



BEDOK VIEW SECONDARY SCHOOL END-OF-YEAR EXAMINATION 2022

CANDIDATE
NAME

REGISTER
NUMBER

CLASS

GEOGRAPHY Secondary One Express

30 September 2022
1 hour 15 minutes

READ THESE INSTRUCTIONS FIRST

Write in dark blue or black pen on both sides of the paper.
You may use a HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.

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

Section A

Answer **all** questions.

Section B

Answer **all** questions.

Section C

Answer **all** questions.

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

For Examiner's use		
Section A		/ 10
Section B		/ 15
Section C		/ 15
Total		/ 40
% / Grade		/

Parent's / Guardian's Signature:

This document consists of 12 printed pages.

[Turn over

Section A

Answer **all** questions.

- 1** A group of students conducted a geographical investigation on the water quality at the school pond and Bedok Reservoir Park. They investigated the guiding question 'How do human activities affect the quality of water at the school pond and Bedok Reservoir Park?' They collected primary and secondary data to help them in their investigation.

- (a)** State one example each of primary and secondary data that could be collected by the students.

Primary data:

Secondary data: [2]

- (b)** Explain **three** ways students can ensure accuracy when testing the water quality at both locations.

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..... [3]

- (c) Study Fig. 1, which shows a water test kit, which the students used for their water quality testing.

Water Test Kit

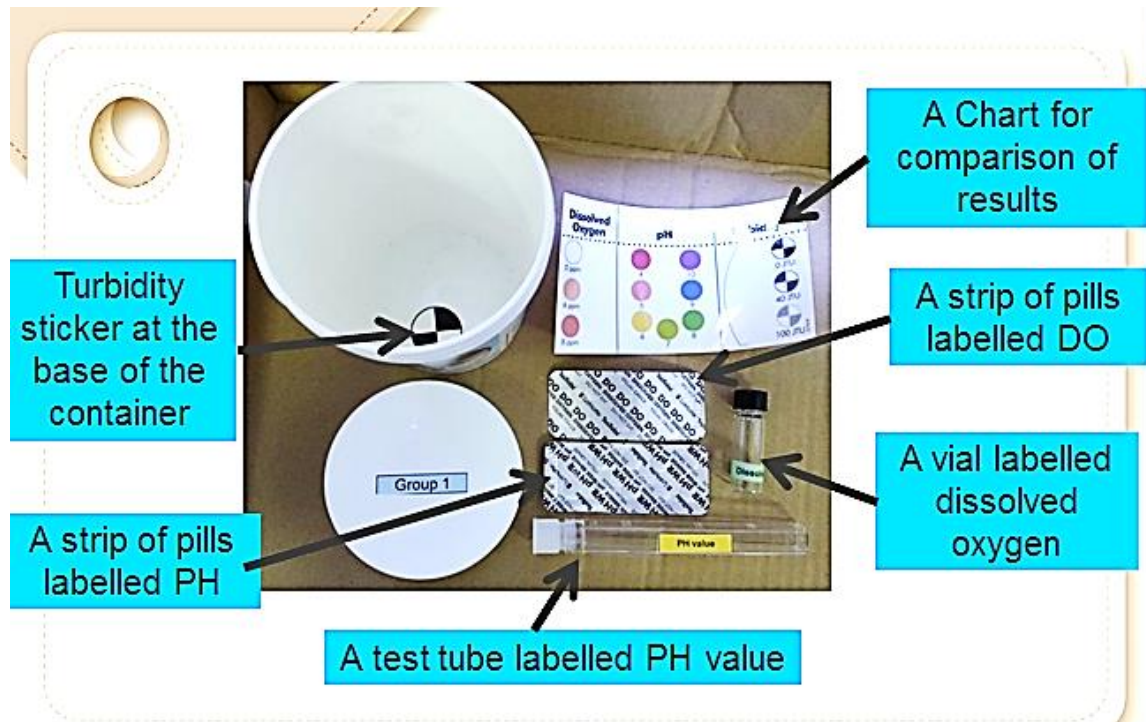


Fig. 1

Using Fig. 1, describe the steps students should take to test the amount of dissolved oxygen in the water samples, using the water test kit.

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..... [3]

- (d) Study Table 1, which shows the results of water samples from the school pond and Bedok Reservoir Park.

Table 1

Results of water samples from the school pond and Bedok Reservoir Park

Water Quality Indicator	Results	
	School Pond	Bedok Reservoir Park
Turbidity	0 JTU	40 JTU
Dissolved oxygen	4 ppm	4 ppm
pH	7	8

With reference to the results in Table 1, identify whether the school pond or Bedok Reservoir Park has better water quality and explain why.

Identify:

Explain:

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[Turn over

(b) Study Fig. 3, which shows a type of flood that occurred.

A type of flood

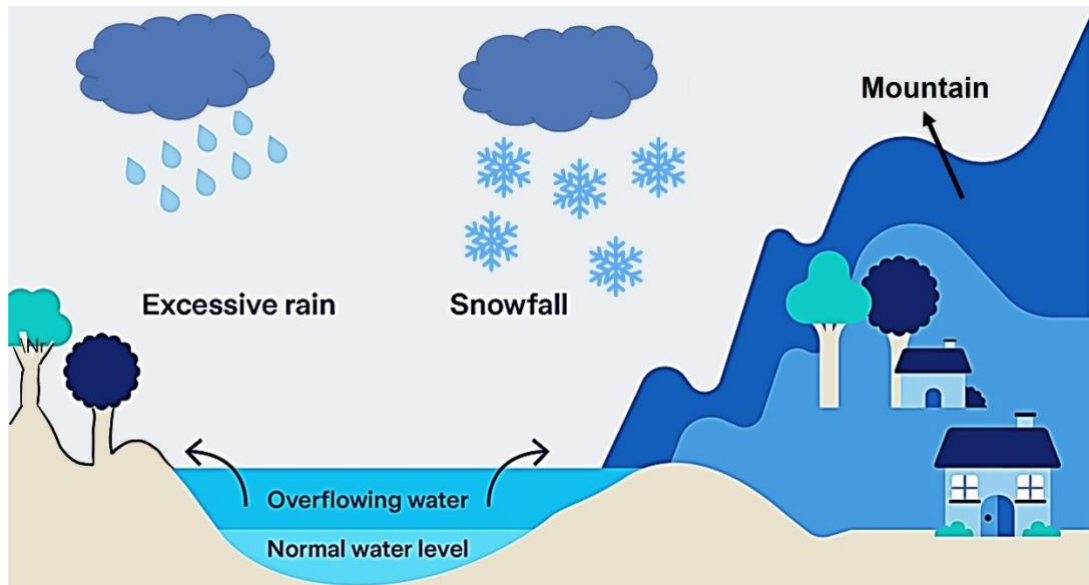


Fig. 3

Identify the type of flood shown in Fig. 3 and explain how it occurs.

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(c) Explain how people use water for domestic, recreational and agricultural purposes.

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- (d) Describe how water technology is used in managing water sustainability in Singapore and state one advantage of this strategy.

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Section C

Answer **all** questions.

- 3 (a)** While tropical rainforests have waxy and drip-tip leaves that help them cope with high temperatures and rainfall, mangroves have salt-secreting leaves that help them survive in the saline water of the coastal environment.

Compare the adaptations of the leaves of tropical rainforests and mangroves.

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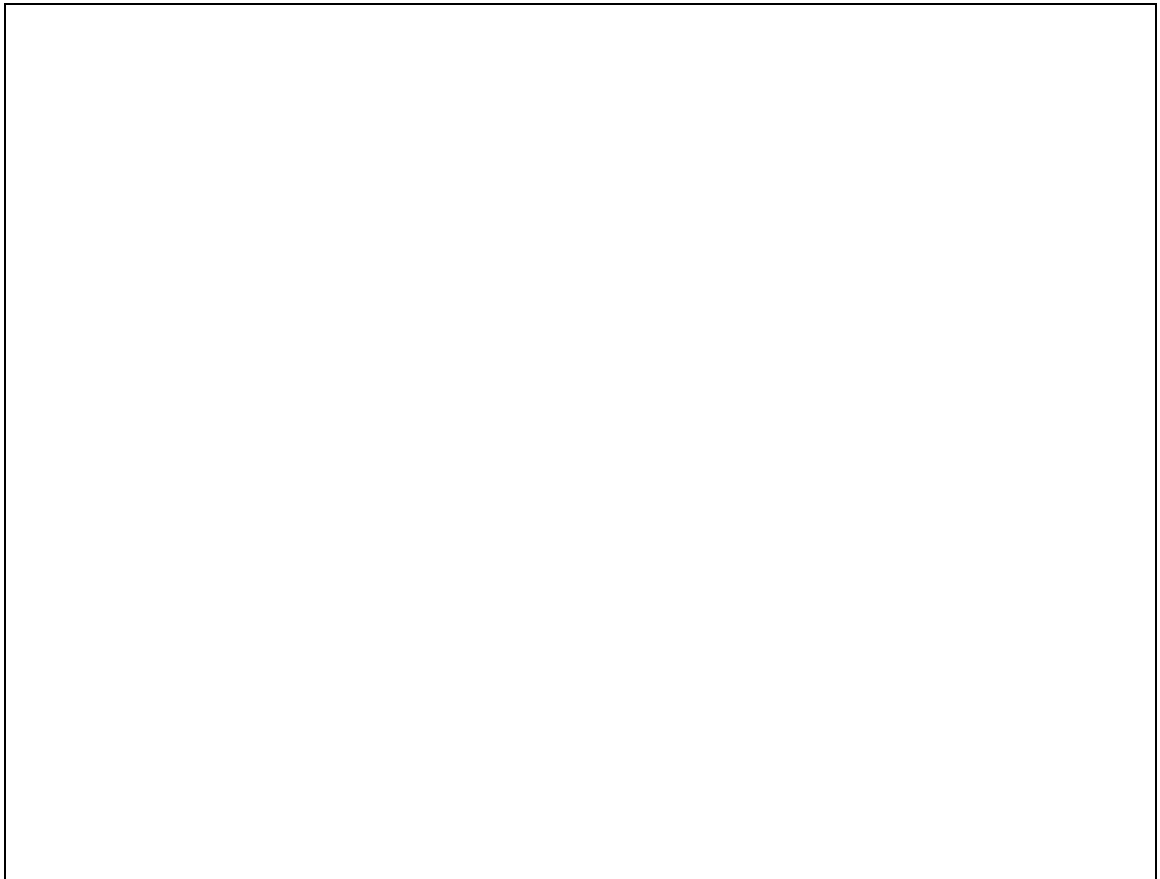
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..... [2]

- (b)** Mangrove plants have aerial roots that help them adapt to the coastal environment.

Draw an annotated sketch to explain **two** features of aerial roots that help mangrove plants adapt to the environment.



[2]

(c) Study Fig. 4, which shows two coastal environments with and without mangroves.

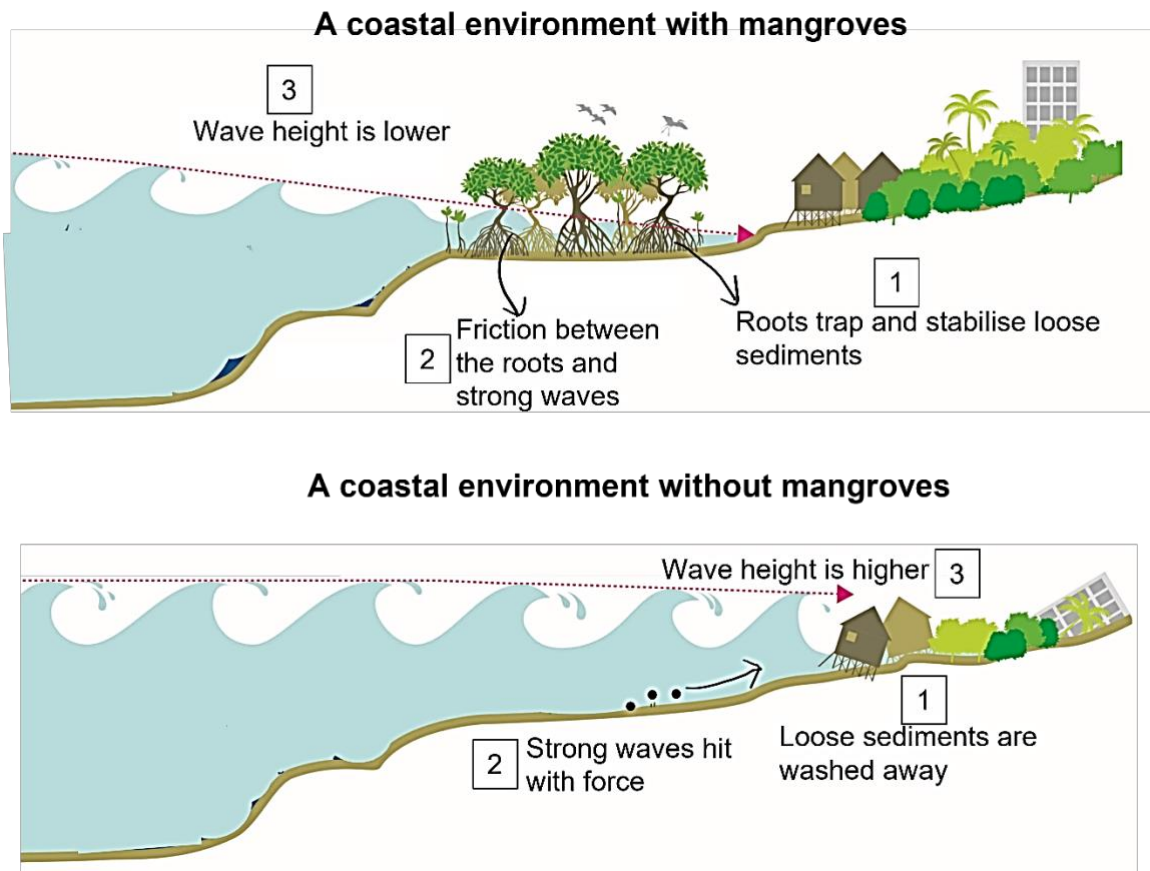


Fig. 4

With reference to Fig. 4, explain the effect of mangroves on coastal environments.

[4]

- (d) Study Figs. 5A and 5B, which show how tropical forests are used by the indigenous people.

How tropical forests are used by the indigenous people



Fig. 5A



Fig. 5B

Using Figs. 5A, 5B and your own studies, describe how tropical forests are used by the indigenous people.

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- (e) Describe the strategy of setting aside protected areas to manage tropical forests sustainably and state one advantage and one disadvantage of the strategy in less developed countries.

Describe:

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One advantage:

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One disadvantage:

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..... [4]

[illegible]

Question 1c	Figure 1	© URL source: http://geogshare.blogspot.com/2015/03/geographical-investigation-of-water.html
Question 2a	Figure 2	© URL source: https://www.pinterest.com/pin/340162578078707097/
Question 2b	Figure 3	© URL source: https://www.zurich.com/en/knowledge/topics/flood-and-water-damage/three-common-types-of-flood
Question 3b	Figure 4	© URL source: https://www.mangrovealliance.org/news/the-global-value-of-mangroves-for-risk-reduction/
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Question 3d	Figure 5b	© URL source: https://www.independent.co.uk/news/world/americas/brazil-coronavirus-amazon-tribe-tree-bark-plants-honey-cure-bolsonaro-a9524551.html



BEDOK VIEW SECONDARY SCHOOL END-OF-YEAR EXAMINATION 2022

GEOGRAPHY
Secondary One Express

30 September 2022
1 hour 15 minutes

MARK SCHEME

*This document consists of **10** printed pages and **1** blank page.*

Section A

Answer **all** questions.

- 1** A group of students conducted a geographical investigation on the water quality at the school pond and Bedok Reservoir Park. They investigated the guiding question 'How do human activities affect the quality of water at the school pond and Bedok Reservoir Park?' They collected primary and secondary data to help them in their investigation.

- (a)** State one example each of primary and secondary data that could be collected by the students. [2]

Reserve 1m each for primary and secondary data.
Award 1m for any of the following points, max 2m.

Primary data

- Field sketch
- Photographs
- Surveys

Secondary data

- Maps
- Brochures
- Books
- Websites
- News articles
- Reports

- (b)** Explain **three** ways students can ensure accuracy when testing the water quality at both locations. [3]

Award 1m for each point.

- Students should do their readings under the sunlight instead of under the shade to ensure accurate comparison of colour of their sample with the turbidity/ pH/ dissolved oxygen chart.
- Students should wear gloves when handling the tablets to ensure that the water testing tablets are not contaminated.
- Students should ensure that other sources/substances do not contaminate the water sample collected.

- (c) Study Fig. 1, which shows a water test kit, which the students used for their water quality testing.

Water Test Kit

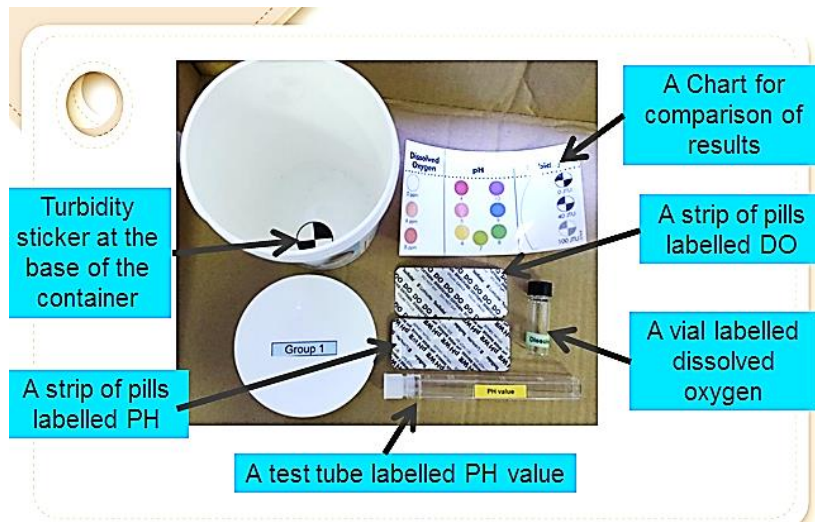


Fig. 1

Using Fig. 1, describe the steps students should take to test the amount of dissolved oxygen in the water samples, using the water test kit. [3]

Award 1m for each step.

- Submerge the small vial labelled dissolved oxygen into the water sample and ensure it is full.
- Drop two dissolved oxygen tablets into the vial. Screw the cap onto the vial and shake the vial until tablets totally dissolve.
- Compare the colour of the sample against the dissolved oxygen chart and record the results.

- (d) Study Table 1, which shows the results of water samples from the school pond and Bedok Reservoir Park.

Table 1

Results of water samples from the school pond and Bedok Reservoir Park

Water Quality Indicator	Results	
	School Pond	Bedok Reservoir Park
Turbidity	0 JTU	40 JTU
Dissolved oxygen	4 ppm	4 ppm
pH	7	8

With reference to the results in Table 1, identify whether the school pond or Bedok Reservoir Park has better water quality and explain why. [2]

Reserve 1m for identify and 1m for explain.

Award 1m for each point.

Award max 1m if no reference is made to values in Table 1.

Identify

- School Pond

Explain

- The water at the school pond has a lower turbidity of 0 JTU, while the water at Bedok Reservoir Park has a higher turbidity of 40 JTU. This shows that the school pond is clearer and not murky at all. There are no soil particles in the water that might affect its clarity, as compared to the water at Bedok Reservoir Park. OR
- The water at the school pond has a lower pH of 7, while the water at Bedok Reservoir Park has a higher pH of 8. The pH level at the school pond is neutral, so it is not too acidic and alkaline while the pH level of the water at Bedok Reservoir Park is slightly more alkaline.

Section B

Answer **all** questions.

- 2 (a) Study Fig. 2, which shows the processes in a hydrological cycle.

Hydrological Cycle

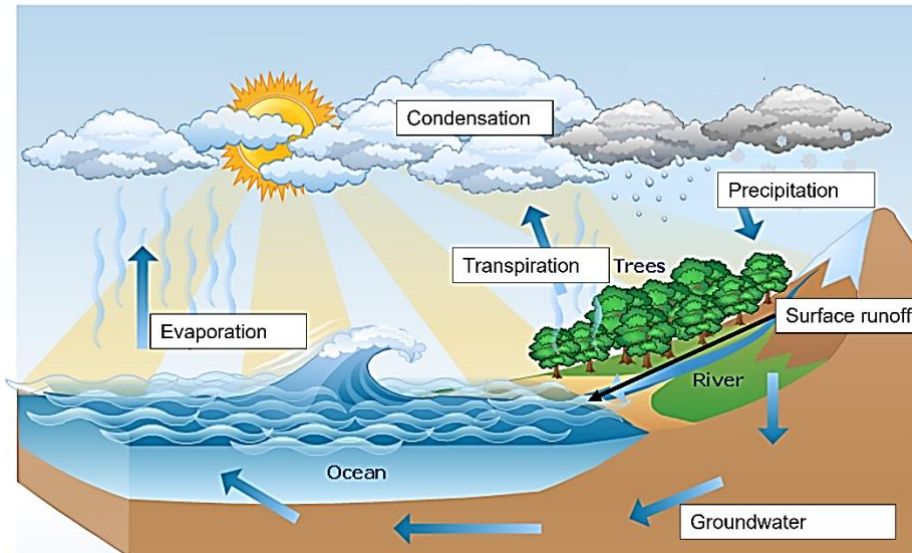


Fig. 2

Using Fig. 2, explain how the processes in the hydrological cycle help water to be naturally replenished.

[4]

Award 1m for each point.

Award max 2m if no reference is made to the processes in Fig. 2.

- The sun's heat causes evaporation where water changes into water vapour. Plants give out water vapour through their leaves through transpiration.
- Warm moist air cools as it rises. Water vapour changes into water droplets through condensation. Water droplets gather to form clouds.
- Water then falls as rain, or snow, known as precipitation, if the air is cold enough. Water flows from the highlands and over the ground surface into streams and rivers, as surface runoff. OR Water seeps into the ground to become groundwater which eventually returns to water bodies/oceans.
- This continuous movement of water from the earth's surface to the atmosphere and back again allows water to be naturally replenished.

(b) Study Fig. 3, which shows a type of flood that occurred.

A type of flood

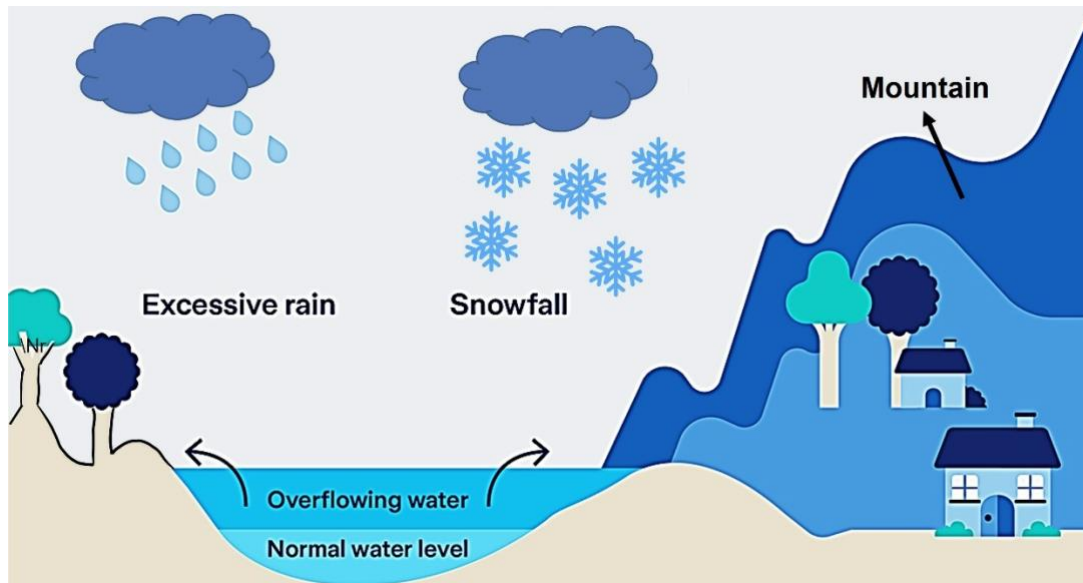


Fig. 3

Identify the type of flood shown in Fig. 3 and explain how it occurs.

[4]

Award 1m for each point.

Reserve 1m for identify and 3m for explain.

Award max 2m if no reference to Fig. 3 is made.

Identify

- River flood

Explain

- River floods are caused by excessive rain and meltwater produced when snow and ice start to melt in the spring season.
- The large amounts of rainwater and meltwater enter streams and tributaries, which then flow into rivers.
- The water level in the river rises above the normal water level and eventually overflows the banks, flooding the surrounding areas.

(c) Explain how people use water for domestic, recreational and agricultural purposes.

[3]

Award 1m for each point.

Reserve 1m each for domestic, recreational and agricultural.

- People use water at home for bathing and doing laundry/flushing the toilet.
- People use water to carry out recreational activities such as canoeing and sailing/sport fishing.
- People use water to grow crops and rear animals for human consumption.

- (d) Describe how water technology is used in managing water sustainability in Singapore and state one advantage of this strategy. [4]

Reserve 3m for describe and 1m for stating advantage.
Award 1m for each point.

Describe

- Singapore uses NEWater, which is the recycling of used water to produce clean drinkable water again.
- Singapore also turns seawater into drinking water through desalinisation.
- Salt content is reduced to a level that is acceptable for water use in industries and households.

State

- Using technology is more reliable as it not dependent on weather, which may be affected by climate change.

Section C

Answer **all** questions.

- 3 (a) While tropical rainforests have waxy and drip-tip leaves that help them cope with high temperatures and rainfall, mangroves have salt-secreting leaves that help them survive in the saline water of the coastal environment.

Compare the adaptations of the leaves of tropical rainforests and mangroves.

[2]

Award 1m for each point of comparison.

- Tropical rainforests have waxy leaves that help to retain and reduce the amount of water vapour lost through transpiration while mangroves have salt-secreting leaves that enable them to remove salt from the saline water that their roots have absorbed.
- Tropical rainforests have drip tips that allows rainwater to flow off easily, which prevents the growth of bacteria and fungi on them while some mangroves have leaves that deposit excess salt in older leaves which they eventually shed, preventing salt from building up within the plant.

- (b) Mangrove plants have aerial roots that help them adapt to the coastal environment.

Draw an annotated sketch to explain **two** features of aerial roots that help mangrove plants adapt to the environment.

[2]

Award 1m for each point of explanation.

Award a max of 1m if diagram is not annotated, but explanation is written at the bottom of the diagram.

Aerial roots grow partially above the soil surface, which enables them to take in oxygen directly from the air when they are exposed during low tide.



Aerial roots help to anchor the mangrove plants to the soft soil, thus preventing them from being uprooted and washed away by strong waves.

(c) Study Fig. 4, which shows two coastal environments with and without mangroves.

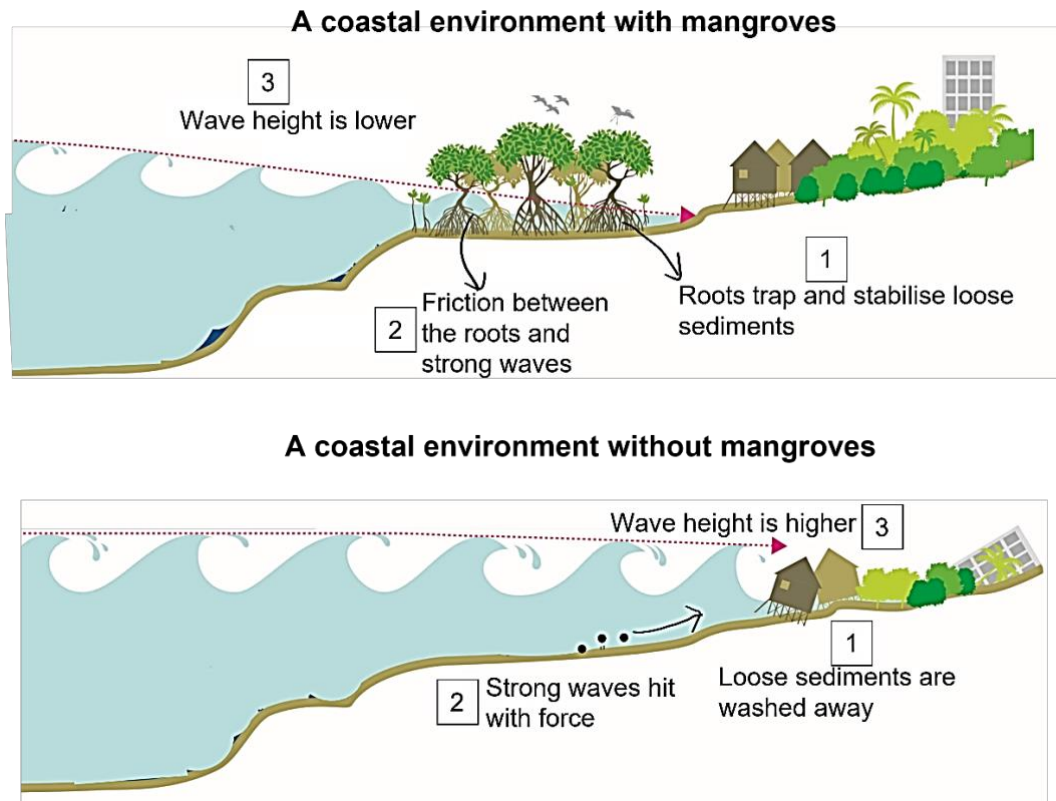


Fig. 4

With reference to Fig. 4, explain the effect of mangroves on coastal environments. [4]

Award 1m for each point.

Reserve 2m each for absence and presence of mangroves.

Award max 2m if no reference is made to Fig. 4.

- At 1, with the presence of mangroves, the roots help to trap and stabilise loose sediments on the coast. However, without the mangroves, loose sediments are washed away easily.
- At 2, with the presence of mangroves, the roots cause friction with the waves hitting the coast but without the mangroves, there is no friction thus strong waves hit with force.
- At 3, with the presence of mangroves, strong waves lose energy due to the friction at 2, causing the wave height to be lower. Without mangroves, due to the lack of friction, strong waves do not lose much energy thus causing the wave height to be higher.
- As such, with the presence of mangroves, the roots prevent coastal erosion from occurring but without the mangroves, coastal erosion occurs.

- (d) Study Figs. 5A and 5B, which show how tropical forests are used by the indigenous people.

How tropical forests are used by the indigenous people



Fig. 5A



Fig. 5B

Using Figs. 5A, 5B and your own studies, describe how tropical forests are used by the indigenous people.

[3]

Award 1m for each point.

Award max 2m if no reference to Figs. 5A and 5B is made.

- The indigenous people make use of the material found in the forest to build their houses/temporary huts, as shown in Fig. 5A.
- The indigenous people depend on the tropical rainforests as a place for shelter, as shown in Fig. 5A.
- The indigenous people obtain food from the trees in tropical forests for survival, as shown in Fig. 5B.

- (e) Describe the strategy of setting aside protected areas to manage tropical forests sustainably and state one advantage and one disadvantage of the strategy in less developed countries.

[4]

Reserve 2m for describe and 1m each for stating one advantage and disadvantage.
Award 1m for each point.

Describe

- Governments restrict the level of human activity in tropical forests to prevent plant and animal life from being negatively affected.
- Laws are also put in place to ensure that people do not damage these protected areas.

Advantage

- People in less developed countries who break these laws can be fined heavily or sent to jail. This will deter them from carrying out human activities that may negatively affect plant and animal life and thus protect the tropical forests.

Disadvantage

- Establishing protected areas depends on strong enforcement of these laws, which is a challenge to less developed countries due to lack of funding.

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