Name: _____ ( ) Class: _____

PRELIMINARY EXAMINATION
GENERAL CERTIFICATE OF EDUCATION ORDINARY LEVEL

HUMANITIES (GEOGRAPHY)

2260/02

15 August 2024
1 hour 45 minutes

INSERT

READ THESE INSTRUCTIONS FIRST

This Insert contains additional resources referred to in the questions.

This document consists of **10** printed pages and **2** blank pages.

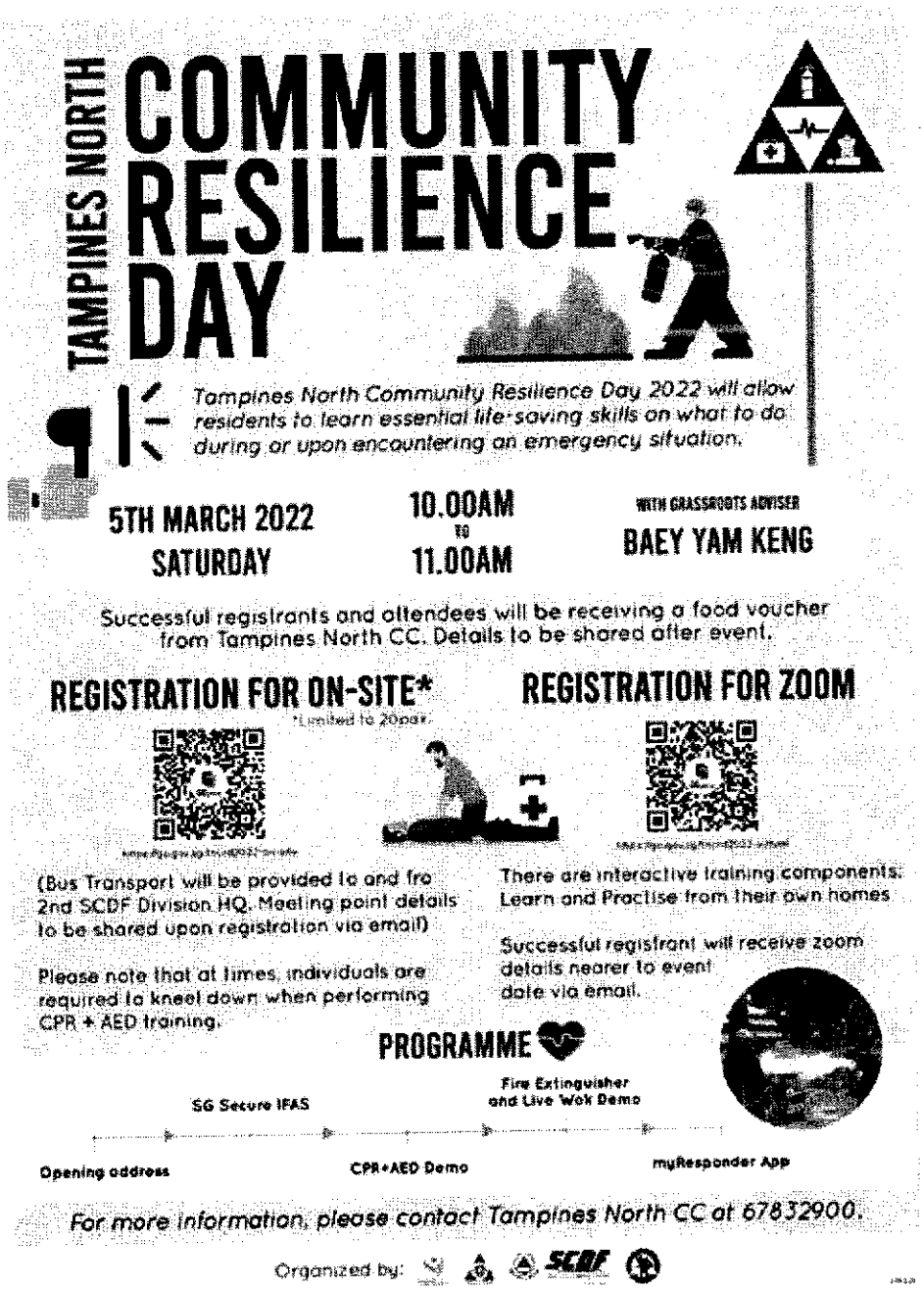
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Fig. 1.1 for Question 1

Poster for Community Resilience Day 2022

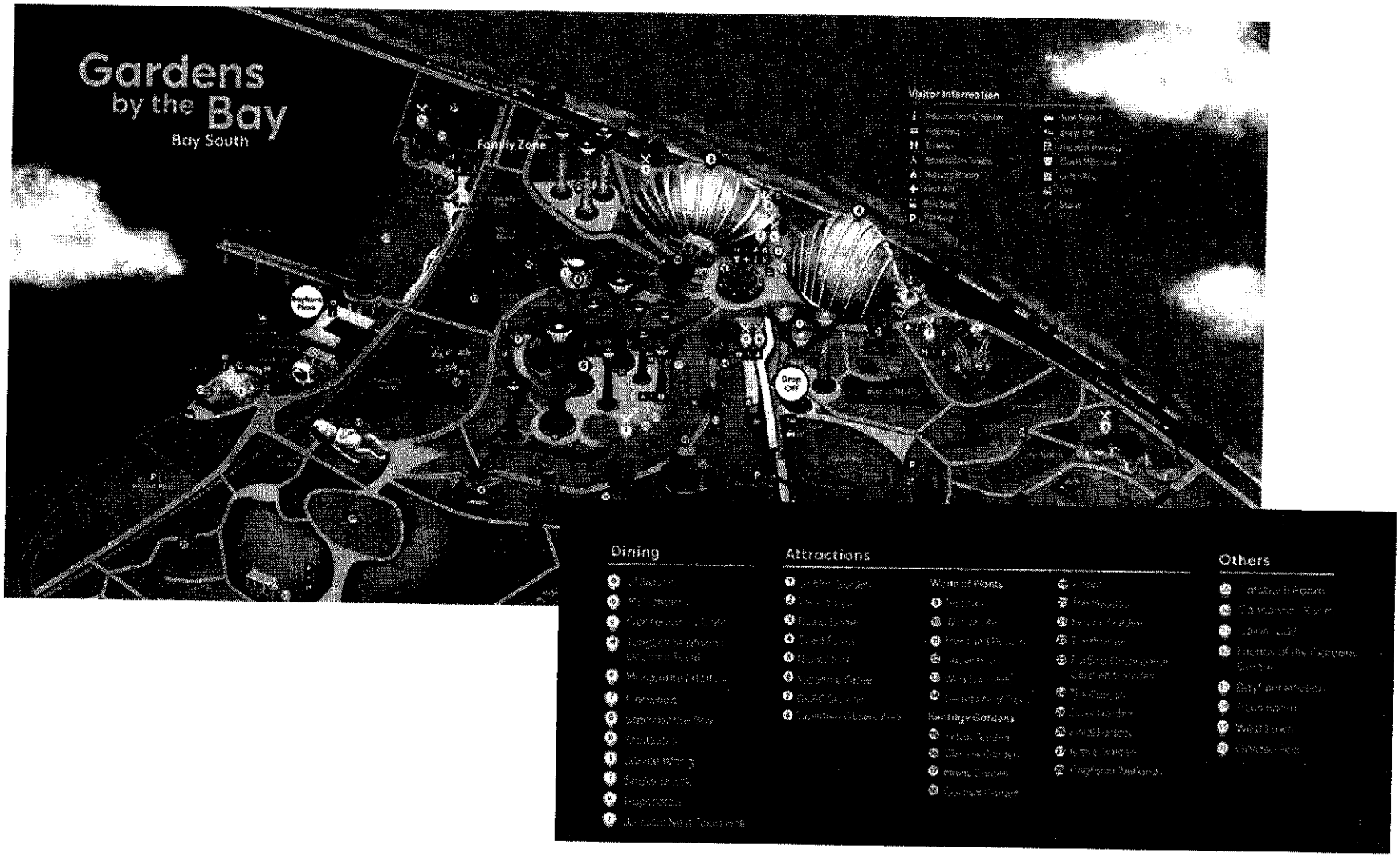


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Fig. 1.2 for Question 1

Map of Gardens by the Bay



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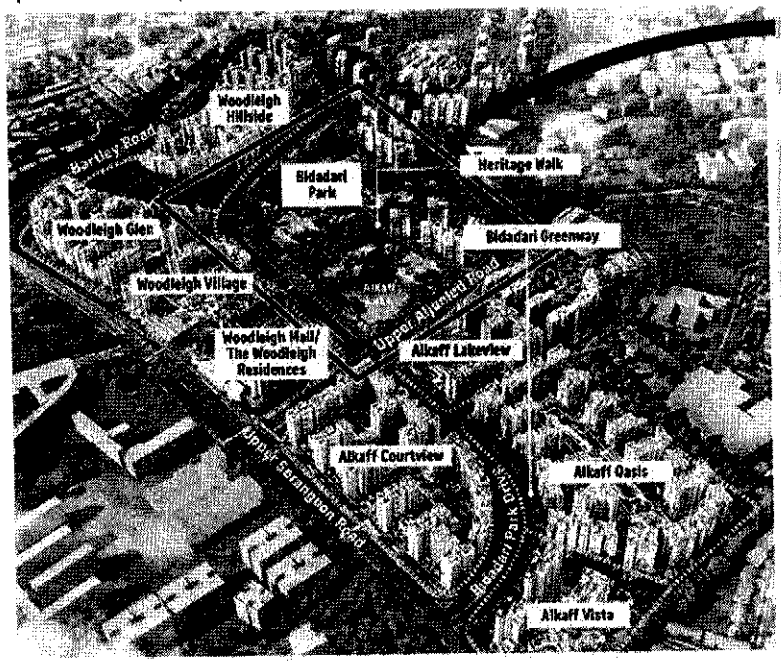
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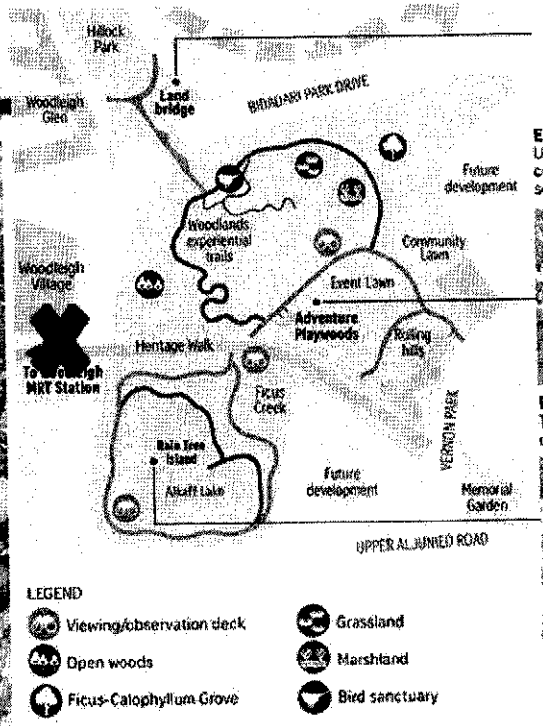
Fig. 1.5 for Question 1

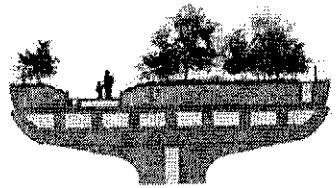
Map of Bidadari Estate

A tranquil urban oasis

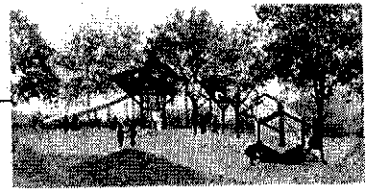
The new 10ha Bidadari Park will form a green lung for the Bidadari estate, which will be completed progressively by 2022. The park will have a lake, heritage walk, open lawns and experiential trails.







Eco-link for park users and wildlife
Up to 19m of the width of the land bridge connecting Bidadari Park and Hillock Park has been set aside for greenery as an eco-link for fauna.



Encouraging natural play
The Adventure Playwoods, a playground for children, will feature a nest-shaped treehouse.



Rain Tree Island
The new Alkaff Lake will feature a conserved rain tree on its little island in the middle.

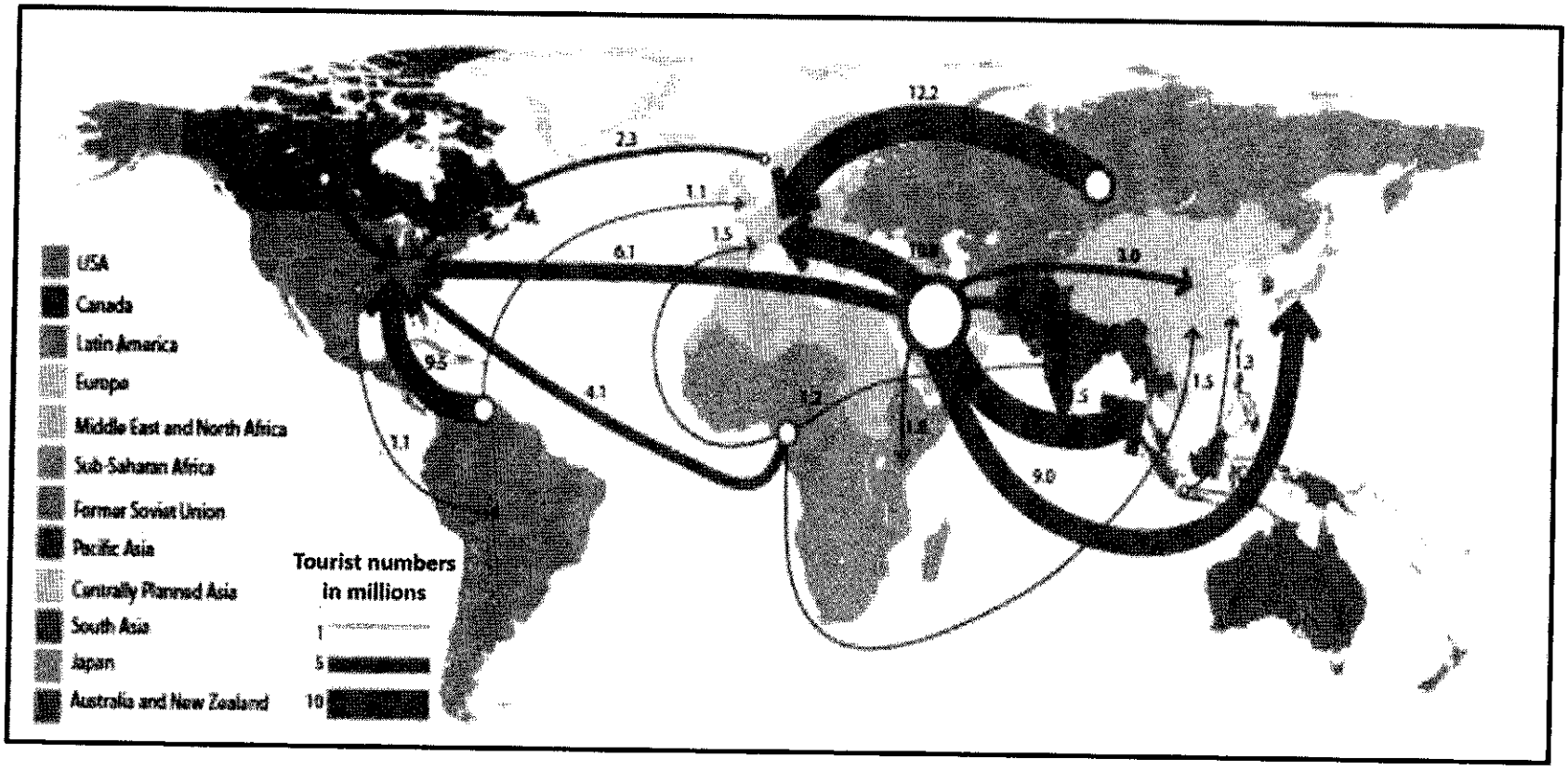
PHOTOS: HDB STRAITS TIMES GRAPHICS

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Fig. 2.1 for Question 2

Flow of Global Tourism in 2023



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Fig. 2.2 and 2.3 for Question 2

Fig.2.2 Benefits of Ecotourism

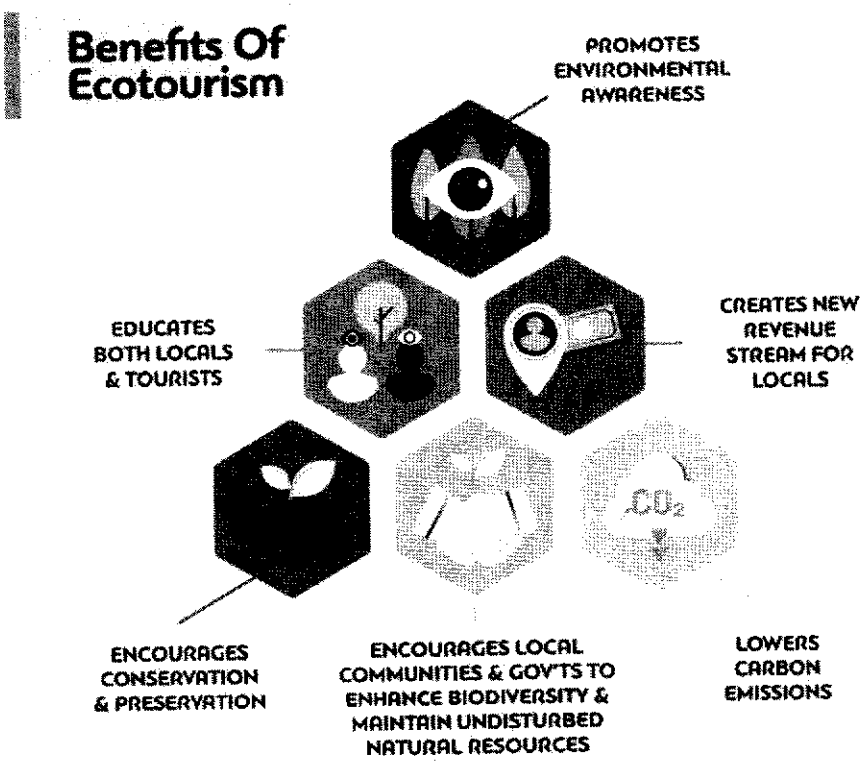
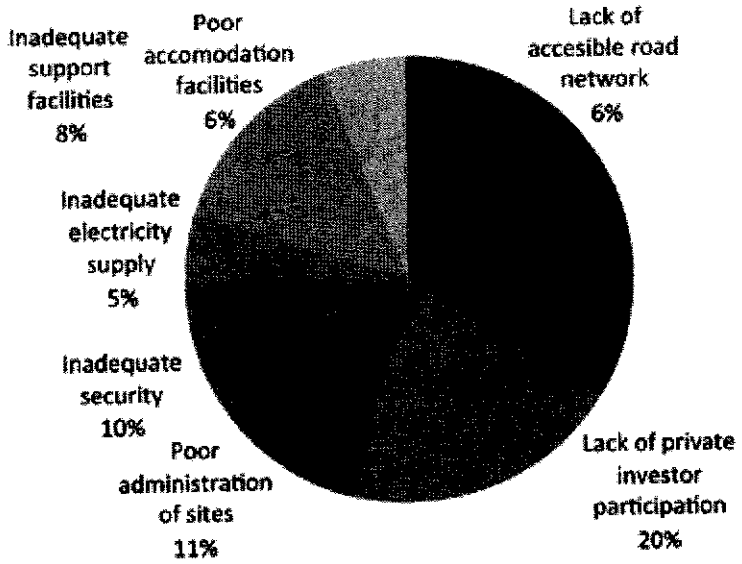


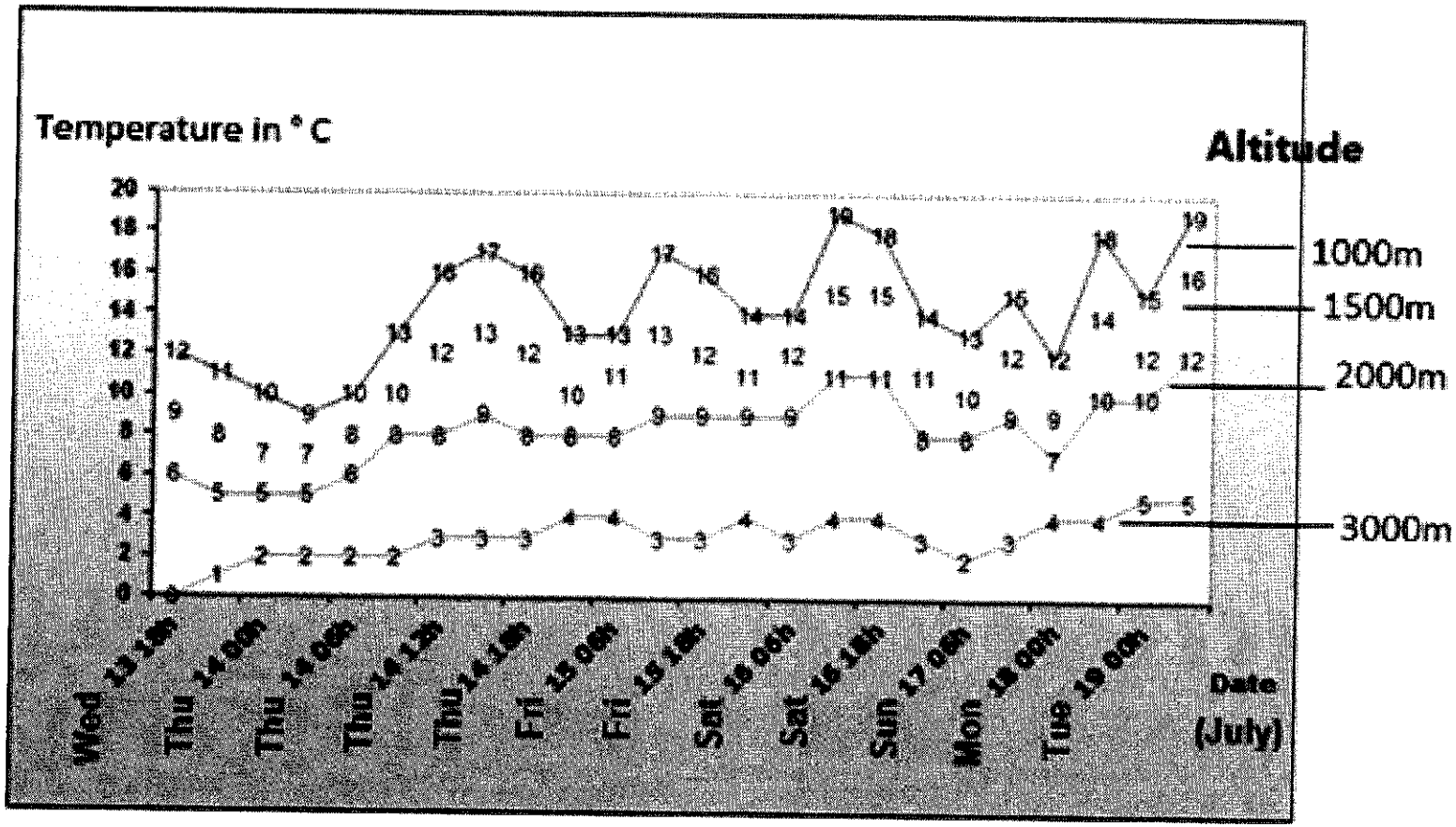
Fig. 2.3 Reasons why Ecotourism may fail



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Fig. 3.1 for Question 3

Temperature of various point at Northern Alps



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Fig. 3.2 and 3.3 for Question 3

Fig. 3.2 Human Activity



Fig. 3.3 Natural Hazard

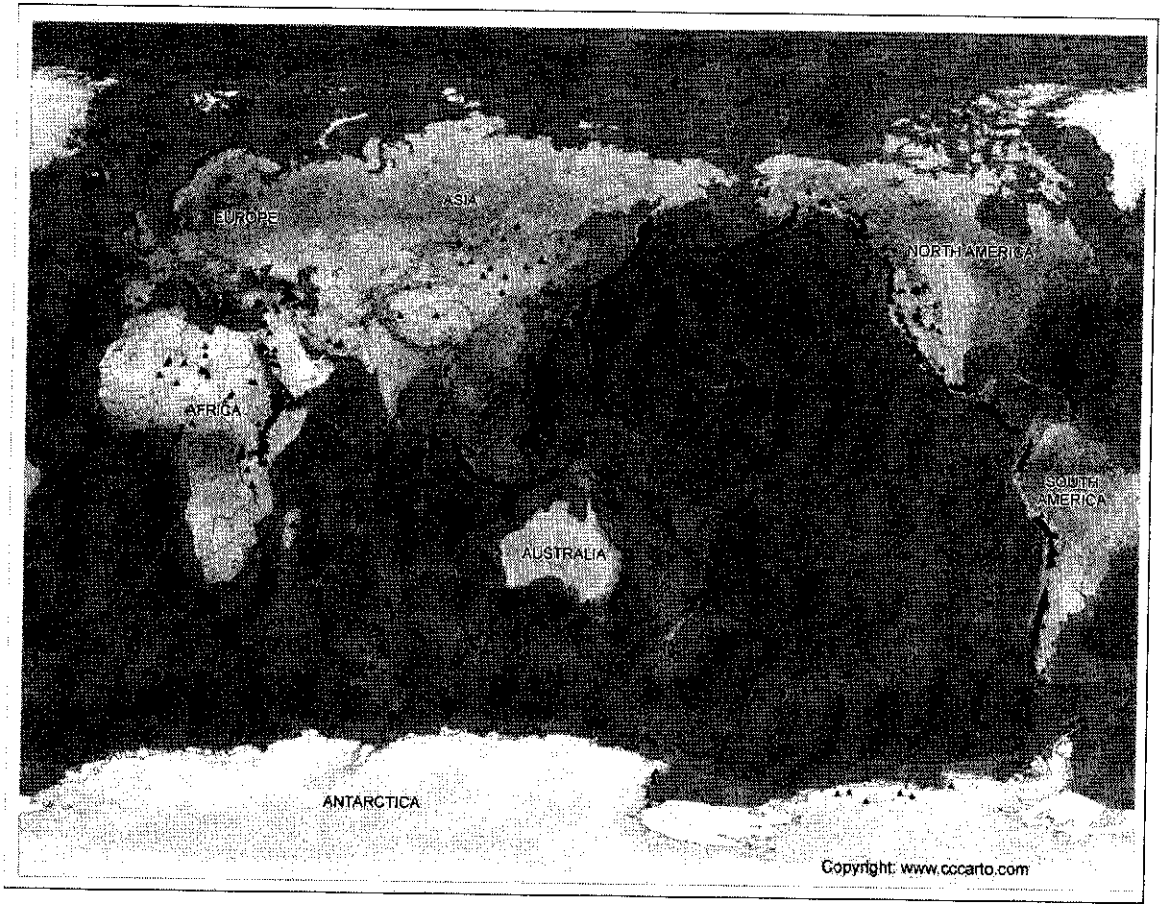


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Fig. 4.1 Question 4

Distribution of Volcanoes on Earth



Legend

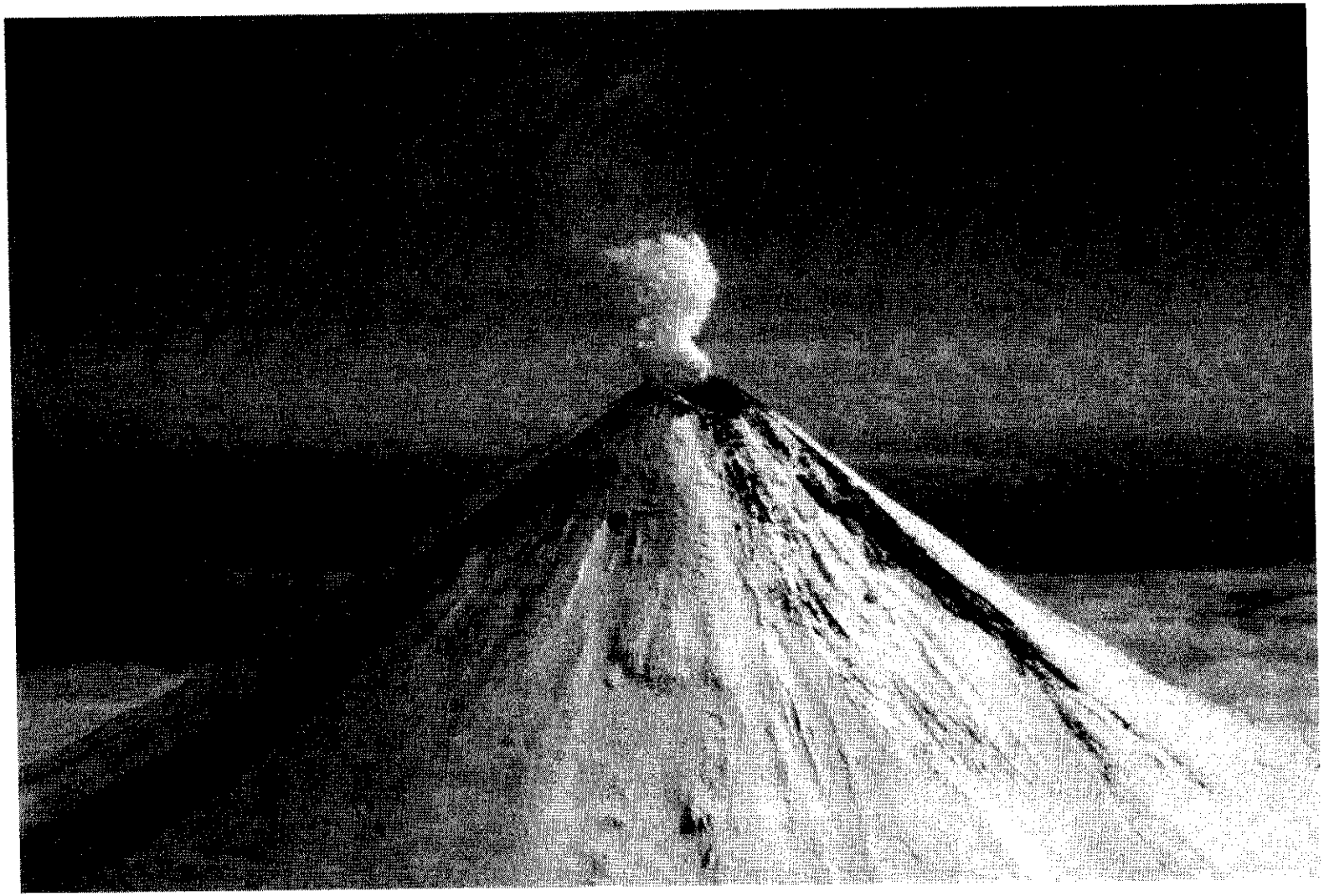
▲ -Volcano

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Fig. 4.2 Question 4

Shishaldin, a volcano spewing ash and volcanic gas



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Question 1 Fig, 1.1: https://www.facebook.com/TampNorth/photos/a.964528186951627/6978632938874425/?type=3&eid=ARDHIT1QW4U9oyRDa4doz5VhcDOutrjCKnblsPzH-6Erx39wOVW9OOG3LocQnyYEPsnT_RGi9EMAXv1y&locale=ms_MY&__rdr
Question 1 Fig. 1.2: https://www.gardensbythebay.com.sg/en/plan-your-visit/gardens-map.html
Question 1 Fig. 1.4: https://www.la-accreditation.org.sg/post/bidadari-estate-to-have-green-haven-with-lake-and-trails
Question 2 Fig. 2.1: https://community.tableau.com/s/question/0D54T00000C6hczSAB/trade-flows-map-from-origin-to-destination-with-flow-intensity (adapted)
Question 2 Fig. 2.2 and 2.3: https://mize.tech/blog/ecotourism-101-ecotourism-examples-definition-best-practices/
Question 3 Fig. 3.1: http://meteojcd.free.fr/index_GB.h
Question 3 Fig. 3.2: https://education.nationalgeographic.org/resource/deforestation/
Question 3 Fig. 3.3: https://www.scmp.com/week-asia/explained/article/3041783/explained-asias-deadliest-eruptions-and-four-volcanoes-watch
Question 4 Fig. 4.1: https://www.cccarto.com/volcano/#1/-22/6

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Question 4 Fig. 4.2: https://education.nationalgeographic.org/resource/plate-tectonics-volcanic-activity/\

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Name: _____ ( ) Class: _____

PRELIMINARY EXAMINATION
GENERAL CERTIFICATE OF EDUCATION ORDINARY LEVEL

HUMANITIES (GEOGRAPHY)

2260/02

Paper 2

15 August 2024
1 hour 45 minutes

READ THESE INSTRUCTIONS FIRST

Write your name, register 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 diagrams or graphs.
Do not use highlighters, glue, correction fluid or correction tape.

Section A
Answer Question 1 **and** Question 2.

Section B
Answer **either** Question 3 **or** Question 4.

The number of marks is given in brackets [ ] at the end of each question or part question.
The total number of marks for this paper is 50.

This document consists of **17** printed pages, and **1** blank page and **1** insert.

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Section A

Answer **all** questions from this section.

Cluster 1: Geography in Everyday Life

1 (a) Study Fig. 1.1 (insert) which is a poster for Community Resilience Day 2022.

With reference to Fig. 1.1, explain how community resilience can be developed among residents.

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(b) Study Fig. 1.2 (insert) which shows a map Gardens by the Bay and Fig. 1.3 below, which is an extract from the Urban Asia Blog entitled, 'Is Singapore Truly Sustainable? Greenwashing in the 'City in a Garden'.

Is Singapore Truly Sustainable

> The Supertree Grove consists of 18 'Supertrees' that are large-scale, vertical gardens that integrate solar power generation and rainwater collection into their design. They also act as venting ducts for the nearby conservatories. However, the Supertrees are part of the larger Gardens by the Bay that includes vast amounts of imported, non-native plants, and massive glass, climate-controlled structures, including the world's largest glass greenhouse. Non-native plants require different conditions to survive than native plants, including climate and irrigation control and the use of pesticides and insecticides.

Fig. 1.3

With reference to Fig. 1.2 and 1.3, evaluate the sustainability of Gardens by the Bay.

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(c) Bidadari Park nestled within the new Bidadari Estate is the size of 10 hectares (ha) in size. As part of the estate's green initiatives, the park will be a connect the residential blocks with trails that weave and connect seamlessly throughout the estate.

A group of students from SNGS wanted to investigate the role that Bidadari Park plays for the residents living in the area to acquire a sense of place in the new neighbourhood.

(i) One of the questions in their survey was:
'How many times a month do you visit the park and about how long do you stay per visit?'

They plotted the results of the question for the first day in the scatter plot shown in Fig. 1.4 below.

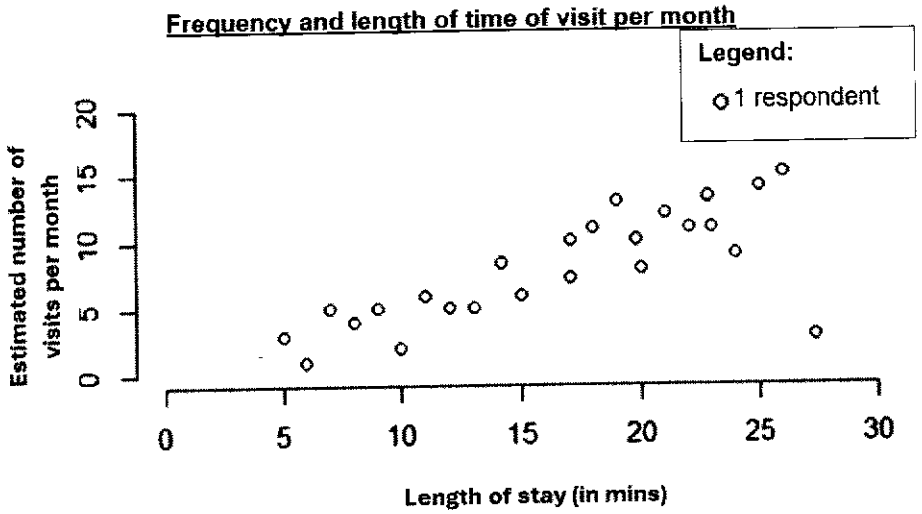


Fig. 1.4

Draw a best fit line on Fig. 1.4 and describe the relationship between frequency of visit and length of stay.

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(ii) The students also conducted a visitor count of the park at location 'X' along the Heritage walk shown in Fig. 1.5 (insert). They counted the people walking into the park for 10 mins for each hour they were there. The result of the visitor count is shown in Fig. 1.6.

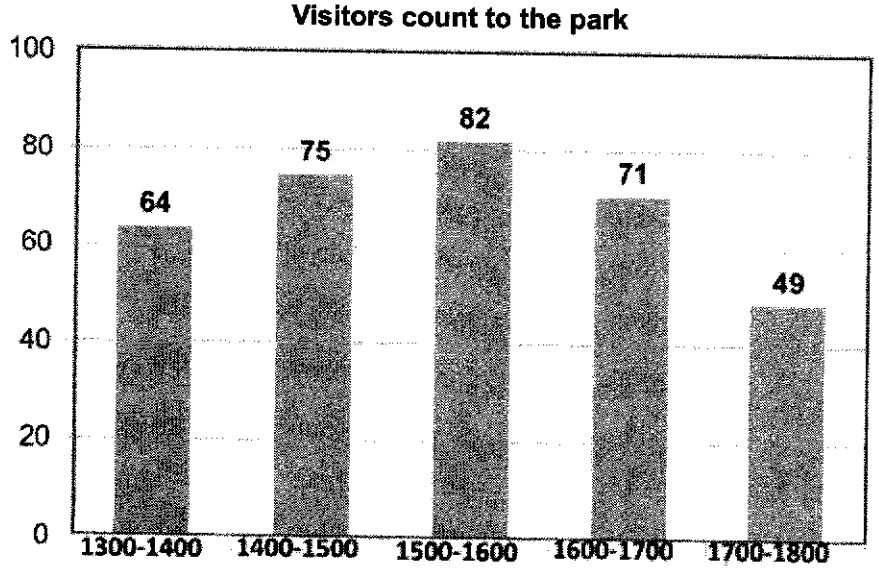


Fig. 1.6

With reference to Figs. 1.5 and 1.6, how valid are the students' findings on the number of visitors to the park.

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[14 marks]

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Cluster 2: Tourism

2 (a) Study Fig. 2.1 (insert) which shows a flow-line map of global tourism.

Using Fig. 2.1, describe the flow of tourists to and from USA.

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(b) Explain how tourism can positively impact the economy.

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(c) Explain the role of governments in influencing sustainable development in tourism.

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(d) Study Figs. 2.2 and 2.3 (insert), which shows the benefits and reasons that limits the effectiveness of ecotourism.

"The best way to manage tourism sustainability is to engage in ecotourism."

With reference to Figs. 2.2 and 2.3, to what extent do you consider this statement to be true. Explain your answer.

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[18 marks]

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Section B

Answer **EITHER** Question 3 **or** Question 4 from this section.

Cluster 3: Climate

3 **(a)** Study Fig. 3.1 (insert) which shows the altitude and temperatures at the Northern Alps in Europe.

With reference to Fig. 3.1, explain the effect of altitude on temperature.

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(b) Explain how climate change has disrupted marine food webs.

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(c) With the use of examples, describe how changes to consumption patterns may help to mitigate the effects of climate change.

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(d) Fig. 3.2 (insert) shows a human activity and Fig. 3.3 (insert) shows a natural hazard.

With reference to Figs. 3.2 and 3.3, discuss the causes of climate change.

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Cluster 4: Plate Tectonics

4 **(a)** Fig. 4.1 (Insert) show the locations of volcanoes found around the world.

Using Fig. 4.1, describe the global distribution of volcanoes with reference to plate boundaries.

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(b) Study Fig. 4.2 (insert) which shows, Shishaldin, a volcano on Unimak Island, Alaska, USA.

(i) Identify the type of volcano shown in Fig. 4.2 and describe the visible features of the volcano.

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(ii) Explain the formation of volcanoes such as Shishaldin.

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(c) Explain the process that leads to the formation of fold mountains.

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[18 marks]

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Additional Page

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Question 1 Fig. 1.3: https://urbanasia.blog/2020/12/10/is-singapore-truly-sustainable-greenwashing-in-the-city-in-a-garden/

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HUMANITIES

ANSWERS

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1 Cluster 1: Geography in Everyday Life

(a) Study Fig. 1.1 (insert) which is a poster for Community Resilience Day 2022.

With reference to Fig. 1.1, explain how community resilience can be developed among residents.[2]

Students to explain how community resilience can be developed. There must be reference made to the Fig. if not award a max of 1 m.

Community resilience refers to the ability of a community to resist, adapt to and recover from impacts of disasters in a timely and efficient manner. This can be done through:

Strengthening relationships among residents where they are encouraged to get to 'know their neighbours' so that they can depend on one another during an emergency. Through the event they will be able to meet and get to know each other especially since there are activities taking place there.

To be able to organise themselves and equip themselves with resources to resist, adapt and recover from disaster. Residents in the neighbourhood can participate in activities such as learning to do CPR+AED at the event.

Accept any plausible answers.

(b) Study Fig. 1.2 (insert) which shows a map Gardens by the Bay and Fig. 1.3 below, which is an extract from the Urban Asia Blog entitled, 'Is Singapore Truly Sustainable? Greenwashing in the 'City in a Garden'.

With reference to Fig. 1.2 and 1.3, evaluate the sustainability of Gardens by the Bay.[6]

Students must discuss all three pillars of sustainability – Economic, Cultural and Environmental – 2 marks each.
Students must present both sides to be awarded full marks.
3 marks for sustainable/ 1 mark for unsustainable
2 marks for reference to Figs (must be both the figs 1.2 and 1.3)
If there are no reference made to Figs. award a max of 4 marks

Economic activities

Economic sustainability refers to all human being enjoying a prosperous life in harmony with nature. The gardens are economically sustainable as in the midst of all the greenery, there are many shops such as satay by the bay where Singaporeans can be employed in.

Cultural

Cultural sustainability refers to a society which is inclusive. The gardens showcased the main cultures in Singapore such as the presence of Indian Chinese Malay colonial gardens

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Environmental

Environment sustainability refers to management of natural resources and action against climate change. The gardens have taken many steps such as using clean energy e.g. solar power. However, it is also environmentally unsustainable as it also causes a lot of pollution though the use of pesticides and insecticides. It also contribute to enhance greenhouse effect due to the climate-controlled structures, including the world's largest glass greenhouse.

Accept any plausible answers.

(c) A group of students from SNGS wanted to investigate the role that Bidadari Park plays for the residents living in the area to acquire a sense of place in the new neighbourhood.

(i) One of the questions in their survey was:
'How many times a month do you visit the park and about how long do you stay per visit?'

They plotted the results of the question for the first day in the scatter plot shown in Fig. 1.4 below.

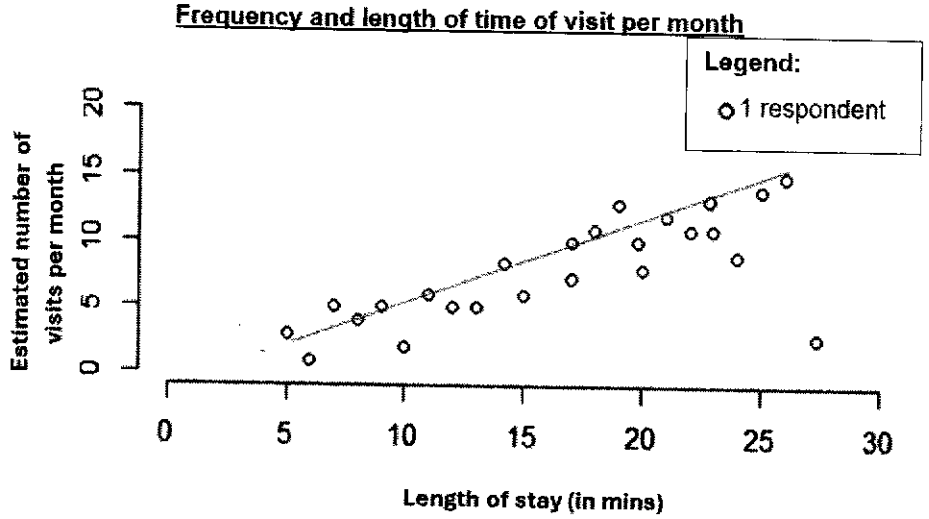


Fig. 1.4

Draw a best fit line on Fig. 1.4 and describe the relationship between frequency of visit and length of stay.[3]

Line of best fit [1]

Describe the relationship:

Students to provide the relationship based on the line of best fit and support with data and identify the anomaly. If no data is quoted award a max of 1m.

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The relationship is that the more the frequency of visits the longer the length of stay at the park + Data to support this relationship – must have 2 data points – any suitable data from the Fig. 1.3

Anomaly: one respondent had low frequency but stayed for a long duration (support with data from Fig. 1.3 e.g. the visitor visited less that 5 times but stayed for about 27 mins each time.

Accept any plausible answers.

(ii) The students also conducted a visitor count of the park at location 'X' along the Heritage walk shown in Fig. 1.4 (insert). They counted the people walking into the park for 10 mins for each hour they were there. The result of the visitor count is shown in Fig. 1.5.

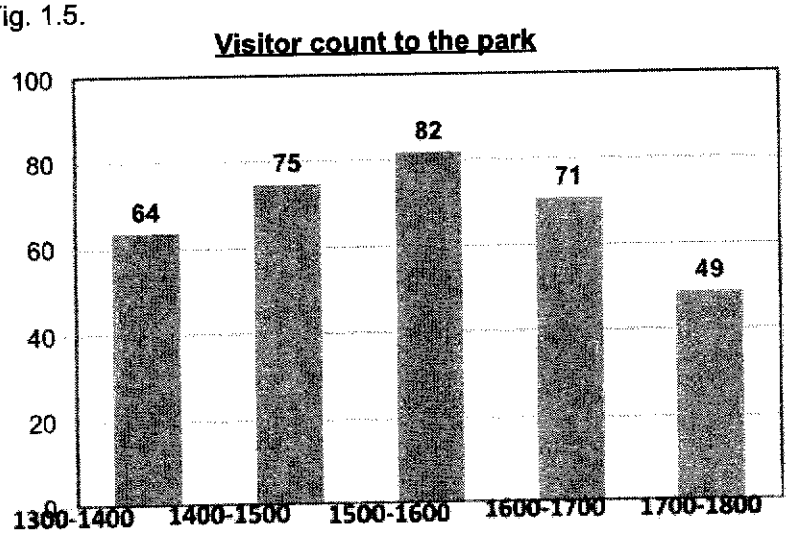


Fig. 1.6

With reference to Figs. 1.4 and 1.5, how valid is the students' findings on the number of visitors to the park.[3]

Students must discuss both the validity and invalidity of the data.
If only one sided, max marks to be awarded is 2 marks
Students must make reference to the data in their answers. If no data is referred to, max marks to be awarded is 2 marks.

Valid:
Time - Length of time for the collection of data is long enough – 5 hours
Location – good as the location would have high traffic and its at the entry point of the park.

Not valid
Location – may double count, they may just be going through the park and not visit the park.
There are other entry points to the park.
Time – Only went once and only in the afternoon so this may not be representative.

Accept any plausible answers.

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2 Cluster 2: Tourism

(a) Study Fig. 2 (insert) which shows a flow-line map of global tourism flows.

Using Fig. 2.1, describe the flow of tourists to and from USA. [2]

Students are to describe where the tourists to US are coming from and also where the US tourists are going. If no reference to Fig. 2.1 is made award a max of 1m.

Direction and Magnitude
Most tourists travelling to US are from Middle East (6.1 millon) and the least from Europe (2.3 million)
Tourist leaving US travelled to Latin America (1.1 millsion)

Accept any plausible answers.

(b) Explain how tourism can positively impact the economy.[3]

Students are explain one or two positive impacts of tourism on the economy. For 3 marks to be awarded for only one factor it must be a detailed explanation (include the data).

Creation of employment
Tourism contributes positively to the economies of countries by creating employment opportunities and incomes. The tourism industry is relies on a huge workforce to produce goods or services. labour intensive and hence creates a large number and wide range of employment opportunities. In 2019, tourism accounted for 330 million jobs worldwide representing about 10% of the global workforce and between 2015 - 2019, about 25% of all new jobs were created by the tourism industry.

Gross Domestic Product
In 2019, the tourism industry contributed about 10% to global GDP. Tourism generates a huge amount of money for governments and raises personal incomes for locals. When tourists spend money on goods and services offered by locals such as accomodation and food, they can increase the incomes for these locals. Taxes on tourism spending can provide governments with considerable revenues. This can then be used to invest in improving infrastructure, pay for education and health services, which can benefit local communities. For instance, tourism contributes 4% to Singapore's GDP - the more tourists Singapore manages to attract, the more spending tourists will contribute to Singapore's economy, hence boosting the national GDP.

Accept any plausible answers.

(c) Explain the role of governments in influencing sustainable development in tourism.[4]

Students are to describe what government can do when trying to develop tourism sustainably. 1m for each description and marks may be awarded if examples that illustrates the idea is given. Accept all plausible answers.

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The government can influence sustainable tourism development by establishing policies and creating plans as well as enforcing regulations.

Governments can set up policies or plans that other stakeholders will be required to adhere to. This will ensure minimal damage to the environment while maximizing benefits to locals. For example, in Sentosa, Singapore, the authorities can enforce the adoption of plans to conserve the rich heritage while protecting the islands' biodiversity. They also aim to achieve carbon neutrality by 2030.

Governments can also play a key role in enforcing regulations by limiting the type of tourism activity and the number of tourists that can enter a tour site. In Bhutan, tourists can only enter the country by organizing their trip with licensed tour operators thus reducing the number of tourists that can enter Bhutan at any given time.

Accept any plausible answers.

(d) Study Figs. 2.2 and 2.3 (insert), which shows some of the benefits that ecotourism brings, and some the reasons that limits effectiveness of ecotourism.

"The best way to manage tourism sustainability is to engage in ecotourism."

With reference to Figs. 2.2 and 2.3, to what extent do you consider this statement to be true. Explain your answer. [9]

Level 1 (0-3 marks)	- At this level, answers lack detail. - A basic answer that has little development - Answers may be general in nature with little or no place-specific examples. - There may be no or little attempt at an evaluation.
Level 2 (4-6 marks)	- At this level, answers will contain some appropriate detail. - The content will lack balance and some relevant detail. This means that only one-sided responses are fully considered. - Or both sides are considered but support is patchy so that the answer is not full. - Assessment may be given but may be general in nature. - An example will be presented to support answers in at least one place in the answer.
Level 3 (7-9 marks)	- At this level, answers will comprehensive and supported by sound knowledge. - There will be assessments of the extent to which different factors (include given) are fully considered. - Examples to support answers can be found in most places in the answer

I do not agree that ecotourism is the best way to manage tourism.

Ecotourism

Ecotourism is a form of sustainable tourism that takes place in natural areas which allows for tourist to experience nature. It aims to conserve the natural environment while benefiting the local community, involving strategies such as educating and increasing tourists' appreciation of nature. This can be done in the form of having tours within natural areas while highlighting some of the impacts they are causing when

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there is overtourism. For example, in Galapagos Islands in Ecuador attract many tourists for their unique flora and fauna. In order conserve the unique biodiversity in the area, the government place a limit on the number of visitors allowed in the park at any given day to minimise disturbance to the wildlife. In addition, tourists are also required to pay an entrance fee of USD$100 when visiting the park that is then used to fund conservation projects. This meant that developing a tourist destination through ecotourism can help to conserve the natural areas while supporting the local community with economic and social benefits.

Community-based Tourism

Another way to manage tourism would be through community-based tourism. This includes experiences like homestays and agricultural tourism where local communities have maximum involvement in the tourism industry, ensure economic and social sustainability. This can be done through encouraging local communities to take part in the decision making on tourism development so that their needs can also be met through these. Educating tourists and increasing their appreciation of local culture through promotion of interactions such as having traditional homestays in the Binsar Wildlife Sanctuary Binsar in North India. can allow tourist to live with a local family and experience the local culture and traditions. This ensures economic, cultural, and environmental sustainability as the needs of the locals are all taken into account.

Pro-Poor Tourism

Another strategy to engage in sustainable tourism could be pro-poor tourism which focuses on improving livelihoods of the poor through training and access to micro-finance. This can be in conjunction with ecotourism or community-based tourism if it aims to bring in benefits specifically for the poor. This is useful as micro-finance schemes can allow locals to receive a loan to start up a small business to earn a living which can lift them out of poverty. Pro-poor tourism can be found in the villages around China's Three Parallel Rivers Region, a UNESCO World Natural Heritage Site where villagers nearby have set up tourism businesses such as homestays and restaurants, catering to tourists. This improves the viability of tourism in supporting the locals as their income and standard of living increases.

One of the limitations of ecotourism is the uncertainty over the continuity of efforts in conserving nature. Ecotourism will not work when ecotourism becomes overwhelmingly popular, and the volume of tourist may exceed the capacity set. There could also be limited involvement of the local community and thus the benefits to them are not maximized. Similarly, for community-based tourism, there could also be limitations in that profits are prioritized over the preservation of culture, and thus resulting in the commodification of said culture. Finally, PPT has been criticized for over-emphasizing local initiatives and the private sector's lack of interest in poverty alleviation. *(Students can also discuss the limitations when they discuss the various approaches)*

Conclusion

In conclusion, I do not agree that ecotourism is the best way to manage tourism as to claim that one way is the best way is not possible. This is because, while the ideals behind ecotourism, community-based tourism and pro-poor tourism are important to consider, the context of tourism development, must be considered. One can even have a mix of approaches to suit the unique location and stage of tourism development that needs to be managed sustainably.

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Section B

Answer **EITHER** Question 3 **or** Question 4 from this section.

3 Cluster 3: Climate

(a) Study Fig. 3.1 (insert) which shows the altitude and temperatures at the Northern Alps in Europe.

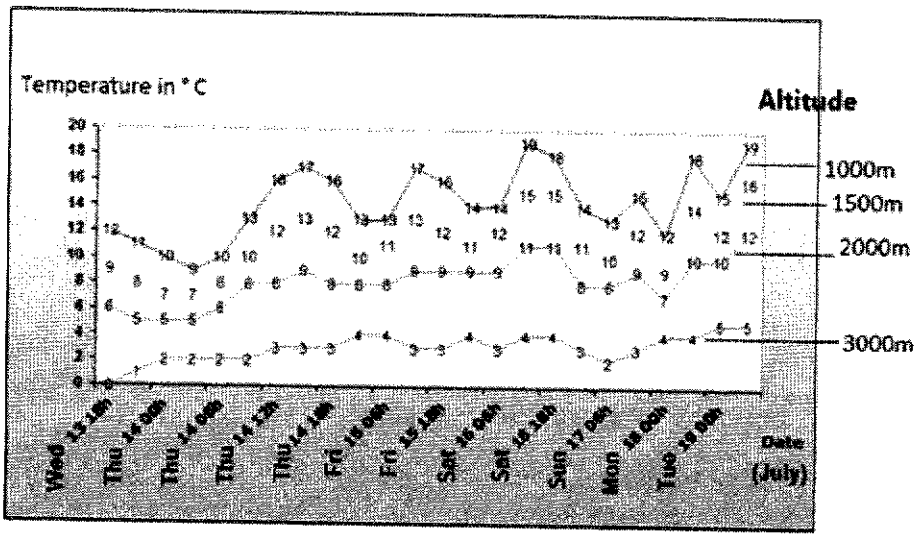


Fig. 3.1

With reference to Fig. 3.1, explain the effect of altitude on temperature.[4]

Award 1m per explanation for – higher altitude lower temperature.
Students must make references to the information on Fig. 3.2 to illustrate their point. If no reference is made, award a max of 3 marks.

The higher the altitude the lower the temperature, [Data] when altitude is high at 3000m the temperature range is between 0°C to 5°C and when altitude is lower at about 1000m temperature ranges 9°C to 19°C.[1]
Accept any suitable data points.

Explanation [3]

Concentration of atmospheric gases is higher at lower altitudes as compared to higher altitudes due to the pull of gravity pulling the air molecules closer to the Earth's surface. The denser air can absorb and radiate more heat at the lower altitudes resulting in higher temperatures at lower altitudes.
Lower temperatures at higher altitudes which would have less air molecules to absorb and radiate heat.

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(b) Explain how climate change has disrupted marine food webs. [3]

Students must discuss disruption of marine food webs due to the slowing down of global circulation.

Due to climate change, there is a **reduction in the mixing of deep and surface waters**, aquatic organisms living near surface waters, especially **marine algae and bacteria (Phytoplanktons) would not get their supply of nutrients from the deep ocean**. As **phytoplanktons form the base of the food web**, the **species higher up in the food chain, such as fish and whales, will decrease** due to a lack of food. The entire ecosystem will be affected. It has been found that phytoplankton levels in the North Atlantic have dropped by 10% since the 1800s.

Accept any plausible answers.

(c) With the use of examples, describe how changes to consumption patterns may help to mitigate the effects of climate change.[5]

Students must describe at least two changes to consumption.
Students must provide examples for each of the strategy described.
Reserve 2 mark for examples – one for each change. Award max of 3m for answers without reference to an example.

Consumption refers to:

- Food that we consume.
- Waste that we produce.

Food choices

Food production is responsible for more than a quarter of all greenhouse gas emissions. The types of food we consume emits different amounts of greenhouse gas and have varied environmental impacts. Changing what we eat if we want to reduce and slow down climate change is important. For example: Shifting to plant-based diets as agriculture is an anthropogenic cause of climate change – specifically how the rearing of cattle produces methane gas. Buying local produce can be beneficial to the environment, as it uses less transportation and consequently causes less carbon emissions.

Reducing Food Waste

When food enters the landfill and rots, it produces methane, contributing to climate change as methene is a greenhouse gas which traps heat. With more methene in the air it can thus lead to global warming. For example, we can reduce food waste by only buying what you need and don't avoid ugly food.

Reducing support for fast fashion

The fashion industry is responsible for 10% of annual global carbon emissions. As consumers demand more frequent changes in designs, production of apparels and footwear will also increase. This increase in production has led to the increase in greenhouse gas emissions thus leading to global warming. For example, we can ask if the manufacturers used sustainable criteria to make the clothing before buying or repair or upcycle your old clothing.

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Accept any plausible answers.

(d) Fig. 3.2 (insert) shows a human activity and Fig. 3.3 (insert) shows a natural hazard.

With reference to Figs. 3.2 and 3.3, discuss the causes of cause climate change. [6]

Award 1m for each well-explained cause of climate change. Award 3m for natural factors. Award 3m for anthropogenic factors. Students are expected to provide both natural and anthropogenic causes – capped at 4m if it is one-sided. Up to 2m may be awarded if examples illustrate the point.

Natural factors

Generally, global temperatures decrease temporarily after a large volcanic eruption.
For example, the eruption of Mt Pinatubo in 1991 released 17 million tonnes of sulphur dioxide into the atmosphere that caused a drop of about 0.6°C over the 15 months after the eruption.
Ash reflects more solar radiation back into the atmosphere thus creating a temporary cooling effect
Sunspot occurrence causes variations in solar output which lead to small short-term changes in the Earth's climate.
Periods of maximum sunspot activity correspond to times of high annual surface temperatures on earth.
Higher sunspot activity is linked to higher amounts of solar radiation emitted from the sun, leading to short-term increases in average temperatures.

Anthropogenic causes

Deforestation

Accelerated deforestation to meet the demands of human activities increases carbon dioxide emissions because the clearing of trees reduces the number of trees that absorb carbon dioxide through photosynthesis. [1]
During photosynthesis, trees store carbon, when these trees are cut down or burned, the stored carbon is then released back into the atmosphere as carbon dioxide. [1]
The clearing of trees exposes the soil beneath to sunlight. This results in carbon oxidation.

Agriculture

As populations grow, forests are cleared to make space for agriculture to meet the rising demand for food. Agriculture contributes to about 30% of global greenhouse gas emissions yearly, mainly through burning of fossil fuels to operate farm machinery and vehicles.
Crop fertilisation using chemical fertilisers which induces chemical reactions in the soil that produce nitrous oxide.
Livestock rearing and natural decomposition processes release methane. [1] (About 40% of all anthropogenic methane emissions come from agriculture.)

Accept any other plausible reasons.

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4 **Cluster 4: Plate Tectonics – dummy question – so no answers provided.**

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