BEDOK VIEW SECONDARY SCHOOL
PRELIMINARY EXAMINATION 2022

HUMANITIES **2175/02**

Secondary Four Normal (Academic) **29 July 2022**

Paper 2 Geography **1 hour 40 minutes**

MARK SCHEME

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This document consists of **23** printed pages, including this cover page.

Section A

Answer **either** Question 1 **or** Question 2 from this section.

1 A group of students conducted a tourism study in Kilauea, a shield volcano in the Hawai'i Volcanoes National Park as shown in Fig. 1.

Map of Kilauea in Hawai'i Volcanoes National Park

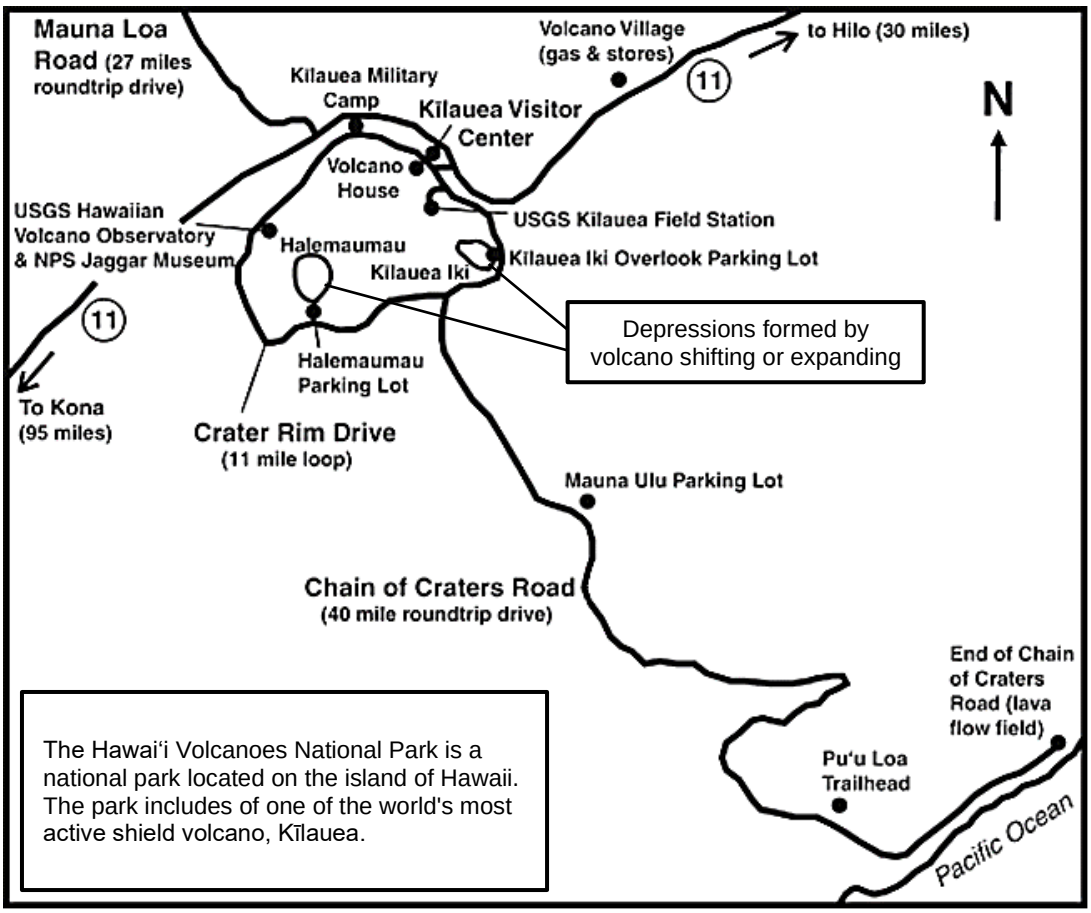


Fig. 1

(a) Using information from Fig. 1, suggest a hypothesis that the students can use to investigate the reasons why tourists are attracted to the park. [1]

Award 1m for any suitable hypothesis with reference to Fig. 1.
Accept any one of the suggestions below or other plausible answers.

- Most tourists are attracted to Hawaii Volcanoes National Park because of Kilauea/ visiting the volcano Kilauea.
- Most tourists visit the park for its scenery/ the Kilauea visitor centre/ volcano village/ the USGS Hawaiian Volcano Observatory & NPS Jagar museum.

(b) The students devised a questionnaire as shown in Fig. 2 and used systematic sampling to conduct the study on 200 respondents.

Questionnaire on Hawai'i Volcanoes National Park

VISITOR QUESTIONNAIRE

We are a group of Geography students conducting a study on tourism in Hawai'i Volcanoes National Park. We value your opinions and would be grateful if you could take a few minutes to help us with our study.

Date:_____

Time:_____

1. Age group

- ❑ ≤ 20 years old
- ❑ 21 to 40 years old
- ❑ 41 to 60 years old
- ❑ ≥ 61 years old

2. Gender

- ❑ Male
- ❑ Female

3. How long is your visit to Hawai'i Volcanoes National Park?

- ❑ Half a day
- ❑ 1 day
- ❑ 2 days
- ❑ 3 days
- ❑ More than 3 days
- ❑ Others:_____

4. Rate the ease of accessibility to Hawai'i Volcanoes National Park:

- ❑ 1 – Not accessible
- ❑ 2 – Somewhat accessible
- ❑ 3 – Moderately accessible
- ❑ 4 – Accessible
- ❑ 5 – Very accessible

5. Why do you visit Hawai'i Volcanoes National Park?

_____

_____

Fig. 2

(i) Explain how systematic sampling is carried out. [2]

Award 1m for each point.

- Systematic sampling is carried out using predetermined interval.
- The students can select a number e.g., 2 and carried out the questionnaire on every 2nd, 4th and 6th etc respondents

(ii) The students decided to carry out the questionnaire at the Kilauea Visitor Center. Do you think this is an ideal site? Give reasons to justify your answer. [3]

Award 1m for agreeing on the ideal site.
Award up to 2m for explaining why Kilauea Visitor Center is an ideal site. Accept other plausible answers.

- Yes the site is ideal.
- There would be a large number of visitors that would be available for the sampling size and method.
- The site is neutral as it is not at the specific places of interest and hence will not result in biasness in data collection.
- Visitors at the visitor center may be more willing to participate in the questionnaire as they may be able to spare some time unlike visitors at the Pu'u Loa Trailhead who maybe hiking and it would not be ideal to disrupt them from their activities.

(iii) Using Fig. 2, describe the features of the questionnaire and the advantages of using different types of questions. [3]

Award 1m for describing a feature of the questionnaire and up to 2m for advantages of using open and closed-ended questions. Accept other plausible answers.

- The features of the questionnaire include questions that require personal details, closed- and open-ended questions.
- The closed-ended questions are easy to answer and collate and can be used for statistical analysis.
- The open-ended questions are useful in helping to get more detailed responses and is ideal to ask questions on perception and opinions.

(c) The students collated the data on the tourists' length of stay at the park and used Table 1 and Fig. 3 to represent their data.

Table 1

Tourists' Length of stay

Length of stay	**Half a day**	**1 day**	**2 days**	**3 days**	**> 3 days**
Number of tourists	104	43	28	17	8

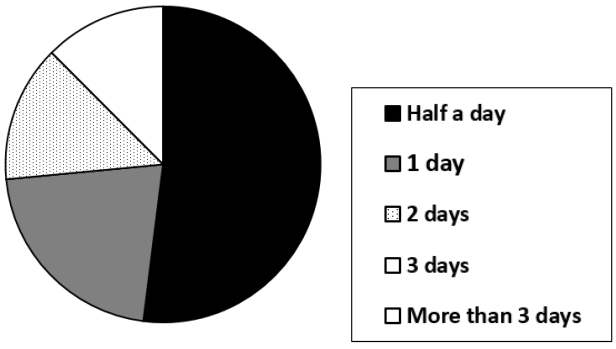
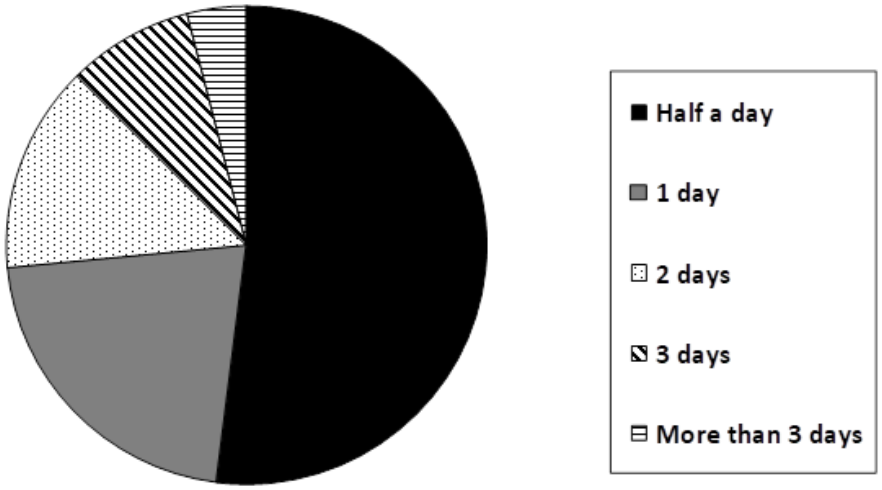


Fig. 3

(i) Using information from Table 1, complete the pie chart for tourists' length of stay for 3 days and more than 3 days and use a suitable shading for the pie chart and legend on Fig. 3. [2]

Award 1m for accurately subdividing the last segment of the pie chart and 1m for using different pattern or shade in the pie chart and the key.



(ii) Which of the data representation method, Table 1 or Fig. 3, is more useful in helping the students to draw conclusions? Give reasons to support your answer. [2]

Award 1m for selecting table or pie chart with a valid reason.
Award another 1m for another reason or .
Accept other plausible answers.

- The table is useful as it can show the absolute figure of the tourists' length of stay.
- Readers can easily compare the data of see the highest and lowest no. of tourists' length of stay.
  OR
- The pie graph is more useful as it can show the percentage or proportion of the tourists' length of stay.
- The visual representation is easy to interpret as it is easy to conclude that the largest proportion of tourists of more than 50% stay for half a day.

2 A group of students were investigating the weather in east Japan. They collected data from locations Nebukawa and Odawarajo during the day.

Study Tables 2 and 3, which show the relative humidity and temperature results collected by the students, and Fig. 4, which shows a satellite map of the two locations.

Table 2

Results of relative humidity and temperature in Nebukawa

	Mon	Tue	Wed	Thu	Fri
Relative Humidity (%)	80.5	80.5	84	81	82
Highest Temperature (˚C)	29	29	29	28	30
Lowest Temperature (˚C)	28	26	27	26	28
Mean Temperature (˚C)	28.5	27.5	28	27	29

Table 3

Results of relative humidity and temperature in Odawarajo

	Mon	Tue	Wed	Thu	Fri
Relative Humidity (%)	78	81	75.5	77	73
Highest Temperature (˚C)	32	32	31	33	32
Lowest Temperature (˚C)	27	29	28	29	28
Mean Temperature (˚C)	29.5	30.5	29.5	31	30

A satellite image of east Japan

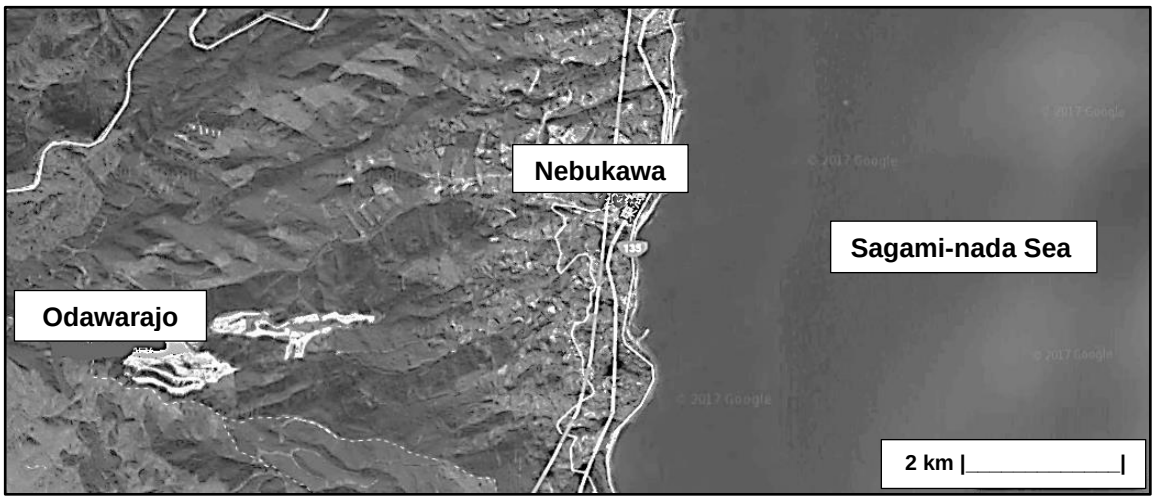


Fig. 4

(a) Suggest a guiding question that the students can investigate. [1]

Award up to 1m max for a guiding question that links location to temperature or humidity. Accept other plausible answers.

- How does distance from the coast affect temperature/relative humidity? OR
- Is temperature/relative humidity affected by proximity to the coast?

(b) From Tables 2 and 3 and Fig. 4, the students came up with a hypothesis: "Relative humidity is higher when the location is closer to the coast".

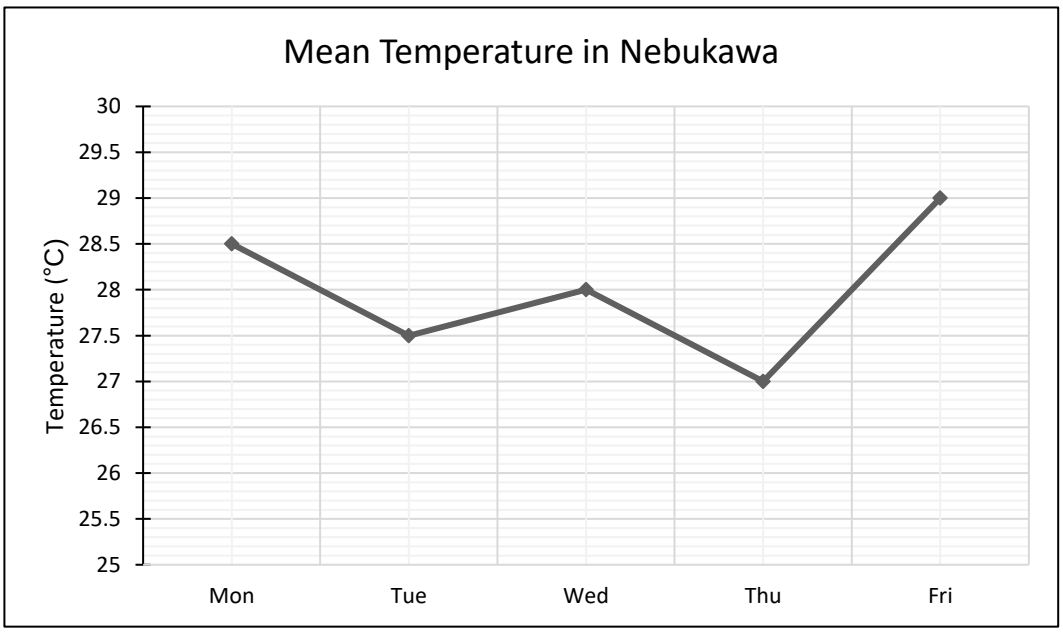
To what extent is the hypothesis true? Support your answer with evidence. [1]

Award up to 1m for validating hypothesis,1m for supporting hypothesis and 1m for citing anomaly.

- The hypothesis is true to a large extent.
- The relative humidity at Nebukawa is above 80% for all the days whereas the relative humidity of Odawarajo stays below 80% (between 73% - 78%) for Mon, Wed, Thu and Fri
- An anomaly is noted on Tues in Odawarajo. Relative humidity is 81% which is much higher than the rest of days.

(d) The students wanted to show the mean temperature of Nebukawa on a line graph. Using data from Table 2, complete the line graph below. [2]

Award 1m for each correct point plotted and line connected. Award up to 2m.



(d) Describe the steps students should take to measure relative humidity. [4]

Award 1m for each point, up to 4m max.

Sling psychrometer method
- Student should use a sling psychrometer/ hygrometer by wetting the wick of the wet bulb thermometer
- Hold the psychrometer away from the body, swing it at a regular pace for 1 minute
- Read the temperature of the wet and dry bulb and look up the conversion table to determine the relative humidity.
- Repeat the steps to collect three sets of reading and take the average of the readings.

OR

Weather Tracker method
- Student could use a weather tracker.
- Uncap the impeller and hold the weather tracker facing the wind direction.
- Hold the weather tracker away from the body for 1 minute
- Repeat the steps to collect three readings and take the average of the readings

(f) Suggest how the students could collect more accurate and reliable temperature data. [3]

Award 1m for each point and accept other plausible answers.
Reserve 1m for accuracy and 1m for reliability.

Accuracy – collection method/ use of instrument
- They should ensure their equipment such as the max-min thermometer or weather tracker is working properly.
- They should hold the weather tracker at one arms' length away from themselves so that the body temperature does not affect the temperature reading.
- They should place the max-min thermometer in a Stevenson's screen, protected from direct sunlight and rain.

Reliability – consistency of experiment
- They should record the data over the period of the investigation (e.g. ten days) and not miss any days.
- They should record the data at the same time (e.g. at 12pm) daily to ensure a better representation of the data.

Section B

Answer Question 3 from this section.

3 (a) Study Fig. 5, which shows a map of tourist areas in Kenya.

Map of Tourist Areas in Kenya

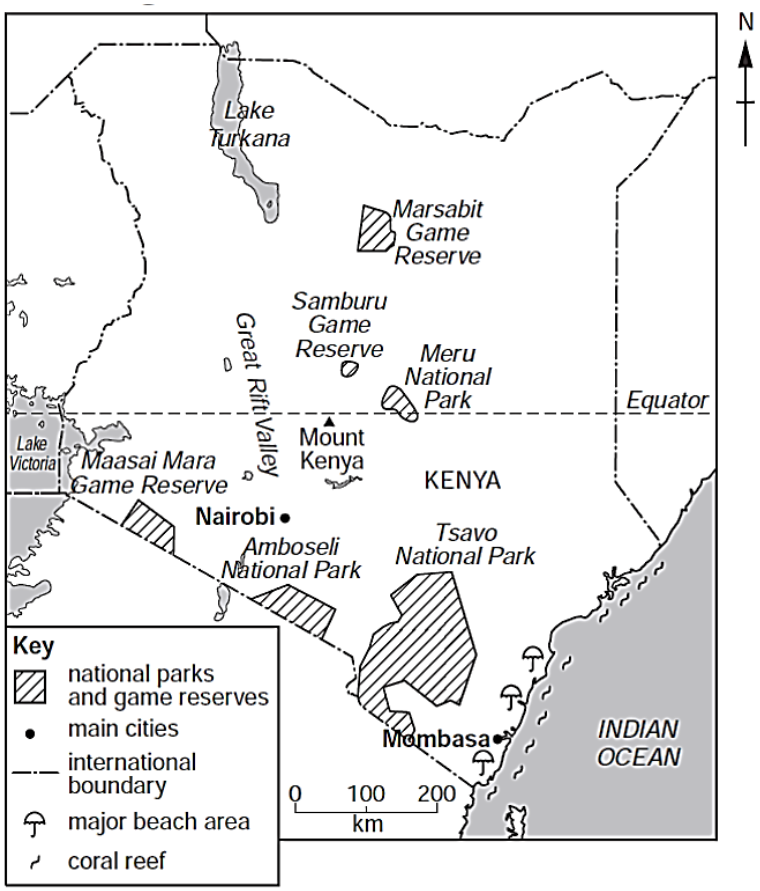


Fig. 5

Using evidence from Fig. 5 only, explain why tourists visit Kenya. [3]

Award 1m for each point with evidence from Fig. 5, up to 3m max. Accept other plausible answers.

- There are many national parks and game reserves like Meru National Park, Maasai Mara and Samburu Game Reserve which will attract tourists who are interested in nature / wildlife / safari to see wild animals in their natural habitat.
- There are major beach areas that face the Indian Ocean. This attracts tourists who are interested in coastal scenery / water sports / coastal activities / sunbathing.
- There are many coral reefs along the coast which could attract tourists who are keen on diving / snorkelling / exploring & seeing marine life.
- There are lakes such as Lake Turkana and Lake Victoria where tourists can go and appreciate the scenic beauty.
- There are also landforms such as Mount Kenya and the Great Rift Valley where the tourists can go for hiking and admire the geological formations.

(b) Study Fig. 6, which shows the motives for travels of tourists to the Way of St James in Europe in 2018 and 2020.

Motives for travels to the Way of St James in Europe in 2018 and 2020

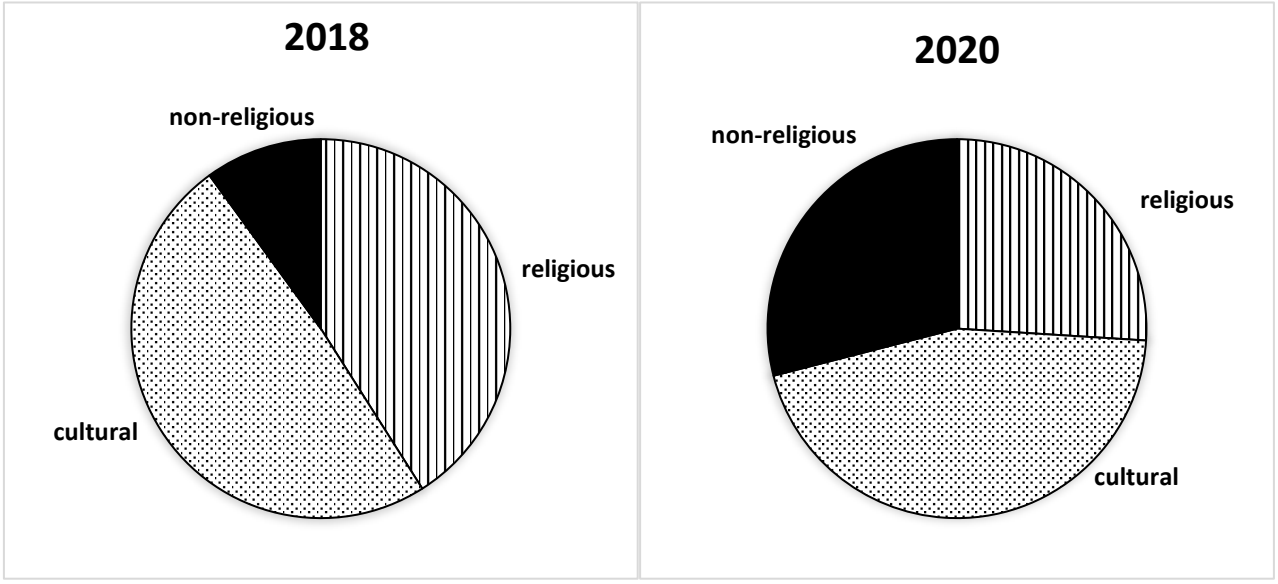


Fig. 6

Describe the changes between 2018 and 2020 shown in Fig. 6. [3]

Award 1m for each point describing the percentage or proportion of each motive with supporting data. Accept range of +/- 5% in numerical data.
Accept answers if change is given by subtracting values instead of percentage change.

- Tourists who travel to the Way of St James for religious reasons decreased the most from roughly 40% to 26% between 2018 and 2020, by 14%.
- Those who travelled for cultural reasons have also decreased from 50% in 2018 to slightly less at 45% in 2020, by 5%.
- There was an anomaly in non-religious motive for traveling to the Way of St James as it increased and doubled, from 13% to 30% from 2018 to 2020.

(c) 'Planning authorities play a greater role in managing the impacts of tourism than local communities.'

How far do you agree with this statement? Give examples to support your answer.

Level 1 (0-2)	At this level answers will be generalised or with minimal support if any stand were given at all. Reasoning rather weak and expression may be unclear. A basic answer that has little development. Award 1m for a brief description of the role of planning authorities in managing tourism impact. Award 2m for a brief description of the roles of planning authorities and local communities in managing tourism impact.

Level 2 (3-4)	Disagreement or agreement will be supported by appropriate details. Or, both agreement and disagreement are considered, but support is patchy so that the answer is not full. Good reasoning and logic in parts of the answer with good expression in places. Award 3m for an explanation which addresses the question and explains how planning authorities or local communities plays a role in managing tourism impact. Award 4m for an explanation which addresses the question and explains how planning authorities or local communities plays a role in managing tourism impact, with one place-specific example. Award a maximum of 3m for no use of examples in the answer, regardless of quality of explanation of various groups.
Level 3 (5-6)	At this level answers will be comprehensive and supported by sound knowledge. Both agreement and disagreement are considered and well supported. Reasoning is clear and logical with good expression of language. Award 5m for an explanation which addresses the question explains how planning authorities and local communities plays a role in managing tourism impact with two specific examples. Award 6m for L3-5m and a brief description of another reason how planning authorities or local play a role in managing impacts with a logical conclusion for the stand taken.

Sample Essay

I agree with the statement that 'Planning authorities play a greater role in managing the impacts of tourism than local communities.' However, both play a role in managing tourism impact and taking care of tourist areas.

Planning authorities refer to the group which are involved in the direct planning of tourist-related activities. Planning authorities that are effective can successfully develop, approve, fund and maintain infrastructure that help manage the impact of tourism in an area as they are about to draft and pass laws and policies. They play a large role in making decisions which can greatly influence the quality of tourist areas and environments by determining how many visitors a site can cope with and permitting the number of visitors who can visit the area. They also can allocate space for infrastructure such as roads and hotels to reduce the impact of overcrowding. One example is the Thai authorities capping the number of tourists at Maya Bay to rescue its stressed marine ecosystem. By sealing off the beach from the public, the coral coverage slowly recovered back to 50% of its original amount. Hence, the planning authorities play a great key role in taking care of tourist areas.

On the other hand, local communities also play a role in conserving and protecting tourist areas. They benefit economically from tourism, especially through community-based tourism. As locals on ground receives first-hand information about the impact on the tourist destination, the local communities can enlist residents in discussions and consultations about tourism management strategies to be carried out which can help to manage the impact of tourism. They can also make other tourism-related decisions about their community. For instance, the villagers from Candirejo Village, in Central Java, Indonesia were able to set up a cooperative in 2003 to manage and implement the community's tourism-related programmes so that tourism revenue would stay within the locals. However, this bottom-up approach requires the local community to have certain logistic, administrative skills and external funding.

In conclusion, I agree that planning authorities play a greater role in managing tourism impact than local communities. Another way planning authorities play a role in managing tourism impacts is by working with other government agencies and mobilise a range of government resources. However, the successfulness of managing tourism impacts by planning authorities depends on the effectiveness of strategies and strong governance. To manage tourism impacts holistically, various groups need to work together towards a common goal of tourism sustainability.

Section C

Answer **either** Question 4 **or** Question 5 from this section.

4 (a) Describe one similarity and one difference between tectonic and climate-related hazards. [2]

Award 1m for each similarity and difference, reserve 1m each.

- Both hazards are natural events that threaten human lives and cause damage to property.
- However, tectonic hazards are caused by plate movements in the Earth's crust while climate-related hazards are caused by severe and extreme weather and climate conditions.

(b) Study Fig. 7, which shows the map of Central Asia and Australia from June to September.

Award 1m for each correct label.

Map of Asia and Australia from June to September

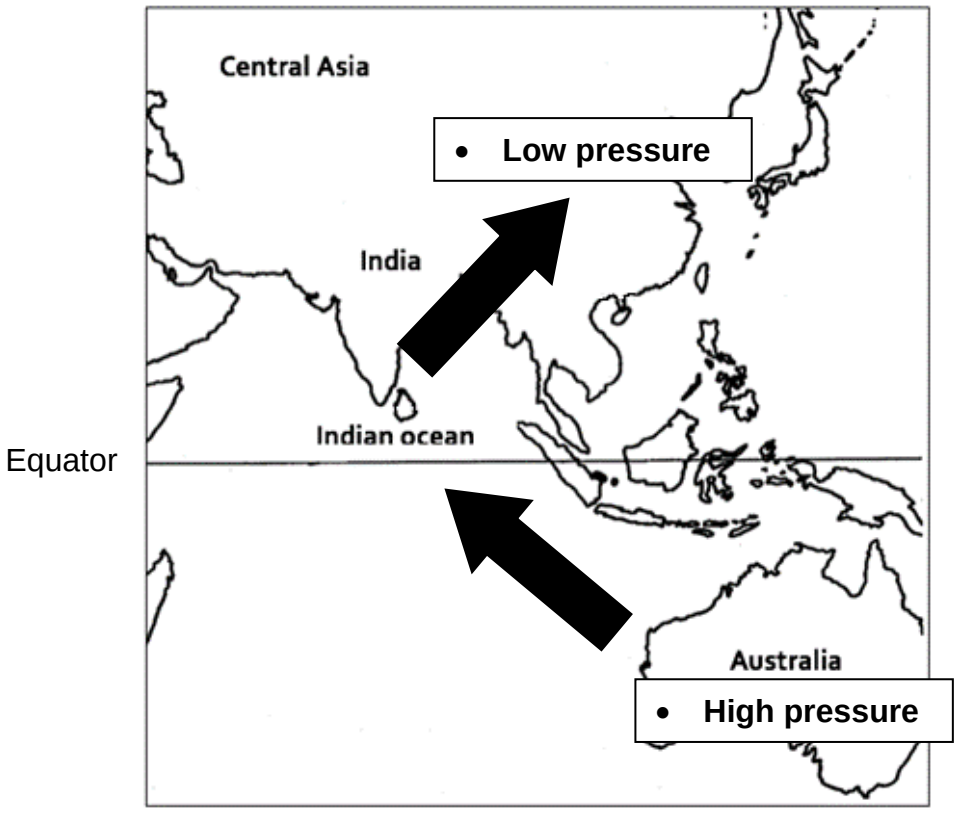


Fig. 7

(i) On Fig. 7, locate and label the following features:

- High pressure
- Low pressure
- Arrow to indicate the wind direction above the equator
- Arrow to indicate the wind direction below the equator

[4]

(ii) With reference to Fig. 7, explain why there will be heavy rainfall in India from June to September. [4]

Award 1m each for each point. Reserve 1m for identification of SW monsoon.

- Winter in the Southern Hemisphere results in high pressure in the Southern Hemisphere as cool air sinks. Summer in Northern Hemisphere results in low pressure as warm air expands and rises.
- Strong winds blow from high pressure area of Australia across the Equator to low pressure area over Asia as Southeast Monsoon.
- As winds cross the Equator, Coriolis effect deflects the wind to the right and become Southwest Monsoon winds.
- Southwest Monsoon picks up moisture from Indian Ocean, bringing heavy rain to India.

(c) Study Fig. 8, which shows an infographic on the impacts of climate change in Singapore.

Impacts of climate change in Singapore

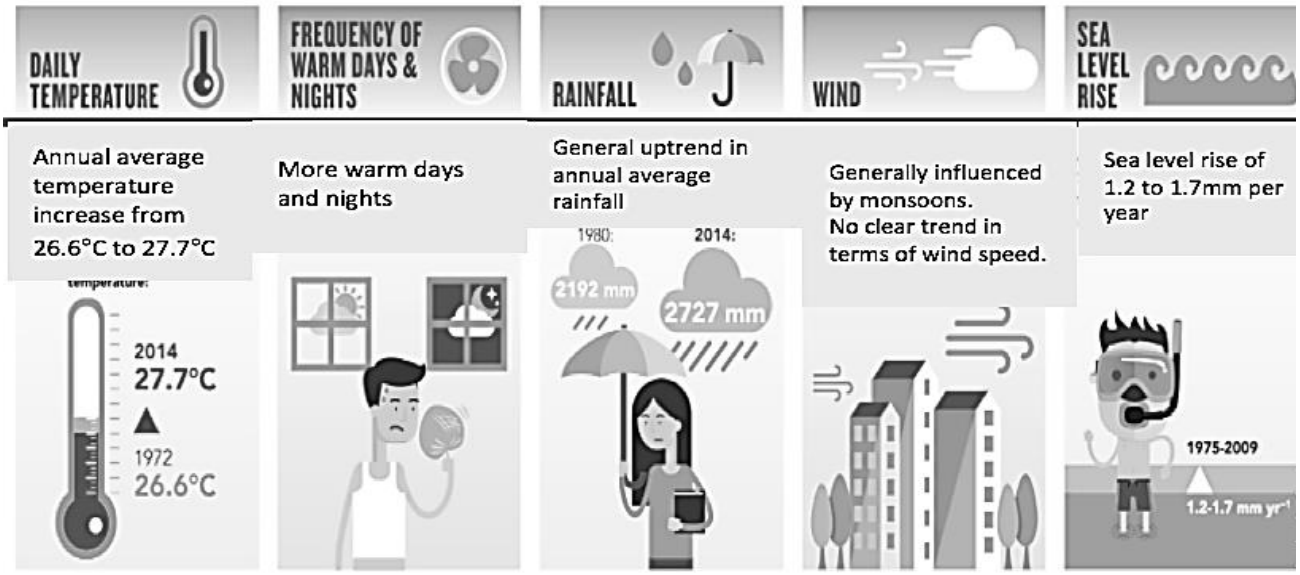


Fig. 8

Using evidence from Fig. 8, explain the impacts of climate change in Singapore. [5]

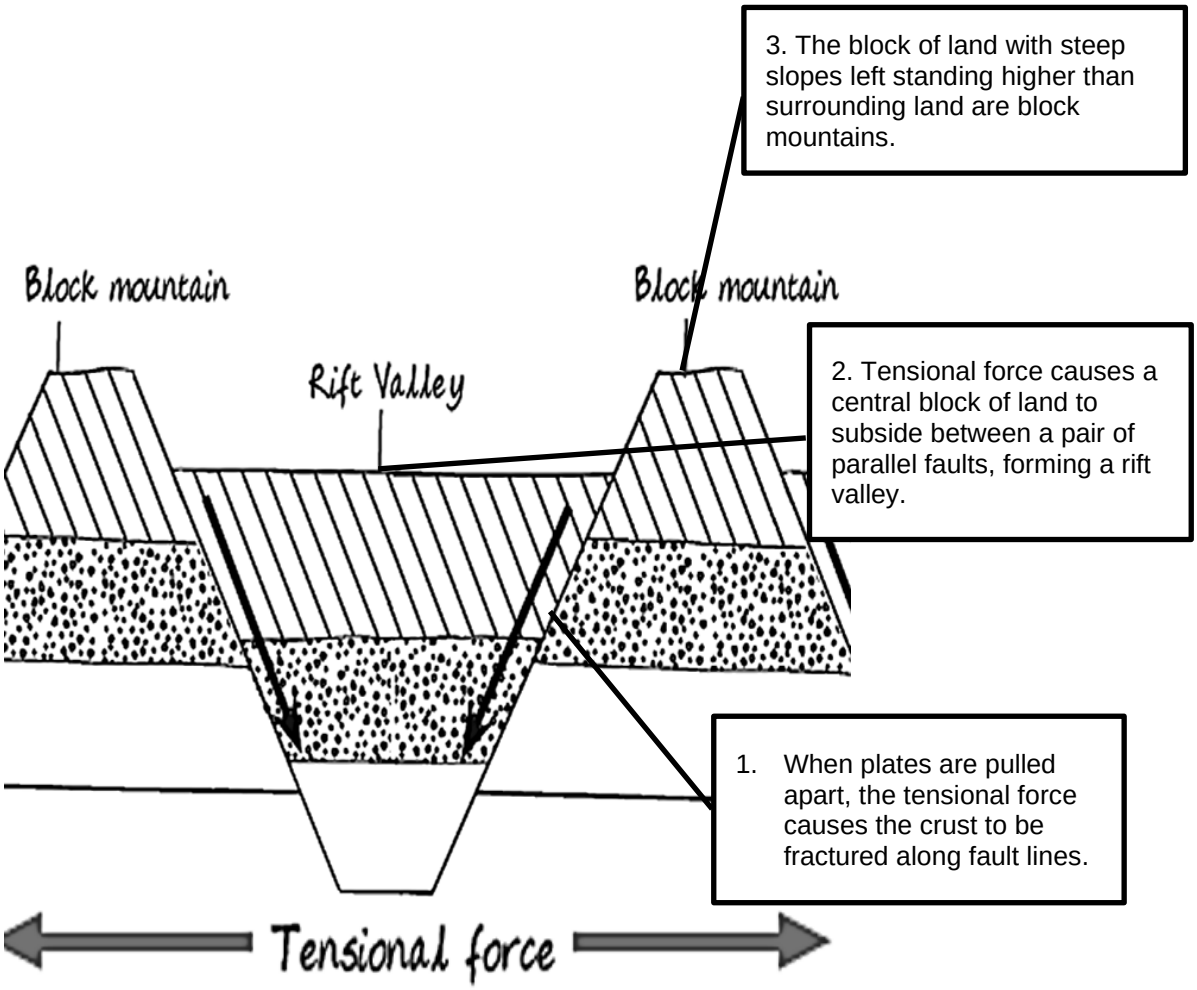
Award 1m for any of the following points below.
Award max 2m for answers without reference to Fig. 8.

- Climate change caused the increase in annual daily average temperature from 26.6°C to 27.7°C.
- With the increase in average temperature, there are chances of heat stroke or heat-related illnesses, such as fever and dehydration.
- Greater frequency of warmer nights could also result in a lot of discomfort and higher electrical bills as more people are likely to use air-conditioning.
- Higher annual average rainfall could increase the chances of storm, which could lead to flooding in some parts of Singapore.
- With the rise in temperature and rainfall, there is also a greater spread of infectious diseases.

- Mosquitoes breed faster when temperatures are higher, resulting in the spread of diseases like dengue.
- Rising sea level from 1.2 to 1.7mm could also lead to flooding near coastal areas/ to damage to coastal areas as sea water is highly corrosive.
- The government has to spend a larger amount of money on coastal protection or land reclamation to overcome sea level rise.

(d) Draw an annotated diagram to explain the formation of rift valley and block mountain. [4]

Award 1m for correct diagram drawn showing tensional force and fault lines, rift valley and uplifting block mountains.
Reserve up to 3m for explanation of rift valley and block mountain formation.



(f) ‘A high magnitude earthquake is the main cause of great damage.’

How far do you agree with this statement? Give examples to support your answer.

Level 1 (0-2)	At this level answers will be generalised or with minimal support if any stand were given at all. Reasoning rather weak and expression may be unclear. A basic answer that has little development. Award 1m for a brief description of high magnitude causing great damage. Award 2m for a brief description of any factor influencing extent of earthquake damage.
Level 2 (3-4)	Disagreement or agreement will be supported by appropriate details. Or, both agreement and disagreement are considered, but support is patchy so that the answer is not full. Good reasoning and logic in parts of the answer with good expression in places. Award 3m for an explanation which addresses the question and explains how high magnitude influences the extent of earthquake damage. Award 4m for an explanation which addresses the question and explains how two factors influence the extent of earthquake damage, with one place-specific example. Award a maximum of 3m for no use of examples in the answer, regardless of quality of explanation of roles.
Level 3 (5-6)	At this level answers will be comprehensive and supported by sound knowledge. Both agreement and disagreement are considered and well supported. Reasoning is clear and logical with good expression of language. Award 5m for an explanation which addresses the question and explains how two factors influences the extent of earthquake damage, with two name-specific examples. Award 6m for L3-5m and a brief description of the third factor with a logical conclusion for the stand taken.

Sample Essay

I disagree with the statement that ‘A high magnitude earthquake is the main cause of great damage.’ There are other factors such as level of preparedness and distance from epicentre that could also influence the damage of an earthquake event.

Earthquakes of higher magnitude are more likely to cause more extensive damage due to the higher amount of seismic energy being released. Higher death rates and a larger number of buildings are likely to collapse due to the intense vibration created by high magnitude earthquakes. For example, the magnitude 9.0 earthquake in 2011, Tohoku, Japan resulted in a death toll of 28,000 people. Furthermore, the high magnitude earthquake of the Tohoku earthquake happened offshore at the subduction zone, generating a tsunami of great height causing even greater and devastating destruction. Tsunamis can travel long distances, resulting in widespread damage to coastal areas.

However, earthquakes of lower magnitude could result in severe damage as well. Developing countries may have fewer resources and advance technology for monitoring, predicting and responding to an earthquake. This leads to the inability to ensure that those who are injured receive timely medical assistance. The inadequate resources may influence the readiness/ level of preparedness of people in knowing what to do and how to evacuate safely before getting injured when earthquake hits, resulting in casualty and damage. This was seen in the 2004 Indian Ocean earthquake and tsunami where victims were taken by surprise as there were no tsunami warning systems in the Indian Ocean to detect tsunamis or to warn the general population living around the ocean.

In conclusion, I disagree with the statement that high magnitude earthquake is the most damaging as level of preparedness also affects the damage of an earthquake. A third factor that could also influence the extent of an earthquake damage is the distance from the epicentre. If the focal depth of the earthquake is shallow and beneath the crust, damage could also be severe and widespread.

5 (a) Study Fig. 9, which shows the relative ages of the volcanoes (in million) in the Atlantic Ocean.

Ages of volcanoes (in million) in the Atlantic Ocean

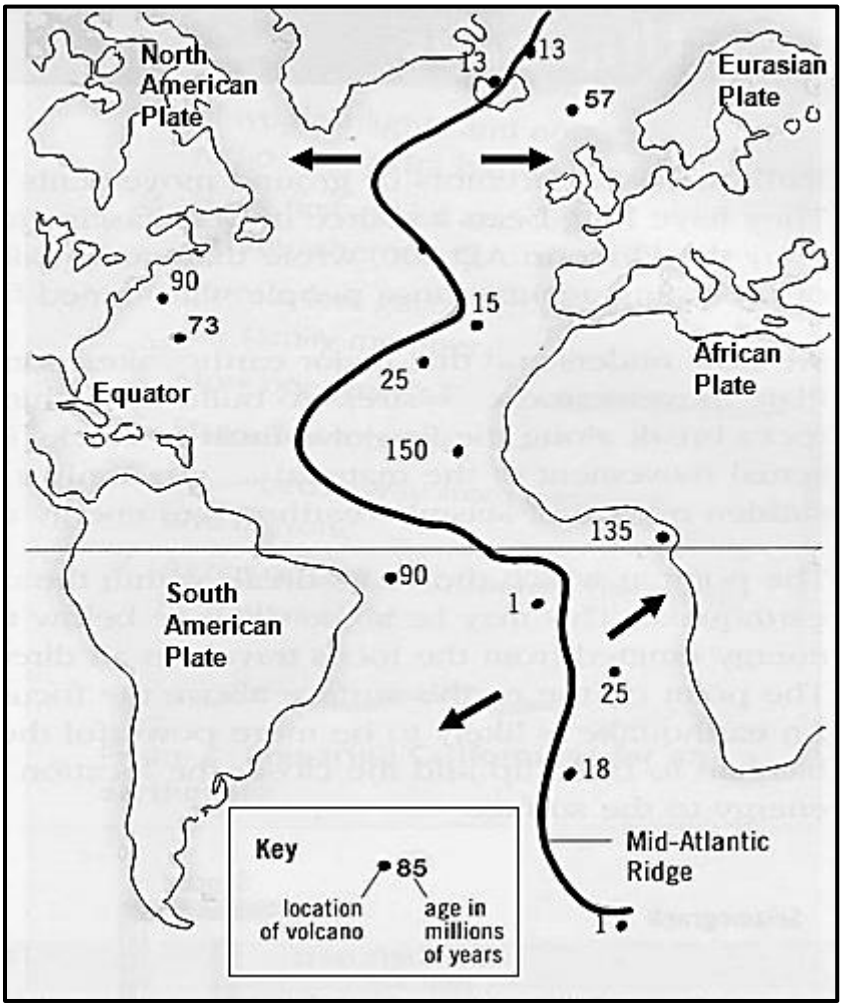


Fig. 9

(i) With reference to Fig. 9, describe the distribution of the different ages of volcanoes from the Mid-Atlantic Ridge. [4]

Award 1m for distribution description, 1m for anomaly and up to 2m for evidences. Reserve 1m for general pattern between age of volcanoes and distance from Mid-Atlantic Ridge.

- General pattern: The age of volcanoes tends to increase with growing distance from the Mid-Atlantic Ridge. Youngest volcanoes with the age of 1million are right next to the Mid-Atlantic Ridge.
- Evidence: Younger Volcanoes age 1 to 18 million years old are generally very close or right beside the Mid-Atlantic Ridge.
- Evidence: Volcanoes that are much older, such as those that are 57 million, 90 million and 135 million years old are found much farther away from Mid-Atlantic Ridge.
- Anomaly: However, volcanoes in the north, close to the Eurasian plate are close to the Mid-Atlantic Ridge even though it is 13 million years old as compared to the volcanoes which are 15 – 25 million years old which are further away.

(ii) Using evidence from Fig. 9, explain the tectonic movement in the Mid-Atlantic Ridge and its associated landforms. [5]

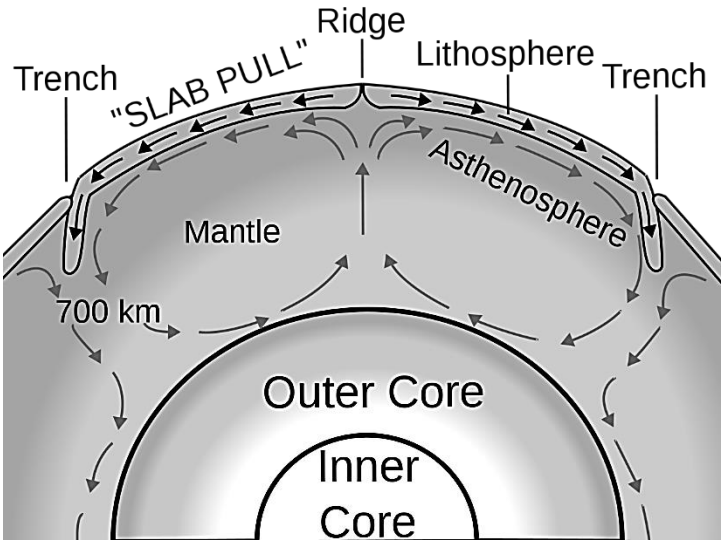
Award 1m for each point with specific plate and landform names from Fig. 9.

- There is a divergent movement of oceanic plates at a mid-oceanic plate boundary where the North American Plate and South American Plate move away from the Eurasian and African Plate.
- Tensional force resulted in a fault/fracture at the plate boundary, and magma rises from the mantle through the rift/vent/gap created at the plate boundary.
- The lava solidifies to form new oceanic crust or new sea floor along both sides of the plate boundary in a process known as the sea-floor spreading
- Over the years, multiple eruption extends the existing sea floors and at the same time, build up to form a chain of mountains called a mid-oceanic ridge beneath the ocean known as the Mid-Atlantic Ridge.
- Over time, magma builds up above the ocean to form volcanoes and volcanic islands

(b) Explain how and why plates move. You may draw an annotated diagram to help your explanation. [4]

Award 1m for each point below.
Reserve 3m for convection currents explanation and 1m for slab-pull force.
Award 1m max for diagram without annotation or explanation and 2m max if diagram has labels without annotations or explanations.

- Material in the mantle expands due to heating by the core and rises.
- Mantle material will spread itself out beneath the plates, dragging the plates to move along with it.
- Mantle material starts to cool and sink, pulling the plates along again.
- Slab-pull force occurs when a denser oceanic plate is forced beneath a less dense continental or oceanic plate, resulting in subduction.



(c) Study Fig. 5, which shows the structure of a volcano.

On Fig. 5, label the following features in the boxes provided.

- Secondary cone
- Crater
- Vent
- Magma Chamber

[4]

Award 1m for each label.

Structure of a volcano

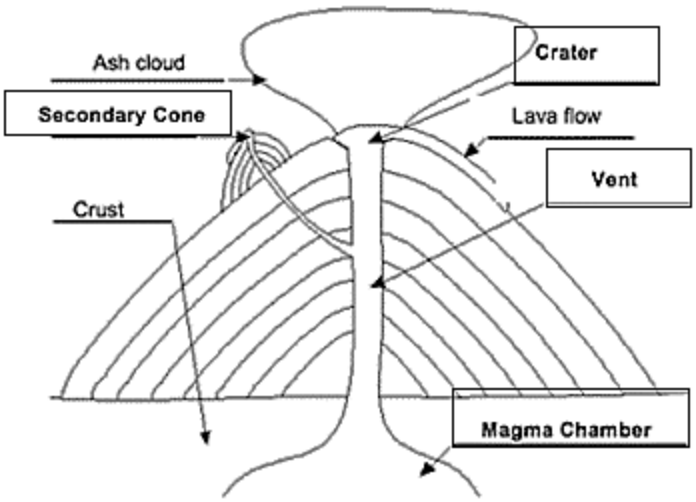


Fig. 10

(d) Explain how the viscosity of lava influences the characteristics of shield volcanoes. [2]

Award 1m for the following points. Accept other plausible responses.

- Low-silica lava has lower viscosity which travels over a longer distance and spreads over a wider area before cooling down and solidifying. This results in shield volcanoes having gentle sloping sides and broad summit.
- Low viscosity lava traps less gas and allows gas to escape easily, resulting in the release of pressure and gentler eruption.

(e) 'Volcanoes are only a risk to people living nearby.'

How far do you agree with this statement? Give examples to support your answer. [6]

Level 1 (0-2)	At this level answers will be generalised or with minimal support if any stand were given at all. Reasoning rather weak and expression may be unclear. A basic answer that has little development. Award 1m for a brief description of risks of living with volcanoes. Award 2m for a brief description of any specific risk of living with volcanoes.
Level 2 (3-4)	Disagreement or agreement will be supported by appropriate details. Or, both agreement and disagreement are considered, but support is patchy so that the answer is not full. Good reasoning and logic in parts of the answer with good expression in places. Award 3m for an explanation which addresses the question and explains one way volcanoes are a risk to people living nearby. Award 4m for an explanation which addresses the question and explains two ways volcanoes are a risk to people living nearby and/or further away with one place-specific example. Award a maximum of 3m for no use of examples in the answer, regardless of quality of explanation of roles.
Level 3 (5-6)	At this level answers will be comprehensive and supported by sound knowledge. Both agreement and disagreement are considered and well supported. Reasoning is clear and logical with good expression of language. Award 5m for an explanation which addresses the question and explains two ways volcanoes are a risk to people living nearby and/or further away with two place-specific examples, one of each. Award 6m for L3-5m and a brief description of third risk with a logical conclusion for the stand taken.

Sample Essay

I disagree with this statement that volcanoes are only a risk to people living nearby. Volcanic eruptions can also affect property and people who are far from the area.

Volcanoes are a risk to people living nearby because volcanic materials produced by volcanic eruptions such as lava and rock fragments can lead to widespread damage of property. Volcanic bombs of heated rocks can fall in areas surrounding the volcano and cause damage to property or even injury and death. These volcanic bombs can range in length from several centimetres to the size of cars. When these volcanic materials destroy property like houses and kill livestock, people in the area risk losing their homes and economic livelihood. One example is Mt Pinatubo when it erupted in 1991 leading to the displacement of more than 50,000 people whose houses, farmland and livelihood were buried and destroyed.

However, volcanic eruptions do not just affect people living nearby. Eruption usually ejects million of tons of volcanic ashes that are fine and could travel long distances and large area before descending. Volcanic ashes could bury people, roads and vehicles, along its way and engulf towns further away. Since volcanic ash particles ejected is highly damaging for engines, it could affect airline industries globally. For example, volcanic ash particles ejected during the 2010 eruptions of Eyjafjallajökull in Iceland resulted in more than 100,000 flight cancellations resulting in a total loss of US$1.7 billion to airline and tourism industries worldwide.

In conclusion, I disagree that volcanoes are only a risk to people living nearby. This is because people living close by or far away can also be affected by a volcanic eruption. Volcanic eruption could also have a global effect. For example, the 1991 Mt Pinatubo eruption ejected 20m tonnes of sulphur dioxide and millions of tonnes of ash, which resulted in the reduction in sunlight reaching earth's surface and decreased the global temperature for years.

2022 BV 4N HUM (GE) PRELIM
Table of Specifications

Qn	Part	Skills / Concepts	AO1+2 (marks)	AO1+3 (marks)
1	a	Suggest a hypothesis		1
	b (i)	Explain how systematic sampling is carried out.	2	
	b (ii)	Justify location for data collection.	3	
	b (iii)	Describe the features of a questionnaire and advantages of different question types		3
	c (i)	Complete the pie chart		2
	c (ii)	Evaluate data presentation methods	2	
Topic: Tourism GI			**7**	**6**
2	a	Suggest guiding question		1
	b	Support a hypothesis with evidence		3
	c	Complete a line graph		2
	d	Describe how to measure relative humidity	4	
	e	Reliability and accuracy of collecting temperature data	3	
Topic: Weather and Climate GI			**7**	**6**
Section A (no more than 6 parts) total			**13**	
3	a	Map of tourism areas in Kenya. Explain why tourists visit Kenya.		3
	b	Pie chart on pilgrimage tourism		3
	c	Roles of various groups in taking care of tourist areas	6	
Topic: Tourism			**6**	**6**
Section B (no more than 3 parts) total			**12**	
4	a	Difference between tectonic and climate-related hazards	2	
	b (i)	Label pressure systems and wind directions on map		4
	b (ii)	Explain why there will be heavy rainfall in India from Jun to Sep		4
	c	Explain the impact of climate change on Singapore.		5
	d	Draw an annotated diagram to explain the formation of rift valley and block mountain	4	
	e	A high magnitude earthquake is the main cause of great damage. How far do you agree?	6	
Topic: Weather & Climate and Plate Tectonics			**12**	**13**
5	a (i)	Describe the distribution of ages of volcanoes		4
	a (ii)	Explain the process of seafloor spreading and its associated landforms		5
	b	Explain how and why plates move.	4	
	c	Label the structure of volcano: Secondary cone, Crater, Vent, Magma Chamber		4
	d	Explain how the viscosity of lava influences the characteristics of shield volcanoes.	2	
	e	Volcanoes are only a risk to people living nearby. How far do you agree?	6	
Topic: Plate Tectonics			**12**	**13**
			25	**25**
Section C (no more than 6 parts) total			**25**	
Paper total			**50**	

AO1: Knowledge
AO2: Comprehension and Understanding
AO3: Interpreting and Analyzing Data