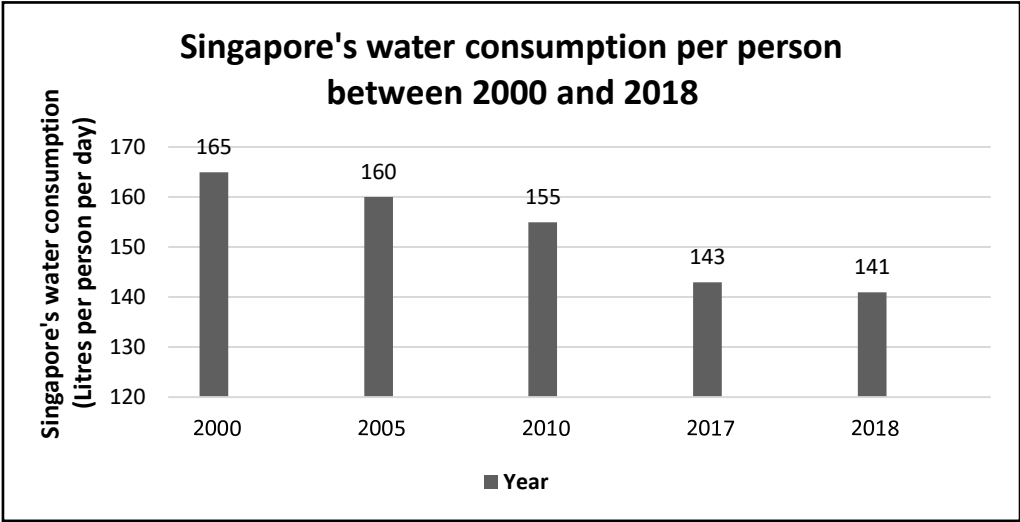
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..... [2]

- (e)** Study Fig. 2, which shows a graph on Singapore’s water consumption per person between 2000 and 2018.



**Fig. 2**

- (i)** With reference to Fig. 2, describe the changes in Singapore’s daily water consumption per person from 2000 to 2018.

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..... [3]

(ii) Describe **three** ways people use water.

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..... [3]

(f) Study Fig. 3, which shows a photograph of a heavily polluted Citarum River in Indonesia.

**A heavily polluted Citarum River in Indonesia**



**Fig. 3**

With reference to Fig. 3, explain how human actions led to water pollution and the possible impacts on people.

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(g) ..... [3]  
Explain how implementing laws can improve water quality and describe an  
advantage and disadvantage.

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..... [4]

## Section B

2	Study Fig. 4, which shows a map of mangroves in Singapore.
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### Mangroves in Singapore

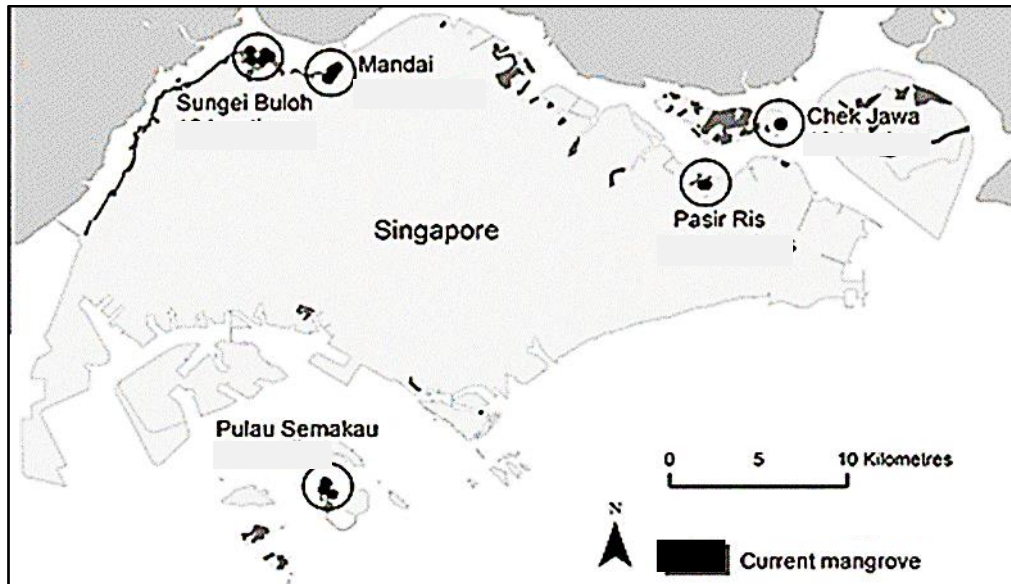


Fig. 4

- (a) (i) Describe the distribution of mangroves in Singapore as shown in Fig. 4.

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..... [3]

- (ii) Describe the conditions for the growth of mangroves.

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..... [2]

(b) Describe **three** environmental functions of tropical forests.

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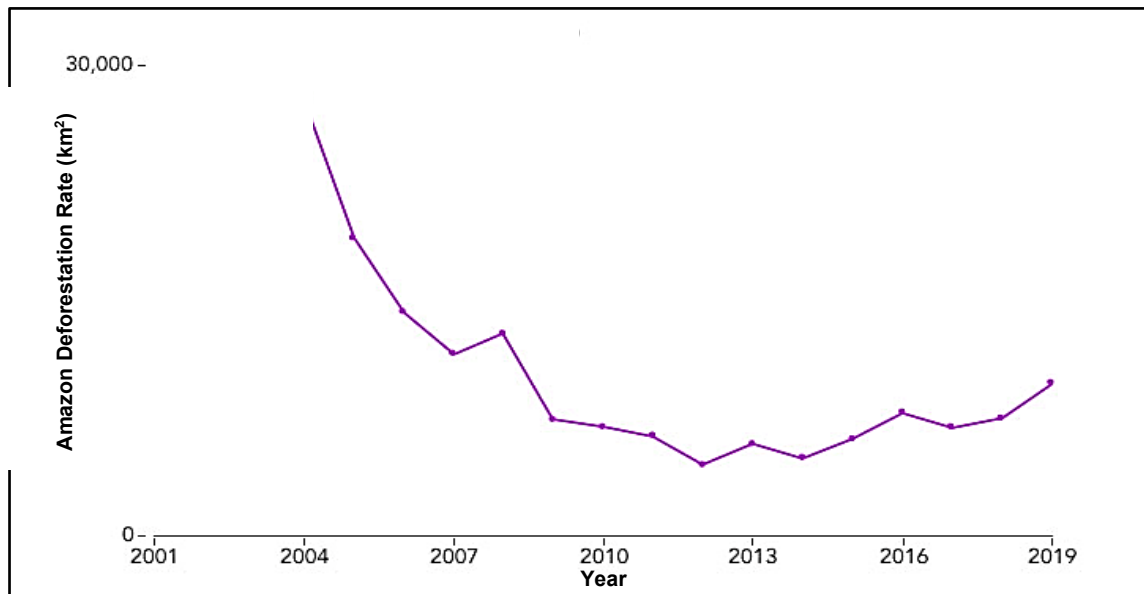
.....

..... [3]



- (c) Study Fig. 5, which shows the rate of deforestation in the Amazon Rainforest between 2001 and 2019.

**Rate of deforestation in the Amazon Rainforest between 2001 and 2019**



**Fig. 5**

With reference to Fig. 5, describe the rate of deforestation in the Amazon Rainforest between 2001 and 2019.

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..... [3]

- (d) Study Fig. 6, which shows an infographic on the human uses of tropical forests.

### Human uses of tropical forests

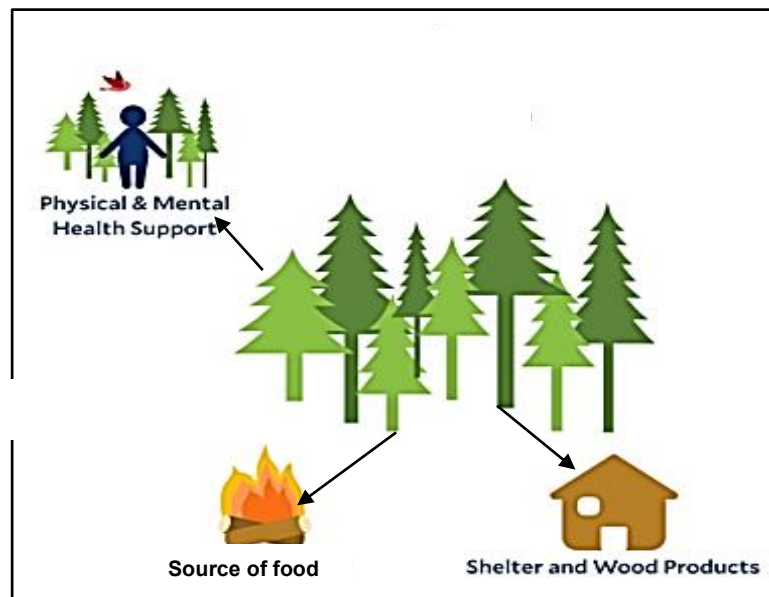


Fig. 6

With reference to Fig. 6 and your own knowledge, describe the human uses of tropical forests.

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..... [3]

- (e) With the use of an example, evaluate public education as a strategy to sustainably manage tropical rainforests.

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..... [4]

**END OF PAPER**

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*Copyright Acknowledgements:*

Question 2	Fig. 2	<a href="https://www.pub.gov.sg/watersupply/singaporewaterstory">https://www.pub.gov.sg/watersupply/singaporewaterstory</a>
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Question 3	Fig. 4	<a href="https://www.researchgate.net/figure/Distribution-of-mangrove-forests-and-biomass-sampling-locations-in-Singapore_fig1_283753187">https://www.researchgate.net/figure/Distribution-of-mangrove-forests-and-biomass-sampling-locations-in-Singapore_fig1_283753187</a>
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Question 3	Fig. 6	<a href="https://sustainability.yale.edu/explainers/yale-experts-explain-healthy-forests">https://sustainability.yale.edu/explainers/yale-experts-explain-healthy-forests</a>

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## Table of specification

Section	Structured Questions with no more than 6 parts each	AO1+AO2	A01+A03
A	Q1a-c		3
	Q2a	2	
	Q2b(i)		3
	Q2b(ii)	3	
	Q2c		3
	Q2d	4	
	Total	9	9
B	3a(i)		3
	3a(ii)	2	
	3b	3	
	3c		3
	3d		3
	3e	4	
	Total	9	9
	Grand total		36



**BEATTY SECONDARY SCHOOL  
END OF YEAR EXAMINATION 2022  
SECONDARY ONE EXPRESS  
ANSWER SCHEME**

CANDIDATE  
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**GEOGRAPHY**

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For Examiner's Use	
Section A	/ 18
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Total	/ 36

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This document consists of 10 printed pages, including the cover page.

**[Turn over**

## Section A

1 Study Fig. 1, which shows a topographic map.

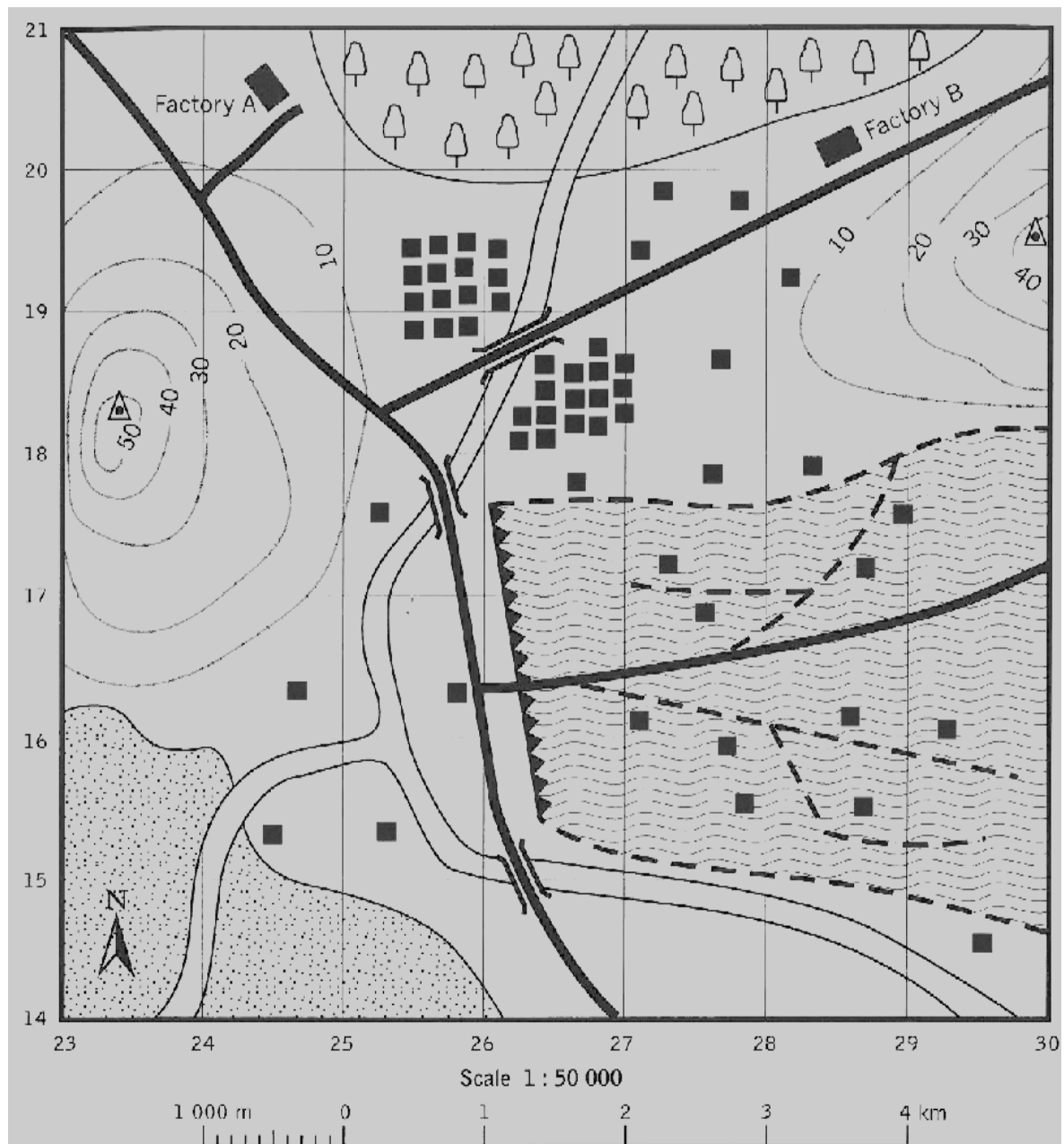


Fig. 1

(a) State the six-figure grid reference of Factory B. [1]

285202/285201/286202/286201

(b) State the contour interval of the map. [1]

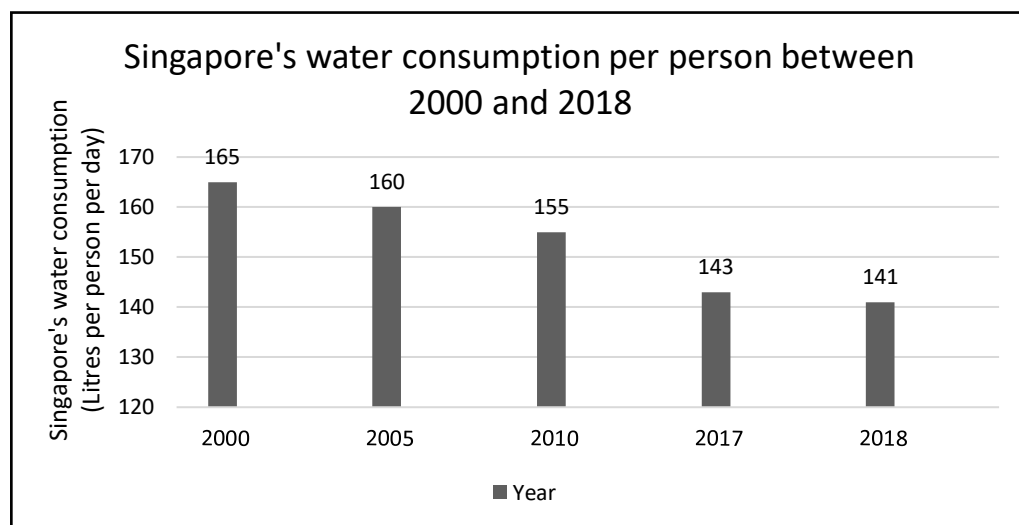
10m

(c) Describe **one** possible source of water pollution in the river. [1]

The houses dumping their waste into the river/waste from the rubber plantation being discarded into the river.



- (d) Explain why flash floods occur in cities. [2]
- Flash floods occur when there is a heavy rainfall over a short period of time.
  - On the road where there is no soil or vegetation to allow rainwater to infiltrate and therefore the rainwater become surface runoff which results in flood occurrence.
- (e) Study Fig. 2, which shows a graph on Singapore's water consumption per person between 2000 and 2018.



**Fig. 2**

- (i) With reference to Fig. 3, describe the changes in Singapore's daily water consumption per person from 2000 to 2018. [3]
- Singapore's daily water consumption per person decreased from 165 litres in 2000 to 141 litres in 2018.
  - There was a gradual decrease in Singapore's daily water consumption per person from 2000 to 2005 from 165 litres to 160 litres.
  - There was a steep decrease in Singapore's daily water consumption per person from 2010 to 2017 from 155 litres to 143 litres.

Accept other possible answers.

(ii) Describe **three** ways people use water. [3]

- Domestic- Water can be used for household activities such as showering, washing of dishes and flushing.
- Recreation- Water is also used by people to carry out recreational activities such as canoeing and sailing.
- Industry- Water can be used in factories to cool equipment and power plants because they generate a lot of heat when they operate.
- Agriculture- Water is used to grow crops and rear animals for human consumption.

Accept other answers.

(f) Study Fig. 3, which shows a photograph of a heavily polluted Citarum River in Indonesia.

**A heavily polluted Citarum River in Indonesia**



**Fig. 3**

With reference to Fig. 3, explain how human actions led to water pollution and the possible impacts on people. [3]

- The residents who live proximity to the river would throw their rubbish conveniently into the river contributing to water pollution.
- When such harmful substances enter the river, it causes its water quality to fall and people will have insufficient water to use for daily activities such as drinking and washing of clothes.
- When people consume/use the polluted water, they can fall ill or get skin conditions such as rashes.

Accept other possible answers.

(g) Explain how implementing laws can improve water quality and describe its advantage and disadvantage. [4]

- Countries implement laws to maintain or improve water quality so that the water can be clean.
- Industries are not allowed to release wastewater into water bodies without permission and would be fined.
- The laws also state what the wastewater released by industries shouldn't contain. E.g. petroleum and radioactive material.
- The law would act as a deterrence to industries that are considering disposing their waste illegally in water bodies. (+)
- However, if there is a lack of monitoring of water bodies and enforcement of laws, this strategy will not be successful. (-)

## Section B

2 Study Fig. 4, which shows a map of mangroves in Singapore.

### Mangroves in Singapore

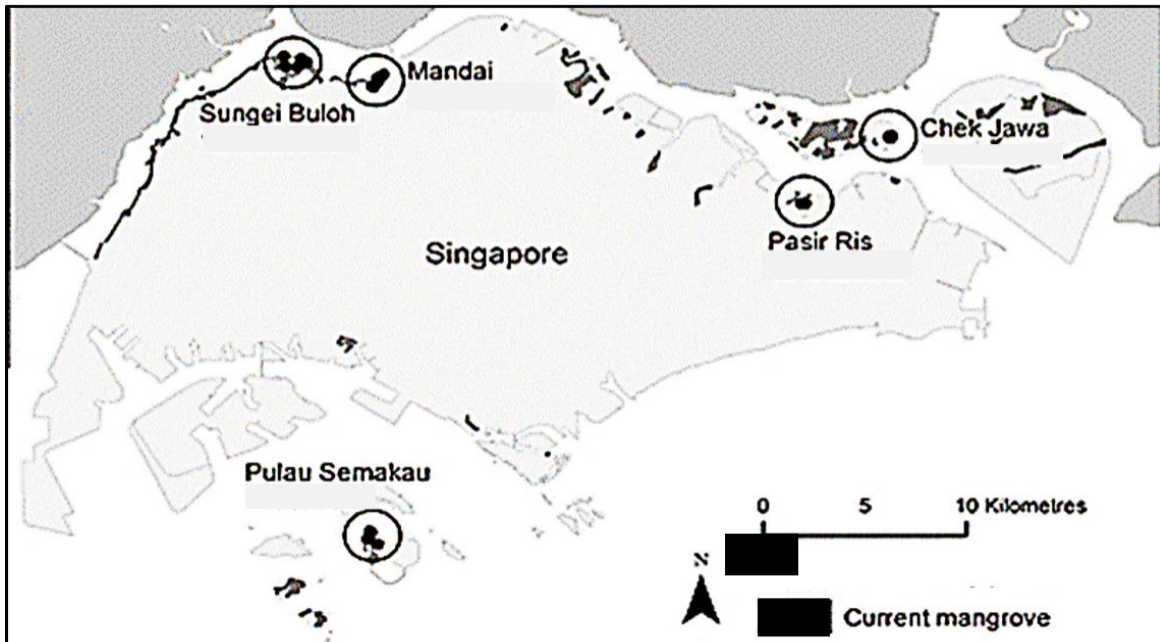


Fig. 4

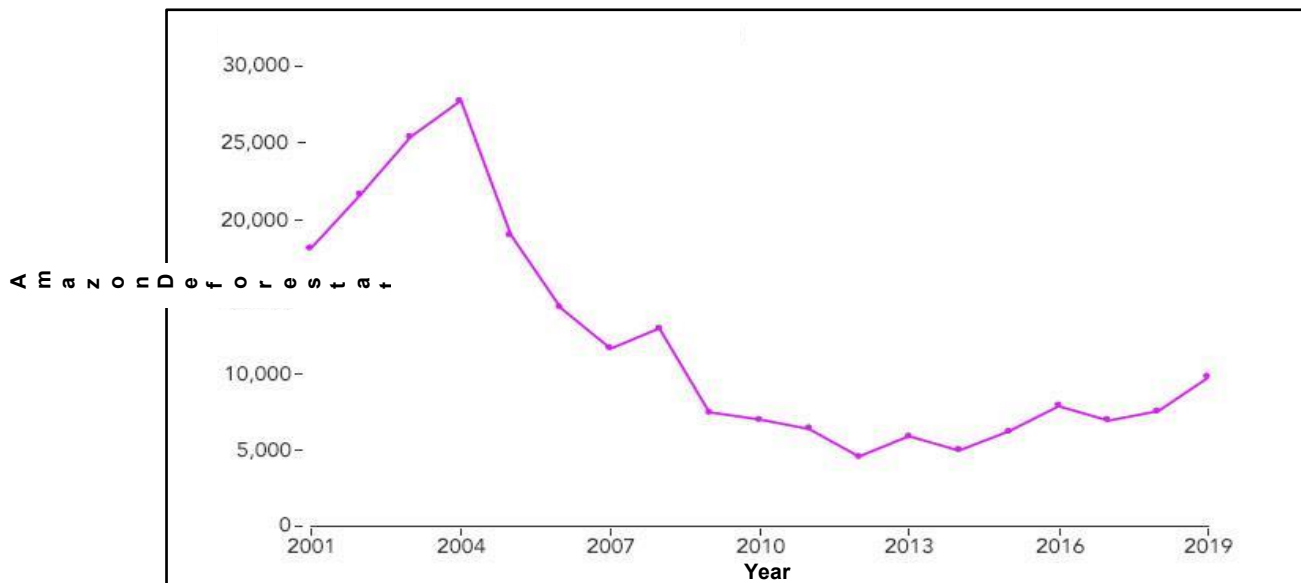
- (a) (i) Describe the distribution of mangroves in Singapore as shown in Fig. 4. [3]
- Mangroves grow along coastline near the sea.
  - Mangroves grow on offshore islands such as Chek Jawa or at Pulau Semakau.
  - Northwest Singapore has a significant area with mangroves such as Sungei Buloh and Mandai.
- (ii) Describe the conditions for the growth of mangroves. [2]
- High salinity- High concentration of salt in water/soil.
  - High air and water temperatures of at least 20°C.
  - Sheltered environments along or very close to the coast so that there would be calm water conditions.

(b) Describe **three** environmental functions of tropical forests. [3]

- Trees release oxygen through photosynthesis.
- Rainforest and mangrove plants contribute to carbon storage when they absorb carbon dioxide from atmosphere.
- Tropical forests are suitable habitats for wide variety of animals due to their warm climate, abundance of water and food all year round.
- Presence of tree cover protects the ground surface from the pelting raindrops that contribute to less soil erosion OR with presence of trees, there will be more infiltration and percolation of rainwater into the soil and this would result in low surface runoff and thus less soil erosion.
- The dense root systems of mangrove plants help to trap and stabilise loose sediments on the coast and as such sediments are less likely to be washed away by waves, currents, and tides OR the roots, trunks and branches of mangrove plants cause friction with waves hitting the coast and this results in the waves losing a significant amount of energy, thus reducing coastal erosion.

(c) Study Fig. 5, which shows the rate of deforestation in the Amazon Rainforest between 2001 and 2019.

**Rate of deforestation in the Amazon Rainforest between 2001 and 2019**



**Fig. 5**

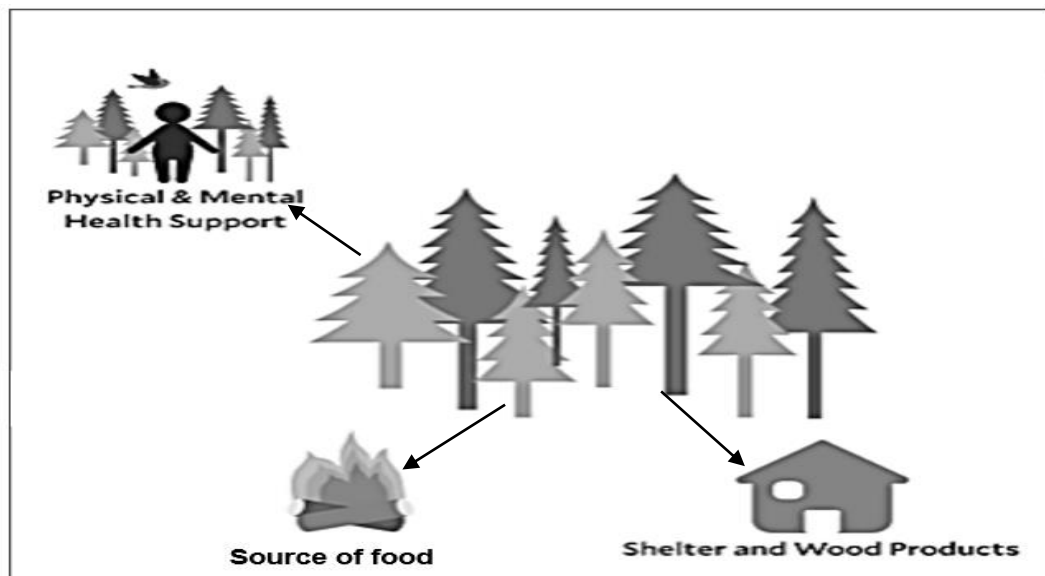
With reference to Fig. 5, describe the rate of deforestation in the Amazon Rainforest between 2001 and 2019. [3]

- There is an overall decrease in the trend in the rate of deforestation in the Amazon Rainforest between 2001 and 2019 from 18000 km<sup>2</sup> to 7500 km<sup>2</sup>.
- There was an increase in the rate of deforestation in the Amazon Rainforest between 2001 and 2004 from 18000 km<sup>2</sup> to 27500 km<sup>2</sup>.
- There was a rapid decline in the rate of deforestation in the Amazon Rainforest between 2004 and 2007 from 27500 km<sup>2</sup> to 11000 km<sup>2</sup>.

Accept other possible answers.

(d) Study Fig. 6, which an infographic on the human uses of tropical forests.

### Human uses of tropical forests



**Fig. 6**

With reference to Fig. 6 and your own knowledge, describe the human uses of tropical forests.

[3]

- A place for habitat- Several millions of people around the world continue to live in tropical forests and depend on the environment to meet their basic needs.
- A place for recreation- Tropical rainforests are recreational sites for people to participate in activities such as trekking, camping and birdwatching.
- A source of food- Many common types of food such as fruits, vegetables and nuts are grown in tropical rainforests.
- A source of raw material- Tropical forests are valuable sources of wood for building and carpentry.

Accept other possible answers.

(e) With the use of an example, evaluate public education as a strategy to sustainably manage tropical rainforests. [4]

- Public education raises awareness of the importance and value of tropical forests.
- It educates the public on the threats that tropical forests face and how the public can play a part in helping to reduce deforestation
- The National Park Board in Singapore regularly organises exhibitions, festivals and talks which people can take part in to learn more about tropical rainforests.
- The public who has been educated about tropical rainforest can raise awareness to family and friends by encouraging them to protect the tropical rainforest by limiting their use of paper and wood products. (+)
- Turning environmental awareness into personal behaviour and action is difficult. The public may adopt a mind-set that their conservation effort is too insignificant in reducing deforestation. (-)
- Moreover, raising awareness is difficult in LDCs with low literacy. (-)
- The public may not fully comprehend the importance of conserving tropical forests. (-)

Accept other possible answers.

**END OF PAPER**

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