YISHUN SECONDARY SCHOOL
END-OF-YEAR EXAMINATION 2022
SECONDARY 1 EXPRESS

MARK SCHEME

Section A

Answer Question 1 from this section.

1 **(a)** Study Fig. 1, which shows a type of water store.

A type of water store

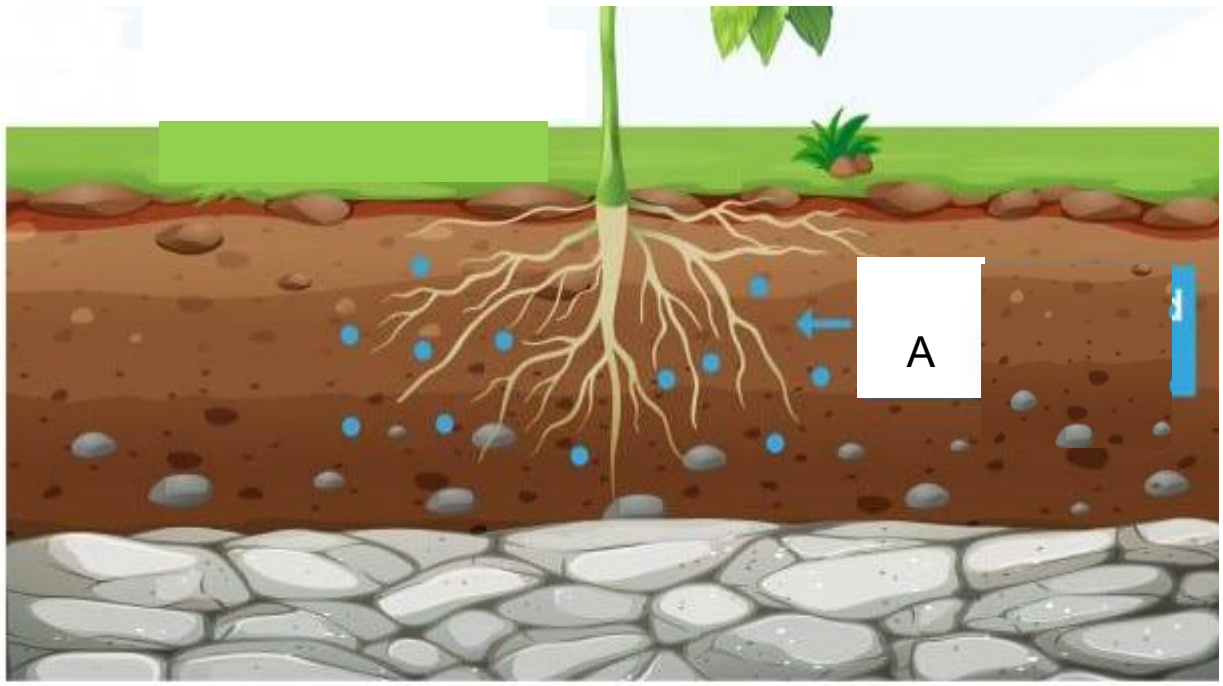

Fig. 1

With reference to Fig. 1, identify the water store labelled A and describe how this water store forms.

Identify:
- Soil moisture [1]

Describe:
- When it rains, water passes through small openings called pores [1]

- Water is then stored in the soil as soil moisture [1]

(b) Study Fig. 2, which shows water budget in a catchment area.

Water budget in a catchment area

Fig. 2

With reference to Fig. 2, state the net change in storage and explain why this occurs.

State:

- Water surplus [1]

Explain:

- Water input is higher than water output [1]
- Water input such as precipitation/rainfall is very high. Water output such as surface runoff/ evaporation/ transpiration is lower[1]
- This results in an increase in amount of water in the catchment [1]

(c) Describe how people use water for industrial purposes.
Any 3 points

- Used to cool equipment in factories and power plants [1]
- Used to turn turbines to generate electricity [1]
- Used as cleaning agent in wafer fabrication [1]
- Used as ingredient to produce food /drinks in industries [1]

(d) With reference to a named example, explain how human actions lead to water pollution.

- Rhine river in Western Europe [1]
- Toxic chemical spill in 1986 [1]
- Large amounts of pesticides were released into the river [1]

(e) Explain how Singapore uses technology to develop new ways to produce water.

- Singapore uses advanced membrane technology / reverse osmosis [1]
- This technology is used in desalination plants to convert seawater into drinking water [1]
- The technology helps to treat used water and recycle it into drinking/ potable water [1]

(f) Study Fig. 3, which shows a flood in Canada during Spring.

Flood in Canada during Spring

Fig. 3

With reference to Fig. 3, explain why this area in Canada is prone to this type of floods..

Any 2 points

- **Sustained heavy/excessive rainfall** causes sudden increase in water level in the rivers [1]
- **Meltwater from snow as ice** starts to melt during Spring and enters streams and tributaries. Water from tributaries flows into rivers , **water level rises rapidly and overflows its banks**, flooding the surroundings/ surrounding **low-lying areas** [1]

Section B

Answer Question 2 from this section

2 **(a)** Study Fig. 4, which shows the rate of deforestation in Brazil, South America from 1995 to 2015.

Deforestation in the Amazon rainforest in Brazil, South America

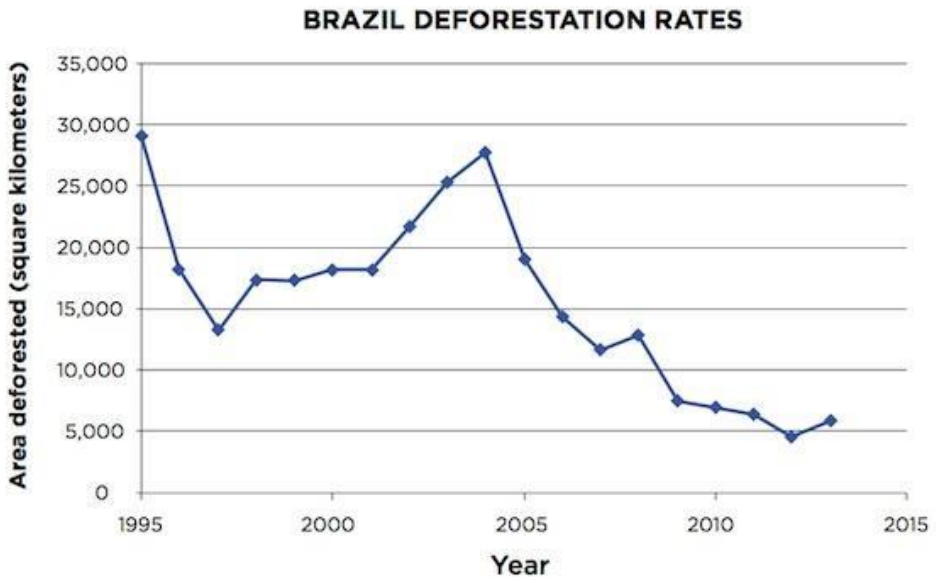

Fig. 4

With reference to Fig. 4, describe the trend in the deforestation rates in Brazil from the year 1995 to 2015.

Reserve 1m for overall trend

- Overall **decreasing trend** from 1995 to 2015 [1]

Any 3 points

- From 1995 to 2015, area deforested decreased from about 29000 km² to 6000 km² [1]
- From 1995 to 1997, area deforested decreased sharply from 29000 km² to 13000 km² [1]
- From 1997 to 2004, area deforested increased gradually from 13000 km² to 27000 km² [1]

- From 2004 to 2015, area deforested decreased sharply from 27000 km² to 6000 km² [1]

(b) Study Fig. 5, which shows the structure of the tropical rainforest.

Structure of tropical rainforest

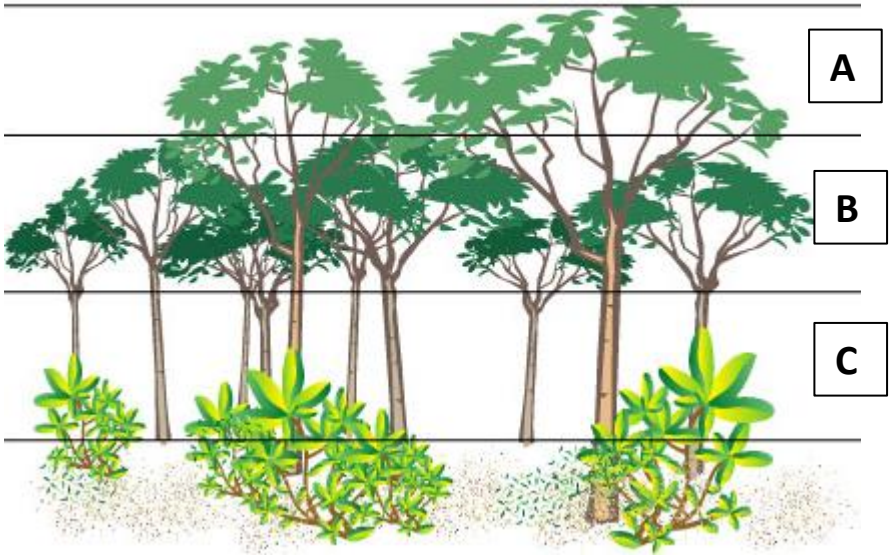

Fig. 5

With reference to Fig. 6, describe one characteristic of the three main layers of the tropical rainforest labelled **A**, **B** and **C.**

- Layer A: Trees in emergent layer have thin straight tall trunks / trees grow to a height of 30-50m to reach out for sunlight/ branches and leaves are found at the top [1]
- Layer B: Trees in canopy layer grow to 20-30m / thick and continuous / Crowns of trees interlock and prevents sunlight from reaching forest floor [1]
- Layer C: Vegetation in undergrowth layer consists of smaller plants that can adapt to little sunlight [1]

(c) Identify and explain conditions necessary for mangroves to grow.

Any 4 points

- They require average air and water temperatures of at least 20ºC as they cannot withstand freezing conditions [1]

- Require calm/ sheltered water conditions so that their seedlings are able to take root [1]
- Calm waters also ensures that strong waves to do wash away seedlings [1]
- Calm waters allows accumulation of sediments containing nutrients for plant growth [1]

(d) Explain the characteristics of the Avicennia species in the mangrove forests that help it to adapt to the mangrove environment.

- Aerial roots helps roots to take in air directly during low tides as soil may be water logged and poor in oxygen [1]
- Roots help to hold the mangrove plants to the soft soil and prevents it from being washed away [1]
- Salt secreting leaves helps to get rid of salt [1]

(e) Explain how the diversity of plant species differs in the tropical rainforests and mangrove forests.

- Not many plants can survive long periods of flooding [1]
- Not many plants can survive in waters of high salinity [1]

(f) Study Fig. 6, which shows a root system in the mangrove forest.

Root system in the mangrove forest

Fig. 6

With reference to Fig. 6, identify the root system and describe how it enables the plants to adapt to the soil conditions.

- Prop / Stilt roots [1]
- Provides a broad base to support the trees in the soft soil and prevents it from being uprooted [1]

YISHUN SECONDARY SCHOOL
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SECONDARY 1 EXPRESS

CANDIDATE NAME							
CLASS					INDEX NUMBER		

GEOGRAPHY

4 October 2022
1 hour 15 minutes

Candidates answer on the Question Paper
No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your name and index number on the Question Paper.
Write in dark blue or black pen.
You may use a HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.

Section A (18 marks)
You must answer Question 1.

Section B (18 marks)
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 brackets [ ] at the end of each question or part question.

For examiner's use
36

Section A

Answer Question 1 from this section.

1 **(a)** Study Fig. 1, which shows a type of fresh water store.

A type of fresh water store

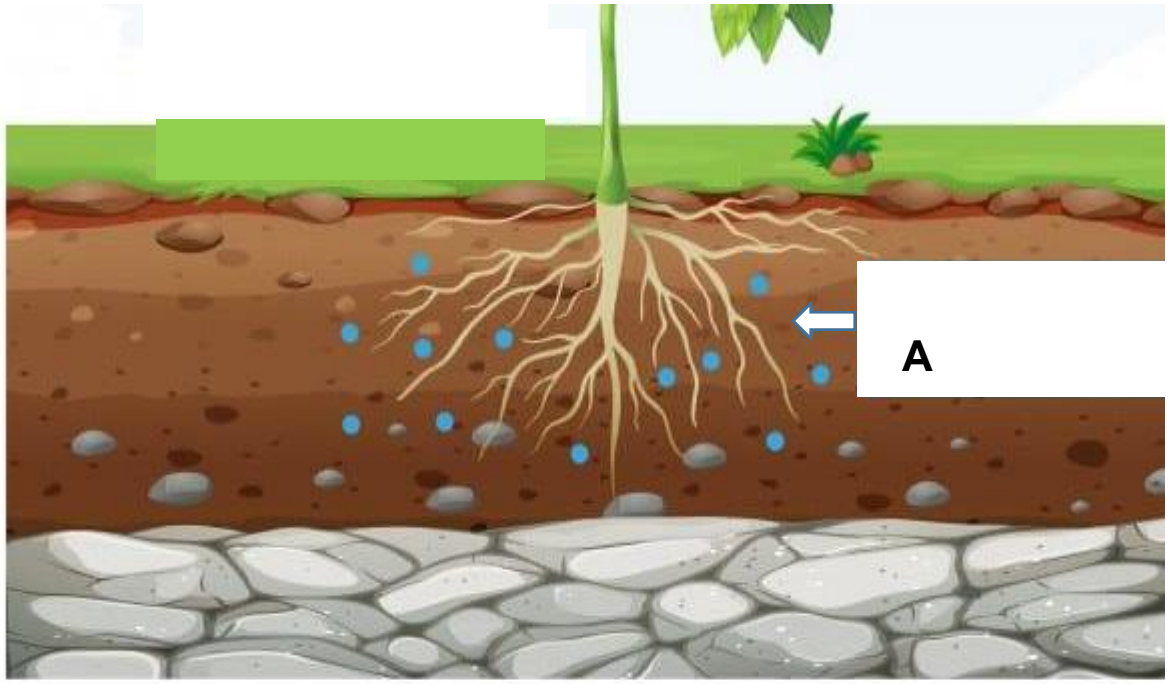

Fig. 1

With reference to Fig. 1, identify the type of fresh water store labelled **A** and describe how this water store forms.

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(b) Study Fig. 2, which shows the water budget in a catchment area.

Water budget in a catchment area

Fig. 2

With reference to Fig. 2, state the net change in storage and describe why this occurs.

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[Turn over

(c) Describe how people use water for industrial purposes.

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(d) With reference to a named example which you have studied, explain how human actions lead to water pollution.

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(e) Identify and describe the technology that Singapore uses to develop new ways to produce water.

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(f) Study Fig. 3, which shows a flood in Canada during Spring.

Flood in Canada during Spring

Fig. 3

With reference to Fig. 3, explain why this area in Canada is prone to this type of floods.

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Section B

Answer Question 2 from this section

2 **(a)** Study Fig. 4, which shows the rate of deforestation in Brazil, South America from 1995 to 2015.

Deforestation in the Amazon rainforest in Brazil, South America

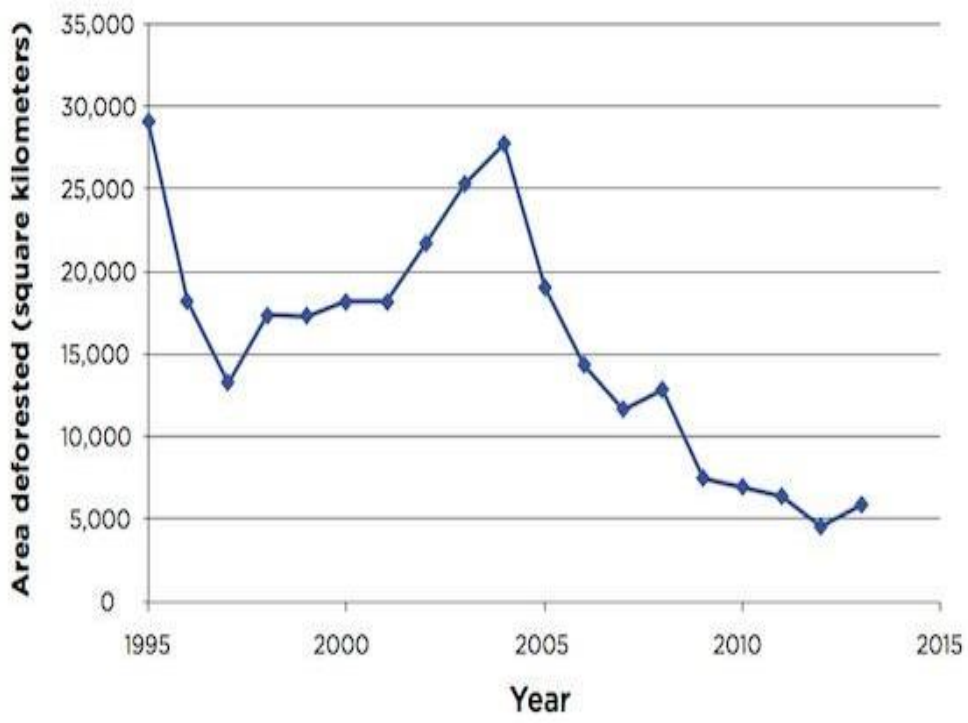

Fig. 4

With reference to Fig. 4, describe the trend in the deforestation rates in Brazil from the year 1995 to 2015.

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(b) Study Fig. 5, which shows the vertical structure of the tropical rainforest.

Structure of tropical rainforest

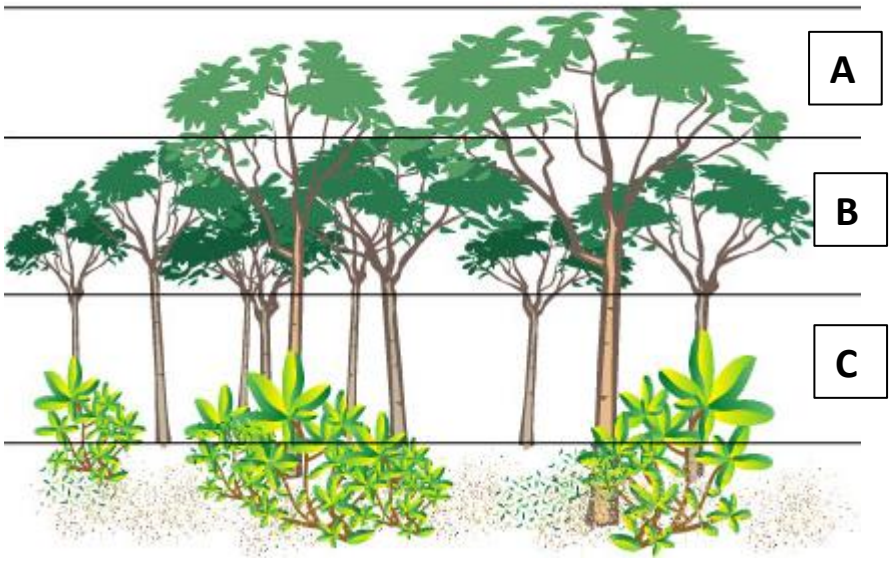

Fig. 5

With reference to Fig. 5, describe one characteristic of the three main layers of the tropical rainforest labelled **A**, **B** and **C**.

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[Turn over

(c) Identify and explain the conditions necessary for mangroves to grow.

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(d) Explain the characteristics of the Avicennia species in the mangrove forests that help it to adapt to the mangrove environment.

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(e) Explain two reasons why there is a lower diversity of plant species in the mangroves.

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(f) Study Fig. 6, which shows a root system in the mangrove forest.

Root system in the mangrove forest

Fig. 6

With reference to Fig. 6, identify the root system and describe how it enables the plants to adapt to the soil conditions.

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Additional page

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