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ANGLICAN HIGH SCHOOL MID-YEAR EXAMINATION 2015

GEOGRAPHY

2236/01

Paper 1

7 May 2015

Secondary 4

1 hour 40 minutes

Additional Materials: 5 sheets of writing paper

READ THESE INSTRUCTIONS FIRST

Write your index number and name on all the work you hand in.

Write in dark blue or black pen on both sides of the paper.

You may use an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, glue or correction fluid.

Section A

Answer Question 1.

Section B

Answer **one** question. Choose either Question 2 or Question 3.

Write all answers on the writing paper provided.

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.

At the end of the examination, fasten all your work securely together.

Detach the cover page and Insert, and attach them to your answer sheets.

Hand in the question paper, Section A and Section B separately.

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

Name:			
Class:		Index No:	
Section A			25 marks
Section B Qn. No: ()			25 marks
TOTAL:			50 marks

Parent's Name:	
Parent's Signature:	

Date:	
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This document consists of **10** printed pages.

Section A

This question is compulsory.

- 1** Students in Eastbourne, Eastern Sussex of Great Britain were interested in conducting an investigation at a beach with the presence of groynes. They took a photograph of the beach as shown in Fig. 1. They wanted to study how wind direction influences the direction of sediment movement, and the possible relationship between wave frequency and the size of sediments that accumulate on each side of the groyne.



Fig. 1

- (a) With reference to Fig. 1, state two precautions that students would have to consider before going on the field investigation. [2]
- (b) Explain how the students could investigate whether wind direction affects the longshore drift. [4]

- (c) The students tested the hypothesis that 'The smaller the wave frequency, the larger the size of sediments on the beach.'

The students collected three sets of data for wave frequency at two locations on the beach at 1100 hours – Point A, the updrift side and Point B, the downdrift side (shown in Fig. 1). The results are shown in Table 1.

Location	1 st Reading	2 nd Reading	3 rd Reading	Average
Point A	6	4	5	5
Point B	8	7	9	8

Table 1

They also collected samples of sediments at the two points – Point A and Point B.

Distance from low water mark (m)	Point A Size of sediment (mm)	Point B Size of sediment (mm)
2	2 mm	0.5 mm
4	3 mm	1 mm
6	5 mm	3 mm
8	8 mm	4 mm
10	10 mm	6 mm

Table 2

They referred to Table 3 to determine the type of sediments they have collected in Table 2.

Sediment type	Sediment size
Fine sand	0.125 mm to 0.25 mm
Medium sand	0.25 mm to 0.5 mm
Coarse sand	0.5 mm to 1 mm
Pebble	2 mm to 64 mm

Table 3

- (i) Describe one method the students could use to present the information shown on Table 2. [2]
- (ii) From studying the data in Table 1 and 2, what conclusions might the students draw about the relationship between wave frequency and size of sediments on the beach? [3]
- (iii) What factors might affect the validity of the conclusion made in (c) (ii)? [2]

- (d) Some of the students extended the investigation done at the beach by testing the hypothesis that 'The presence of groynes has an impact on the number of visitors to the beach.'

First, the students carried out a questionnaire near some shops along the beach. They interviewed 50 visitors to the beach. The questionnaire used is shown in Fig. 2. The results of the questionnaire conducted are shown in Table 5.

Tourist Attraction Questionnaire

Dear Sir or Madam! Good morning/afternoon and welcome to Eastbourne. We kindly ask you to participate in a survey which will help us understand whether the presence of groynes has impacts on the number of visitors to the beach. The interview will take about 5 minutes.

1. How did you arrive to this beach? (Mark the appropriate answer.)

- By car.
- By bus.
- By train.

2. Why did you choose to visit this beach? (Mark the appropriate answer.)

- Beautiful scenery
- Cleanliness
- Presence of shops near the beach
- A good place to swim

3. What activities did you do at the beach?

- Have a meal at the restaurants nearby
- Take a walk
- Swim
- Have a picnic

4. 'The presence of groynes does not have any impact on my experience at the beach.' Do you agree with the statement? (Mark the appropriate answer.)

- Yes
- No

Fig. 2

1. How did you arrive to this beach?	
A. By car.	40
B. By bus.	10
C. By train.	0
2. Why did you choose to visit this beach?	
A. Beautiful scenery	5
B. Cleanliness	5
C. Presence of shops and restaurants near the beach	40
D. A good place to swim	0
3. What activities did you do at the beach?	
A. Have a meal at the restaurants nearby	45
B. Take a walk	5
C. Swim	0
D. Have a picnic	0
4. 'The presence of groynes does not have any impact on my experience at the beach.' Do you agree with the statement?	
A. Yes	45
B. No	5

Table 4

- (i) Suggest two ways how the questionnaire in Fig. 2 could be improved. [2]
- (ii) Explain the advantages of using the type of questionnaire shown on Fig. 2. [2]

The students also conducted a pedestrian count survey at one of the entrances of the beach. The results of the pedestrian count survey are shown in Table 5.

10.00 – 10.15am	12.30-12.45pm	4.00 – 4.15pm
10	45	5

Table 5

They then conducted a pedestrian count survey at a nearby beach without the presence of groynes. The results of the survey are shown in Table 6.

10.00 – 10.15am	12.30-12.45pm	4.00 – 4.15pm
45	50	85

Table 6

- (e) Explain how the students might conduct the pedestrian count survey at the beach with the presence of groynes. [4]
- (f) Based on the data collected in Tables 4, 5 and 6, what conclusions might the students draw about the impact of the presence of groynes on the number of visitors to the beach? Support your answer with reference to the data collected. [3]
- (g) On the whole, is the overall impression of the presence of groynes at the beach positive or negative to visitors? [1]

Section B

Answer **one** question from this section.

- 2 (a) Fig. 3 shows the international and domestic tourism receipts earned by Britain in 2007 and 2012.

Visitor type	2007 (\$m)	2012 (\$m)	% change
International	1,561	1,101.8	-29.4
Domestic overnight	4,180	4,342.2	3.9
Domestic day	908	931.5	2.6
Total	6,648.9	6,375.5	-4.1

Source: TRA regional profiles 2010-11, TRA 2012, Deloitte Access Economics.

Fig. 3

- (i) With reference to Fig3, compare the importance of domestic tourism and international tourism as a source of tourism receipts in Britain. [3]
- (ii) Explain why there has been an increase in niche tourism and long-haul destinations. [5]
- (b) Study Fig. 4, which shows a stretch of coastline along the Gower Peninsula in Wales, England.



Fig. 4

- (i) Describe the coastline along Gower Peninsula shown in Fig. 4 and explain why tourists might be attracted to this coastal location. [4]

(ii) With reference to Fig. 4, explain how feature 'A' may have been formed. [5]

(c) The only way to manage the negative impacts on the coastal areas is to limit damaging activities.

How far do you agree?

Support your answer with examples. [8]

- 3 (a) Fig. 5 shows an excerpt of an internet article taken from the Forbes website. Forbes is an internationally famous American business magazine.

TECH 12/14/2012 @ 1:12AM | 11,259 views

The Impact (Economic and Otherwise) of Lord of the Rings/The Hobbit on New Zealand

+ Comment Now + Follow Comments



Ever since 2001, many of us have come to recognize New Zealand as “the place where *Lord of the Rings* and *The Hobbit*, was filmed.” Now even more people know it as “the place where I took my vacation.”

According to the general manager of Western long haul markets for [Tourism New Zealand](#), Gregg Anderson, “We’ve seen a 50% increase in arrivals to New Zealand since *Lord of the Rings*.” The first film in the trilogy, *Lord of the Rings: The Fellowship of the Ring*, was released in 2001.

Fig. 5

- (i) With reference to Fig. 5, describe the type of tourism that has increased tourist arrivals in New Zealand. [3]
- (ii) Suggest how media reports shown in Fig. 5 and the government agency that created the corporate website ‘Tourism New Zealand’, might help to promote tourism in New Zealand. [4]

- (b) Study Fig. 6, which shows an itinerary of a trip to New Zealand created by a tour agent known as Eco Adventures. The tour is only open to 15 tourists from any country in the world. The tourists would book a place in the tour online.

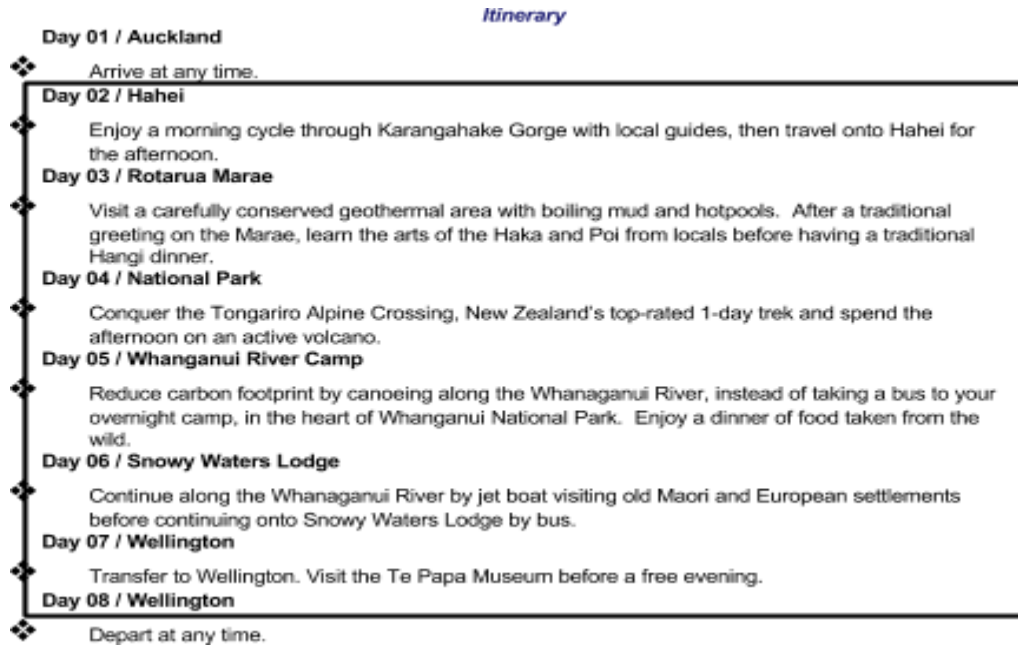


Fig. 6

- (i) Suggest why the tour shown in Fig. 6 can be considered as a form of niche tourism and explain how it might be sustainable. [6]
- (ii) Explain why there has been a growth in niche tourism over the years. [4]
- (c) The economic benefits of tourism definitely outweigh its environmental costs.

How far do you agree?

Support your answer with examples.

[8]

The End

Setters: Mrs Tan Lai Yin & Ms Nuha Yumn

Copyright Acknowledgements:

Fig. 1: http://s0.geograph.org.uk/geophotos/01/85/88/1858823_e83d8d7a.jpg

Fig. 3: <http://www.visitbritain.org/insightsandstatistics/inboundvisitorstatistics/latestdata/index.aspx>

Fig. 4: <http://upload.wikimedia.org/wikipedia/commons/e/e0/ThreeCliffsBay.jos.500pix.jpg>

Fig. 5:

<http://www.forbes.com/sites/carolpinchefskey/2012/12/14/the-impact-economic-and-otherwise-of-lord-of-the-ringsthe-hobbit-on-new-zealand/>

Fig. 6: adapted from <http://www.adventures.com.sg/>



ANGLICAN HIGH SCHOOL MID-YEAR EXAMINATION 2015

GEOGRAPHY**2236/01**

Paper 1

7 May 2015

Secondary 4

1 hour 40 minutes

Additional Materials: 5 sheets of writing paper

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Answer Question 1.

Section BAnswer **one** question. Choose either Question 2 or Question 3.

Write all answers on the writing paper provided.

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Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.

At the end of the examination, fasten all your work securely together.

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Section A			25 marks
Section B Qn. No: ()			25 marks
TOTAL:			50 marks

Parent's Name:	
Parent's Signature:	

Date:	
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This document consists of **10** printed pages.

[Turn over

Section A

This question is compulsory.

- 1** Students in Eastbourne, Eastern Sussex of Great Britain were interested in conducting an investigation at a beach with the presence of groynes. They took a photograph of the beach as shown in Fig. 1. They wanted to study how wind direction influences the direction of sediment movement, and the possible relationship between wave frequency and the size of sediments that accumulate on each side of the groyne.



Fig. 1

- (a)** With reference to Fig. 1, state two precautions that students would have to consider before going on the field investigation. [2]

1m for each of the following point:

- Physical conditions of the fieldwork site – ensure that the areas for investigation are accessible by checking on maps prior to the field investigation
- Weather conditions during data collection – ensure that they find out weather conditions for the day as unusual weather conditions could skew data collected
- Tide conditions during data collection – students must ensure that tides are low as high tides may cause the groynes not to be visible to visitors
- Tide conditions during data collection – ensure safety during high tides
- **Any plausible answer that has to do with physical conditions relevant to the photograph**

(b) Explain how the students could investigate whether wind direction affects the longshore drift. [4]

1m for each of the following:

- Use a **wind vane to find the direction** of the wind. Record the direction of the wind.
- Near the water's edge, stick the first pole into the sand. At this spot, **throw a buoyant object such as an orange** one metre away from the water's edge.
- **Observe the pattern of travelling path** of the oranges for at least 10 mins and stick a second pole into the sand where the oranges finally land.
- **Measure the distance** travelled.
- **Compare the direction the oranges travelled and the wind direction** to suggest a relationship.

(c) The students tested the hypothesis that 'The smaller the wave frequency, the larger the size of sediments on the beach.'

The students collected three sets of data for wave frequency at two locations on the beach at 1100 hours – Point A, the updrift side and Point B, the downdrift side (shown in Fig. 1). The results are shown in Table 1.

Location	1 st Reading	2 nd Reading	3 rd Reading	Average
Point A	6	4	5	5
Point B	8	7	9	8

Table 1

They also collected samples of sediments at the two points – Point A and Point B.

Distance from low water mark (m)	Point A Size of sediment (mm)	Point B Size of sediment (mm)
2	2 mm	0.5 mm
4	3 mm	1 mm
6	5 mm	3 mm
8	8 mm	4 mm
10	10 mm	6 mm

Table 2

They referred to Table 3 to determine the type of sediments they have collected in Table 2.

Sediment type	Sediment size
Fine sand	0.125 mm to 0.25 mm
Medium sand	0.25 mm to 0.5 mm
Coarse sand	0.5 mm to 1 mm
Pebble	2 mm to 64 mm

Table 3

- (i) Describe one method the students could use to present the information shown on Table 2. [2]

1m for each of the following point:

- The students could present the information on a **comparative bar chart/ line chart**
 - The x-axis would be the distance from the low water mark while the y-axis would be size of sediment.
 - **Accept comparative line graph too.**
- (ii) From studying the data in Table 1 and 2, what conclusions might the students draw about the relationship between wave frequency and size of sediments on the beach? [3]

1m for stating hypothesis or conclusion.

1m for comparison of wave frequency.

1m for comparison of sediment size.

- **The hypothesis is true.** The smaller the wave frequency, the larger the size of sediments.
 - At Point A, average **wave frequency is lower** than Point B by 3 waves, but all of the **sediments collected at Point A are pebbles** (which are above 2mm wide).
 - However, at Point B, average **wave frequency is higher**, and there was a mix of **coarse sand and smaller pebbles** collected.
- (iii) What factors might affect the validity of the conclusion made in (c) (ii)? [2]

1m for each of the following point:

- **The sampling method** – the students used systematic sampling for sediment sampling. This may have led to over or under representation of a particular point or location.
 - **Scope of investigation** – the students only studied one point or location in the entire beach / they only studied one beach with groynes.
 - **Frequency of data collection** – students only collected 3 sets of data for wave frequency at 11 am. This might have affected validity as data would differ or there might be disparity in data over other times of the day (e.g. during high tide).
- (d) Some of the students extended the investigation done at the beach by testing the hypothesis that ‘The presence of groynes has an impact on the number of visitors to the beach.’

First, the students carried out a questionnaire near some shops along the beach. They interviewed 50 visitors to the beach. The questionnaire used is shown in Fig. 2. The results of the questionnaire conducted are shown in Table 5.

Tourist Attraction Questionnaire

Dear Sir or Madam! Good morning/afternoon and welcome to Eastbourne. We kindly ask you to participate in a survey which will help us understand whether the presence of groynes has impacts on the number of visitors to the beach. The interview will take about 5 minutes.

1. How did you arrive to this beach? (Mark the appropriate answer.)

- By car.
- By bus.
- By train.

2. Why did you choose to visit this beach? (Mark the appropriate answer.)

- Beautiful scenery
- Cleanliness
- Presence of shops near the beach
- A good place to swim

3. What activities did you do at the beach?

- Have a meal at the restaurants nearby
- Take a walk
- Swim
- Have a picnic

4. 'The presence of groynes does not have any impact on my experience at the beach.' Do you agree with the statement? (Mark the appropriate answer.)

- Yes
- No

Fig. 2

1. How did you arrive to this beach?	
A. By car.	40
B. By bus.	10
C. By train.	0
2. Why did you choose to visit this beach?	
A. Beautiful scenery	5
B. Cleanliness	5
C. Presence of shops and restaurants near the beach	40
D. A good place to swim	0
3. What activities did you do at the beach?	
A. Have a meal at the restaurants nearby	45
B. Take a walk	5
C. Swim	0
D. Have a picnic	0
4. 'The presence of groynes does not have any impact on my experience at the beach.' Do you agree with the statement?	
A. Yes	45
B. No	5

Table 4

(i) Suggest two ways how the questionnaire in Fig. 2 could be improved. [2]

Any two of the following points (1m for each point):

- Have a combination of open and closed-ended questions instead of just closed-ended questions
- Include more questions about how the presence of groynes affects the impact of the visitor's experience at the beach

- Allow visitors to select more than one option for each question in the survey
- Provide more options for the questions or allow visitors to answer with an 'others' option
- **Any other plausible points**

(ii) Explain the advantages of using the type of questionnaire shown on Fig. 2. [2]

Any two of the following points (1m for each point):

- Large amounts of information or data can be collected in a shorter amount of time
- Allow students to speak with or interview with a larger number of people
- Results in the questionnaire can usually be quickly and easily quantified
- Can easily use data to do comparisons once the data have been presented
- **Any other plausible points**

The students also conducted a pedestrian count survey at one of the entrances of the beach. The results of the pedestrian count survey are shown in Table 5.

10.00 – 10.15am	12.30-12.45pm	4.00 – 4.15pm
10	45	5

Table 5

They then conducted a pedestrian count survey at a nearby beach without the presence of groynes. The results of the survey are shown in Table 6.

10.00 – 10.15am	12.30-12.45pm	4.00 – 4.15pm
45	50	85

Table 6

(e) Explain how the students might conduct the pedestrian count survey at the beach with the presence of groynes. [4]

1m for each of the following point:

- **WHERE:** Stand at one of the entrances to the beach.
- **WHEN:** Collected data at the same location at the three time periods, 10am, 12.30pm and 4pm over a duration of 15 minutes at each time.
- **HOW:** Use either the pocket tally counter or the traditional tally method to assist with counting.
- **HOW:** Ensure that the same person does the counting at each timing.

- **HOW:** Use random sampling. The students collected data over random timings throughout the day.

(f) Based on the data collected in Tables 4, 5 and 6, what conclusions might the students draw about the impact of the presence of groynes on the number of visitors to the beach? Support your answer with reference to the data collected. [3]

1m minimum for conclusion

1m minimum for evidence to support

- **Conclusion:** The presence of groynes causes the low number of visitors/ does not attract visitors to the beach
- **Evidence:** 1m – A majority of the visitors (80%) to the beach with the groynes visit the area not for the beach but for the shops and restaurants.
 - o 1m – This suggests the high influx of visitors to the beach during lunch time at 12.30pm (45 visitors) as compared to other timings (5 to 10 visitors at other times)
- **Evidence:** 1m – A larger number of people prefer to visit the beach without groynes (180 visitors) as opposed to 60 visitors to the beach with groynes.

(g) On the whole, is the overall impression of the presence of groynes at the beach positive or negative to visitors? [1]

- The presence of groynes at the beach has a **negative** impression to visitors.

No other answers accepted.

Section B

Answer **one** question from this section.

- 2 (a) Fig. 3 shows the international and domestic tourism receipts earned by Britain in 2007 and 2012.

Visitor type	2007 (\$m)	2012 (\$m)	% change
International	1,561	1,101.8	-29.4
Domestic overnight	4,180	4,342.2	3.9
Domestic day	908	931.5	2.6
Total	6,648.9	6,375.5	-4.1

Source: TRA regional profiles 2010-11, TRA 2012, Deloitte Access Economics.

Fig. 3

- (i) With reference to Fig. 3, compare the importance of domestic tourism and international tourism as a source of tourism receipts in Britain. [3]

1m for each comparison.

1m for data to support comparison.

Accept the following points:

- Generally, the total domestic tourism receipts from both overnight and day visitors are **slightly more than three times greater** than international tourism receipts. This shows that domestic tourism receipts are more important in contributing to tourism receipts in Britain.
 - o The total domestic tourism receipts in a country in 2007 are \$3,527 million more than international tourism receipts. / In 2012, total domestic tourism receipts are \$4,171.9 million more than international tourism receipts.
- Domestic tourism receipts have also shown an increasing trend from 2007 to 2012 for both domestic overnight and domestic day. On the other hand, international tourism receipts show a decreasing trend instead. This shows that domestic tourism receipts are becoming increasingly a larger contributor to tourism receipts in Britain.

- (ii) Explain why there has been an increase in niche tourism and long-haul destinations. [5]

Reserve at least 2m for explanation in niche tourism and at least 2m for explanation of long-haul destinations.

Award 1m for definition of niche tourism –

- Niche tourism refers to special-interest tourism based on a particular area, interest or activity.
- It can be done by independent travelers or combined with package tours.

There is an increase in niche tourism because:

- **growth in income:** a growth in disposable income, which is the amount left to an individual after taxes have been paid, has led to an increase in niche tourism.
- A growth in income has allowed people to spend more on goods, services or activities. This allows people to spend more on special-interest activities that could be more costly.
- For example, special interests such as whale-watching in Hawaii and bungee jumps in New Zealand may be costly for travelers.
- **ease of access to information:** developments in information technology have also made information more readily available and accessible. This ease of access to information has helped promote air travel and global tourism.
- Travellers now can have better access to information at their destination and places to see
- This gives tourists more options and control, and hence allow tourists to plan holidays based on activities or places that they are interested in only (that may not be provided for in mass tours)
- **media:** furthermore, media reports allow tourists to be more aware of destinations that they have previously not considered.
- Niche tourism such as visits to Antarctica, treks in the Himalayas Mountains, homestays with indigenous groups have also grown in popularity because of favorable media reports.

Award 1m for definition of long-haul destinations –

- Long-haul destinations refer to destinations that are a long distance away from the tourist's home country, usually reachable by a flight of generally five hours or more.

There is an increase in long-haul destinations because:

- **Better and affordable transport:** developments in technology have led to great improvements in safety, shorter travelling time and lower travelling costs for the average person.
- The improvement of the jet aircraft has allowed faster travelling time and allowed for direct flights to far destinations without stopovers.
- This has encouraged tourists to travel internationally and more frequently as it would take a shorter time and also have affordable tickets.
- **More air routes and agreements:** furthermore, the increased numbers of air routes and agreements have made various parts of the world more accessible. Countries now are better connected as a result of these air routes.
- **Ease of access to information:** travelers now can also buy their own tickets online without going through travel agents. This makes prices for air tickets to long-haul destinations more competitive and affordable.
- Surveillance, electronic checks and other safety controls make tourists feel safer and more confident about travelling further distances.

- (b) Study Fig. 4, which shows a stretch of coastline along the Gower Peninsula in Wales, England.



Fig. 4

- (i) Describe the coastline along Gower Peninsula shown in Fig. 4 and explain why tourists might be attracted to this coastal location. [4]

Reserve 2 marks for description of coastline and 2 marks to explain why tourists may be attracted to the location.

Description of coastline (1m for each of the following point):

- It is an irregular coastline...
- ...with protruding headlands and curved, indented parts known as bays
- There are sandy beaches located at the bay areas
- There is a small outcropping of rocks at the shoreline/low water mark

Explanation of why tourists may be attracted to the location (1m for each of the following point):

- Tourists may be attracted to it for its scenic beauty/beautiful scenery/honeypot tourism.
- They may be attracted to the interesting rock features/ outcropping of rocks along the coastline.
- They may be attracted to the sandy beaches along at the bays as these places provide opportunities for swimming and other beach activities.

(ii) With reference to Fig. 4, explain how feature 'A' may have been formed. [5]

1m for each of the following points:

- Within headlands, some rocks may be less resistant to erosion than other rocks. This part of the headland will be eroded more quickly, especially by hydraulic action and corrosion.
- Waves attack lines of weaknesses (e.g. joints & faults) at the base of headlands and undercut it.
- The continuous action of waves forms a cave at the area that is hollowed by wave action. Caves may develop on each side of the headland.
- Erosion may eventually join caves together, leaving a bridge of rock known as arch above the cave opening.
- After a period of time, the roof of the arch may collapse to form landform A, a stack, which is a pillar of rock in the sea left behind after an arch collapses.

(c) The only way to manage the negative impacts on the coastal areas is to limit damaging activities.

How far do you agree?

Support your answer with examples.

[8]

Marks	Descriptors	Examples
Level 3 (7 – 8 marks)	At least limiting damaging activities and one other strategy required; A clear stand is necessary and evaluation must be done for each measure; There is discussion of the negative impacts on coastal areas; Only two points needed for 7 to 8 marks. Details • There is a clear definition/description of the strategy discussed. • There is a statement on the purpose of the strategy. • There is a clear explanation of how the strategy is able to minimize negative impacts on	Details Damaging activities are activities that interrupt the functioning of natural systems. Some of these activities include blasting coral reefs to create a channel for boats, clearing mangroves to develop fish farms, dumping waste into coastal areas or into seas, and constructing facilities such as docks and marinas that replace the natural features of the coast. These activities lead to negative impacts such as reduced biodiversity, destruction of coral reef habitats and pollution of water. As banning these damaging activities might be costly and inefficient, many national and local government bodies instead try to limit these activities. This is done through management that aligns the needs and demands of people together with the nature of the coastal environment. This would help to manage the negative impacts of the damaging activities which are mainly caused by humans. Examples

	coastal areas (these negative impacts such as coastal erosion are also stated). Examples • There is clear, accurate description of how the strategy has been successfully used in a specific location. There is evidence of the success of the strategy given. • There is clear, accurate description of how the strategy has been limited in an occasion in a specific place. There is evidence of the limitation of the strategy at that time and place. Balance • There is discussion of how the strategy can successfully be used to manage the coastal environment • There is discussion of how the strategy is limited or may not be successful in certain locations or situations • There is thorough consideration of usefulness of strategy based on <i>more than two or all</i> of the following points either in body paragraphs or conclusion of essay: - o There is comparison of the possibility of implementation of the strategy in developed countries and less developed countries - o There is an assessment of reliability of the strategy – durability, short-term or long-term measure - o There is a discussion of cost-effectiveness of the strategy - o There is an evaluation of the scale of impact of the strategy on the coastal environment	One example of how damaging activities can be limited is through the management of sand dunes. Sand dunes, which are deposits of windblown sand from the foreshore zone stabilized by plants, were often trampled on by people visiting the beach in Port Philip. Dune vegetation was being destroyed and the sand dunes were left exposed to wind erosion. Houses behind the dunes were in danger of being partly buried by the large volume of sand blown by the wind. To allow the dunes to recover, authorities fenced off the dunes and built access paths to the beach. This decision allowed the coastal environment to recover. Evaluation The fences make the beach look less attractive and do not allow visitors and residents access to all parts of the beach. Not all damaging activities are easy to be limited as well, such as overfishing or anchoring of boats. It is a challenge to ensure that the activities are actually limited without reducing the number of tourists to the area. Other points accepted: Protect coastal resources – • Protecting coastal resources is a management strategy that aims to prevent resources from being exploited or depleted • An example of a coastal resource that needs to be protected is fish • Areas close to the coastline where around 90% of all marine fish are caught are vulnerable to overfishing • This occurs especially in the coral reef areas of Southeast Asia where destructive fishing methods of blasting and poison fishing are used • Zones can also be marked off to prevent commercial fishing • This is done through local management or establishment of a marine reserve • Marine reserves protect marine ecosystems which allows fish and endangered species to breed and thrive • E.g.: the Goat Island Marine Reserve in New Zealand is a zone marked off to prevent commercial fishing. • It is now an attraction because of its plentiful fish; there are up to 14 times more snappers within the reserve than outside it. This demonstrates the positive management impact of protecting coastal resources
Level 2 (4 – 6 marks)	At least limiting damaging activities and one other strategy required; A clear stand is necessary and evaluation must be done for each measure;	

	There is discussion of the negative impacts on coastal areas; Only two points needed for 4 – 6 marks; Scripts with only one point should be awarded less than 4 marks. Details • The definition of the strategy is discussed. • There is a statement on the purpose of the strategy. • There is a <i>brief</i> explanation of how the mitigation strategy is able to manage coastal environments. Examples • There is a <i>brief</i> description of how the strategy has been successfully used in a specific location. There is <i>no evidence or limited data</i> to support this claim. • There is <i>brief</i> description of how the strategy has been limited in an occasion in a specific place. There is <i>no evidence or limited data</i> to support this claim. Balance • There is discussion of how the strategy can successfully be used to limit damaging activities. Candidates may not make reference to the question (by explaining what the negative impacts are). • There is discussion of how the strategy is limited or may not be successful in certain locations or situations • There is <i>some</i> consideration of usefulness of strategy based on one or two criteria.	• On the other hand, establishment of marine reserves is often strongly opposed by local fishermen. • This is because the fishermen see their access to a valuable resource, and possibly a major source of food, being denied. • The potential long-term benefits of a marine reserve may not be significant to locals who can no longer fish in an area that has supported them for a long time Restrict developments in areas prone to natural hazards – • Natural hazards such as tsunamis can be disastrous to natural environments and human activities • E.g.: earthquake in Tohoku in March 2011 resulted in a tsunami of powerful sea waves that swamped large areas of coastal Japan • Despite the occurrence and unpredictability of natural hazards, people are still attracted to coasts. • This is because many of the coasts provide natural resources such as food and building materials • Coasts also provide a substantial range of built services such as docks, ports, housing and recreational facilities • However, residents and investors of these areas may have to spend more in construction and maintenance and will also need to be prepared for emergencies • Many national governments and local authorities have developed management policies to deal with the threat of natural hazards in coastal areas • They research on how severe or widespread the problem is, plan for it, then make and enforce laws • These include: • Retreat, or relocation of built structures away from areas prone to natural hazards • E.g.: in USA – Federal Emergency Management Agency (FEMA) steers development away from areas prone to flooding • Avoidance, which includes regulating development • Defence, such as nourishing beaches, building seawalls and planting coastal vegetation
Level 1 (1 – 3 marks)	1 strategy discussed. Details • There is a <i>brief</i> explanation of how the strategy is able to limit negative impacts.	

	• Does not state at all what the negative impacts are. Examples • No examples given • Only one example given to show success or limitation • Examples are merely stated, with no explanation or evidence Balance • There is discussion of how the strategy can successfully be used to reduce coastal erosion. However, these strategies are not thoroughly examined and generalized statements are made about them.	
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- 3 (a) Fig. 5 shows an excerpt of an internet article taken from the Forbes website. Forbes is an internationally famous American business magazine.



Fig. 5

- (i) With reference to Fig. 5, describe the type of tourism that has increased tourist arrivals in New Zealand. [3]

Reserve 1m for stating type of tourism and 2m for description of the type of tourism.

- Type of tourism: **film-induced tourism**
- Description:
 - o **Definition** – Film-induced tourism is when people travel to see locations featured in the films.
 - o People may want to travel to places which have been featured in films, which they may not have considered before watching the films.
 - o By visiting these places, tourists can understand how certain scenes of the film were filmed.
 - o For example, The Lord of the Rings movie has caused a 50 per cent increase in tourist arrivals in New Zealand. The tourists often visit the remains of the set of the Lord of the Rings in Matamata, New Zealand.

- (ii) Suggest how media reports shown in Fig. 5 and the government agency that created the corporate website ‘Tourism New Zealand’, might help to promote tourism in New Zealand. [4]

Reserve at least 1m for media reports and 1m for government agency.

Explanation of how media reports help to promote tourism in New Zealand:

- Media reports about a country or an area could influence the decisions of tourists to visit it. The term 'media' refers to the channels through which news and information are communicated to the public. It includes television, radio, newspapers and the Internet.
- The media report shown is a positive report that encourages tourists to visit as it advertises the popularity of New Zealand as a travel destination due to it being a movie site for The Lord of the Rings.
- As a result of media reports, tourists are now more aware of destinations that they have previously not considered.

Explanation of how government agencies help to promote tourism:

- Governments are often directly involved in planning, funding and building infrastructure projects linked to tourism, such as airports, roads and ports.
- They also play a major role in ensuring the safety and security of sites that the tourists frequently visit.
- They also monitor the number of tourist arrivals in the country, as seen in Fig. 5. Tourism New Zealand also keeps track of the tourist arrivals in the country and plans tourism promotion based on the statistics collected.
- Governments may also set up agencies that devise strategies to help promote tourism in their country. These strategies may include tourism marketing campaigns and promotional events.

- (b) Study Fig. 6, which shows an itinerary of a trip to New Zealand created by a tour agent known as Eco Adventures. The tour is only open to 15 tourists from any country in the world. The tourists would book a place in the tour online.

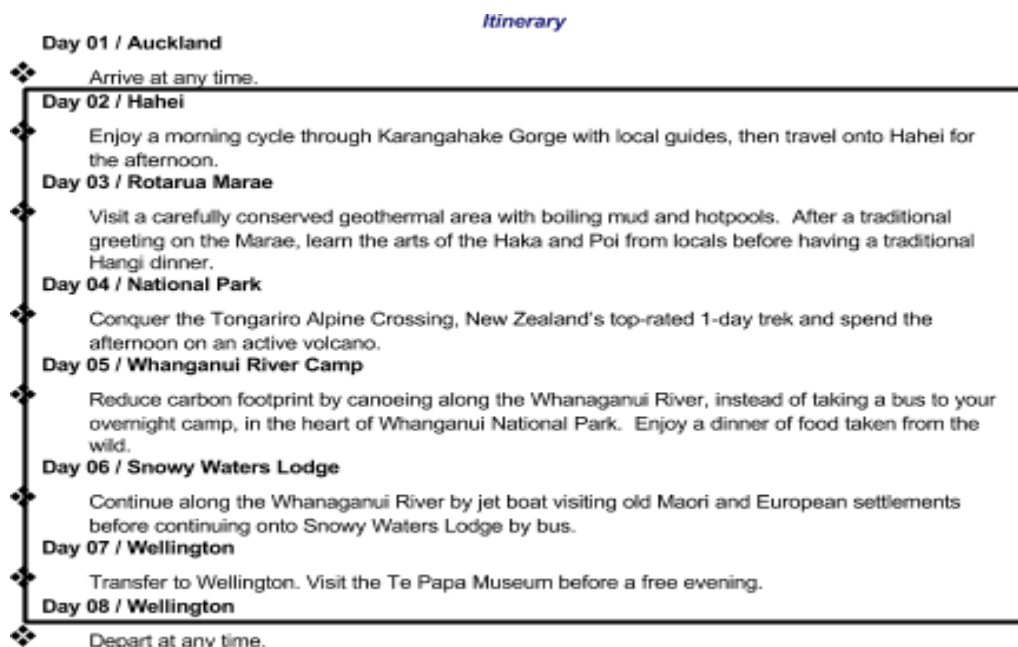


Fig. 6

- (i) Suggest why the tour shown in Fig. 6 can be considered as a form of niche tourism and explain how it might be sustainable. [6]

Reserve at least 2 marks for niche tourism part and 2 marks for how it might be sustainable.

Suggest why it can be considered as a form of niche tourism:

- Definition: Niche tourism refers to special-interest tourism based on a particular area, interest or activity.
- It can be done by independent travelers or combined with package tours.
- The tour is only open to a small group of 15 travellers.
- The activities in the tour mainly caters to travellers interested in nature and physical activities or thrilling activities such as cycling, trekking and canoeing.
- These activities are also special-interest activities where travellers could seek new destinations, activities and experiences.
- It is also a form of niche tourism as it includes eco-tourism principles. Eco-tourism is a form of niche tourism.
- For example, the tour gets tourists to reduce carbon footprint and also engage in services conducted by the Marae, who are locals.

Explain how it might be sustainable:

- **Definition of sustainable tourism** – a form of tourism organised in a way that allows it to continue without causing damage to the environment or without leaving negative impacts on the surrounding society and culture.
- In the process it should also address the needs of visitors, the industry and host communities.
- The tour is a sustainable form of tourism as it tries to reduce damage to the environment by reducing carbon footprint through canoeing along the Whanaganui River, instead of taking a bus to the overnight camp. This helps to slow down the rate of global warming.
- The tour also engages local guides, which helps bring employment and income to the locals. For example, the tourists can enjoy a morning cycle through Karangahake Gorge with local guides.

(ii) Explain why there has been a growth in niche tourism over the years. [4]

Award 1m for definition of niche tourism –

- Niche tourism refers to special-interest tourism based on a particular area, interest or activity.
- It can be done by independent travelers or combined with package tours.

There is an increase in niche tourism because:

- **growth in income:** a growth in disposable income, which is the amount left to an individual after taxes have been paid, has led to an increase in niche tourism.
- A growth in income has allowed people to spend more on goods, services or activities. This allows people to spend more on special-interest activities that could be more costly.
- For example, special interests such as whale-watching in Hawaii and bungee jumps in New Zealand may be costly for travelers.
- **ease of access to information:** developments in information technology have also made information more readily available and accessible. This ease of access to information has helped promote air travel and global tourism.

- Travellers now can have better access to information at their destination and places to see
- This gives tourists more options and control, and hence allow tourists to plan holidays based on activities or places that they are interested in only (that may not be provided for in mass tours)
- **media:** furthermore, media reports allow tourists to be more aware of destinations that they have previously not considered.
- Niche tourism such as visits to Antarctica, treks in the Himalayas Mountains, homestays with indigenous groups have also grown in popularity because of favorable media reports
- **Accept any other plausible answers.**

(c) The economic benefits of tourism definitely outweigh its environmental costs.

How far do you agree?

Support your answer with examples.

[8]

Marks	Descriptors	Examples
Level 3 (7 – 8 marks)	At least two economic benefits of tourism and two environmental costs required; A clear stand is necessary; 2 points for economic benefits and 2 environmental costs needed for 7 to 8 marks. Details • There is a clear definition/description of the benefit or cost. • There is a clear explanation of the benefit or cost. Examples • There is clear, accurate description of how the economic benefit of tourism. There is evidence of the economic benefit in a particular country. • There is clear, accurate description of the environmental cost of tourism. There is evidence of the impact in a particular place. Balance • There is discussion of the scale of impact of the	Details However, tourism does lead to many negative environmental impacts. One of these impacts is pollution and littering, which have become a major problem. Authorities sometimes fail to implement measures that would properly manage waste left behind by tourists. This can lead to degradation of such areas. Examples For example, tourists often dump plastic bottles, food packaging and old batteries overboard from cruise ships. This causes harbours, marinas as well as the ocean to be polluted. For instance, many islands in the Caribbean have limited space on land to treat waste from ships. As a result, solid and liquid waste is sometimes dumped into the Caribbean Sea by ships. Evaluation The economic benefits do outweigh the environmental costs of tourism. An increase tourism receipts allow for more funding for conservation projects of in particular, fragile environments that might be further harmed by tourism. Furthermore, these economic benefits include a growth in income for the locals as well, which will go a long way in providing a better standard of living for those in less developed countries. This will also

	economic benefits and the environmental costs. - There is thorough consideration of whether the economic benefits outweigh the environmental costs using <i>two or more</i> of the following criterion either in body paragraphs or conclusion of essay: - There is comparison of impacts in developed countries and less developed countries - There is an evaluation of the scale of impact - There is an evaluation on impacts based on a time-scale	motivate the locals to manage the tourist attractions sustainably so that they would not be further damaged by tourism. Other points accepted: Economic benefits - - Employment opportunities - E.g.: In 2011, the UNWTO estimated that the tourism industry employed over 235 million people worldwide. - This is roughly 6 to 8 percent of all the jobs in the world. - Growth in income - E.g.: individuals – fishermen on Pamilacan Island in the Philippines – fishermen are paid between US\$80 and US\$100 per boat for their service, which is a significant amount for an average Filipino fisherman - E.g.: national – In 2011, worldwide tourism receipts exceeded US\$1 trillion. - Increase in foreign exchange - E.g.: tourism is Fiji's largest foreign exchange earner. It makes up for between 20 and 25 per cent of the country's economy. - Infrastructure development - Sports venues and other infrastructure are built for major sporting events such as the Olympic Games and the World Cup. - In both the cities of Athens, Greece, and Beijing, China, underground rail systems were expanded to move large numbers of visitors during the Summer Olympic Games (held in Athens in 2004 and in Beijing in 2008). Environmental costs - - Increased congestion - In Rome, Italy, for example, many older walkways and narrow streets are filled with tourists - Vandalism
Level 2 (4 – 6 marks)	At least 3 points are given in total (with a mixture of economic benefits and environmental costs); A clear stand is necessary; 1 economic benefit and 1 environmental cost will attain maximum of 4 marks. Details - There is a brief definition/description of the benefit or cost. - There is a brief explanation of the benefit or cost. Examples - There is brief description of how the economic benefit of tourism. There is evidence of the economic benefit in a particular country but no exact elaboration or details about the case study. - There is clear, accurate description of the environmental cost of tourism. There is evidence of the impact in a particular	

	place but no exact elaboration or details about the case study. Balance • There is brief discussion of the scale of impact of the economic benefits and the environmental costs. • There is thorough consideration of whether the economic benefits outweigh the environmental costs using <i>one or more</i> of the following criterion either in body paragraphs or conclusion of essay: ◦ There is comparison of impacts in developed countries and less developed countries ◦ There is an evaluation of the scale of impact ◦ There is an evaluation on impacts based on a time-scale	▪ The thousands of stones and bricks of the Great Wall of China, which is visited by about 10 million tourists a year, are covered with graffiti. • Pollution and littering ▪ Many islands in the Caribbean have limited space on land to treat waste from ships. As a result, solid and liquid waste is sometimes dumped into the Caribbean Sea by ships. • Destruction of habitats ▪ Egypt's Red Sea coast has developed into a major diving and snorkeling destination for around 1.2 million visitors annually. Unfortunately, the habitats of coral reefs and exotic fish have been damaged by some swimmers collecting shells or corals as souvenirs, and by hotels and restaurants in the area dumping waste and sewage into the sea. • Increased carbon footprint ▪ The carbon footprint of a one-way economy class flight from Singapore to Kuala Lumpur, Malaysia is 30 kilogrammes of carbon dioxide per passenger.
Level 1 (1 – 3 marks)	1 strategy discussed. Details • There is a <i>brief</i> explanation of the benefits and costs of tourism. • Does not elaborate or does not state all the impacts required. Examples • No examples given OR • Only one example given OR • Examples are merely stated, with no explanation or evidence Balance • There is discussion of impacts of tourism. However, these impacts are not thoroughly examined and	

	generalized statements are made about them.	
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The End

Setters: Mrs Tan Lai Yin & Ms Nuha Yumn

Copyright Acknowledgements:

Fig. 1: http://s0.geograph.org.uk/geophotos/01/85/88/1858823_e83d8d7a.jpg

Fig. 3: <http://www.visitbritain.org/insightsandstatistics/inboundvisitorstatistics/latestdata/index.aspx>

Fig. 4: <http://upload.wikimedia.org/wikipedia/commons/e/e0/ThreeCliffsBay.jos.500pix.jpg>

Fig. 5:

[http://www.forbes.com/sites/carolpinchefsky/2012/12/14/the-impact-economic-and-otherwise-of-lord-of-the-ringsthe-hobbit-on-n
ew-zealand/](http://www.forbes.com/sites/carolpinchefsky/2012/12/14/the-impact-economic-and-otherwise-of-lord-of-the-ringsthe-hobbit-on-new-zealand/)

Fig. 6: adapted from <http://www.adventures.com.sg/>



ANGLICAN HIGH SCHOOL MID-YEAR EXAMINATION 2015

GEOGRAPHY

2236/02

Paper 2

30 April 2015

Secondary 4

1 hour 30 minutes

Additional Materials: 5 sheets of writing paper

READ THESE INSTRUCTIONS FIRST

Write your index number and name on all the work you hand in.
Write in dark blue or black pen on both sides of the paper.
You may use an HB pencil for any diagrams or graphs.
Do not use staples, paper clips, glue or correction fluid.

Section A

Answer **one** question. Choose either Question 1 or Question 2.

Section B

Answer Question 3.

Write all answers on the writing paper provided.
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.

At the end of the examination, fasten all your work securely together.

Detach the cover page and attach it to your answer sheets.

Hand in the question paper, Section A and Section B separately.

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

Name:			
Class:		Index No:	
Section A Qn. No: ()			25 marks
Section B			25 marks
TOTAL:			50 marks

Parent's Name:	
Parent's Signature	
Date:	

Section A

Answer **one** question from this section.

- 1 (a) Study Fig. 1A and Fig. 1B which shows rainfall and temperature of Singapore and Moscow (Russia).

Moscow: 55°N 37°E

Mean annual temperature = 5.0°C

Total annual precipitation = 688mm

Singapore: 1.3°N 103°E

Mean annual temperature = 26.9°C

Total annual precipitation = 2275mm

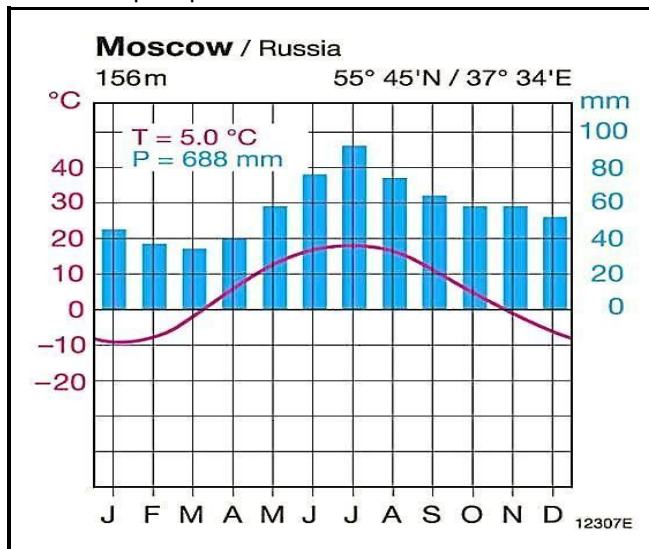


Fig. 1A

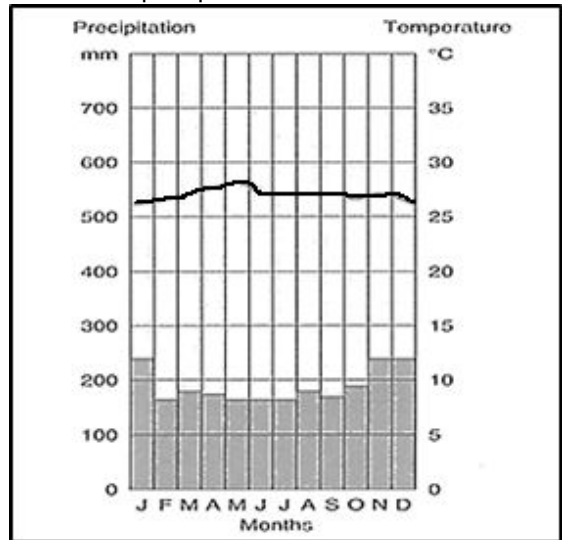


Fig. 1B

- (i) With reference to Fig. 1A and Fig. 1B, compare the rainfall and temperature of Moscow and Singapore. [5]
- (ii) Explain why Moscow has a lower mean annual temperature than Singapore. [3]

- (b) Study Fig. 2A and Fig. 2B which give information about Singapore's weather over a 24-hour period in July 2008.

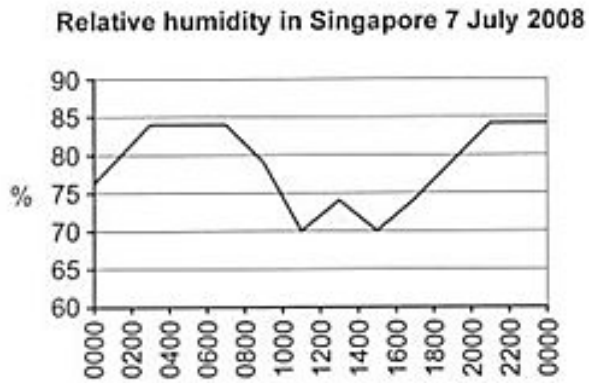


Fig. 2A

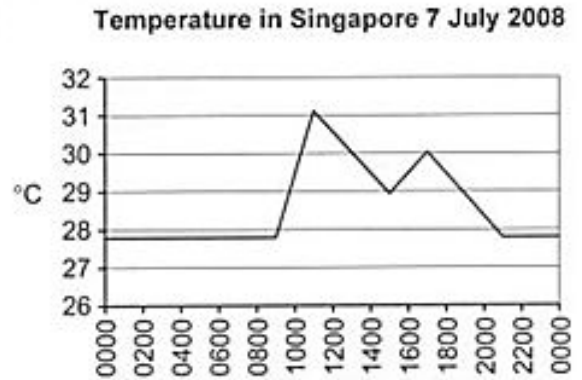


Fig. 2B

Using information from Fig. 2A and Fig. 2B, describe and explain the relationship between temperature and relative humidity. [4]

- (c) Why are land and sea breezes features of many coastal regions? [5]
- (d) 'National measures are more effective than international agreements in reducing the impact of climate change'. Do you agree with this statement? Explain your answer using examples. [8]

- 2 (a) Study Fig. 3, which shows the location of three cities, Kagoshima, Tokyo and Sapporo, temperature data and information about ocean currents.

Using information from Fig. 3, explain the factors that may affect the temperatures of these cities. [5]

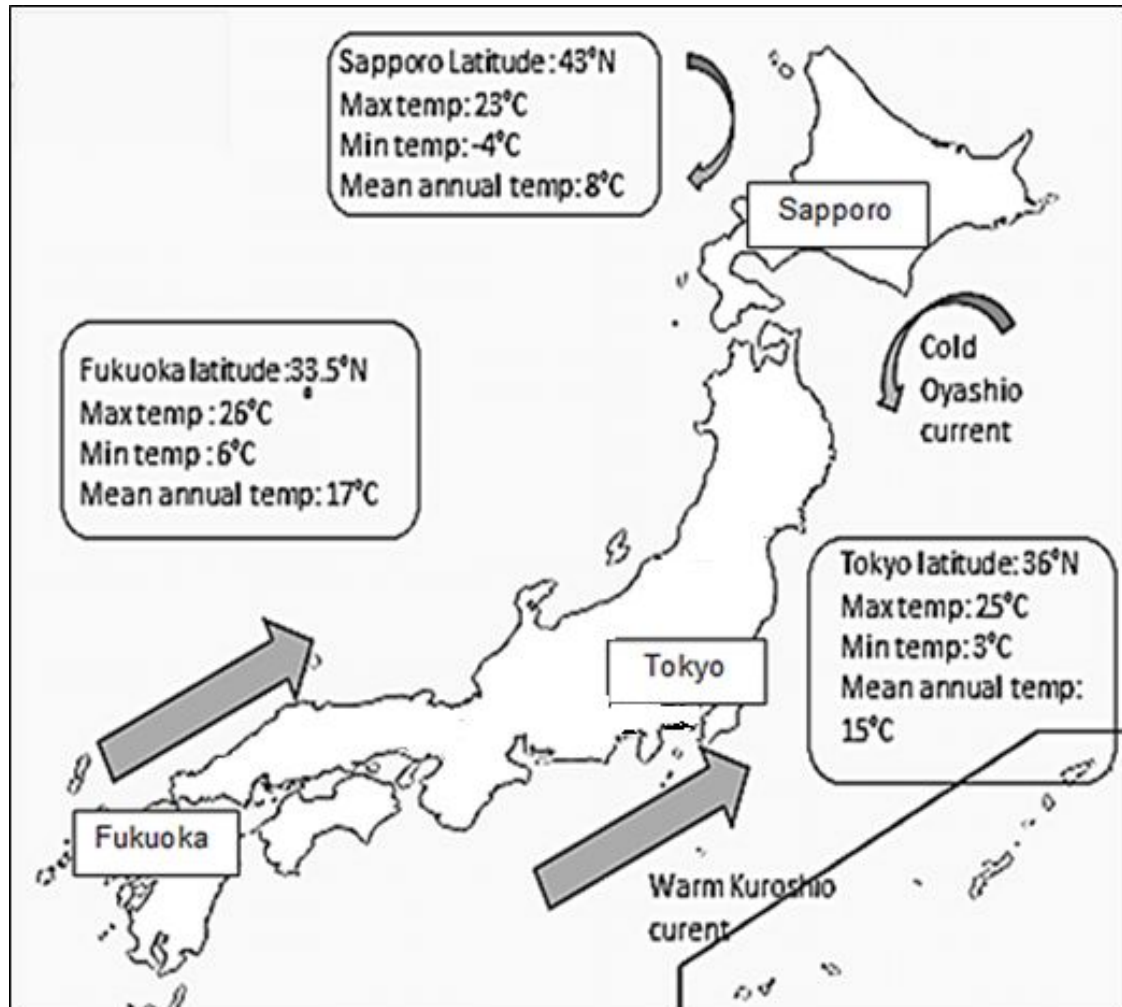


Fig. 3

- (b) Explain why convectional rain is a common feature in Singapore. [4]
- (c) Using examples, explain how an increase in average global temperatures could lead to the spread of infectious insect-borne diseases in tropical areas and areas with moderate temperatures. [3]

(d) Fig. 4 shows a section of the earth's crust.

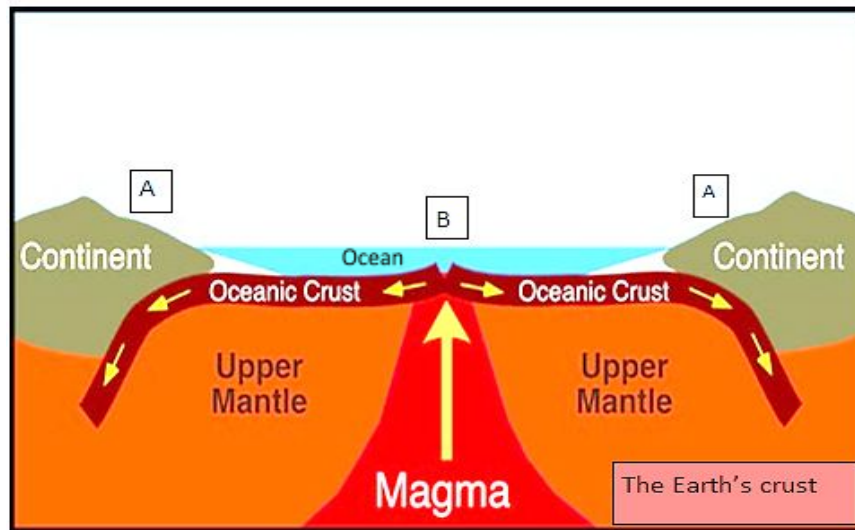


Fig. 4

Compare how volcanoes are formed at boundary A and boundary B in Fig. 4 [5]

(e) 'Mitigation measures to cope with the destructive effects of plate movements are more effective in developed countries than less developed countries.' To what extent is this true? Support your answer with evidence. [8]

Section B

This question is compulsory.

- 3 Study Fig. 5, which shows the statistics for amount of meat and seafood imported into Singapore over the years.

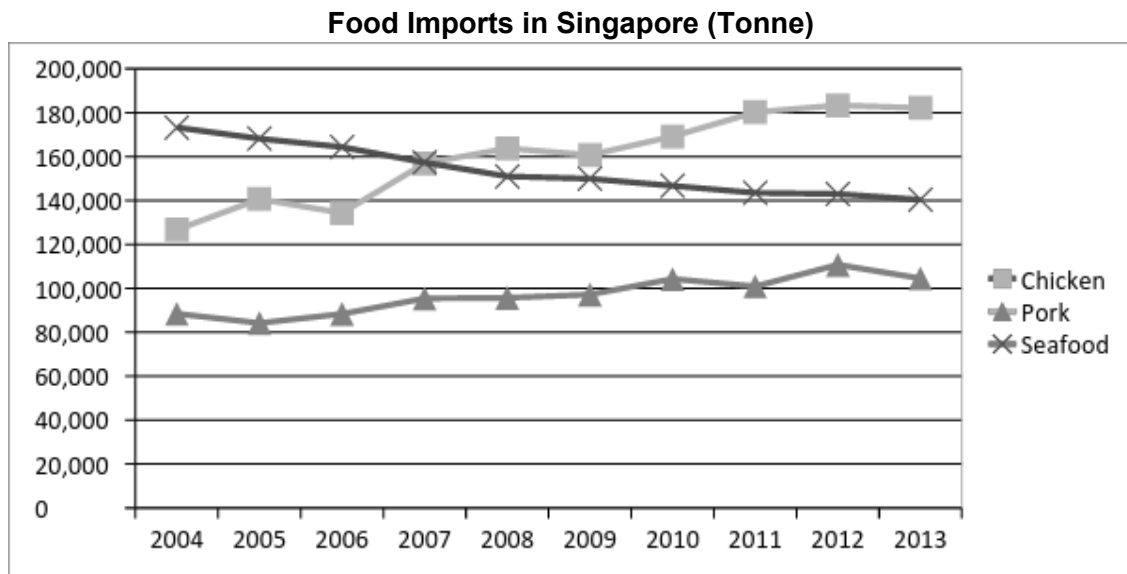


Fig. 5

- (a) With reference to Fig. 5, compare the trends in demand for chicken, pork and seafood in Singapore. [4]

- (b) Explain the reasons for the trends in demand for chicken and pork you have described in (a). [4]

- (c) Study Fig. 6, which is an infographic showing information about the food that is eaten in Singapore and where it comes from.



Fig. 6

- (i) Based on the information given in Fig. 6, suggest two possible reasons for a food shortage occurring in Singapore. [4]
- (ii) Explain how local farms in Singapore would be able to raise its 'self-sufficiency for leafy vegetables by 10%'. [5]

The End

Setters: Mrs Tan Lai Yin & Ms Nuha Yumn

Copyright Acknowledgements:

Fig. 1A: <http://www.diercke.com/kartenansicht.xtp?artId=978-3-14-100790-9&seite=44&id=17489&kartennr=2>

Fig. 1B: <http://thebritishgeographer.weebly.com/the-climate-of-tropical-regions.html>

Fig. 2A: GCE 'O' Level Examinations 2010 Paper 1.

Fig. 2B: GCE 'O' Level Examinations 2010 Paper 1.

Fig. 3: <http://travel.nationalgeographic.com/travel/countries/japan-guide/>

Fig. 4: <http://revisionworld.com/gcse-revision/geography/tectonic-activity/tectonic-plates>

Fig. 5: AVA Singapore Statistics (<http://www.ava.gov.sg/docs/default-source/tools-and-resources/yearly-statistics/food-imports>)

Fig. 6: AVA Singapore Statistics (<http://www.ava.gov.sg/explore-by-sections/food/singapore-food-supply/the-food-we-eat>)

**ANSWERS**

ANGLICAN HIGH SCHOOL MID-YEAR EXAMINATION 2015

GEOGRAPHY**2236/02**

Paper 2

30 April 2015

Secondary 4

1 hour 30 minutesAdditional Materials: 5 sheets of writing paper

READ THESE INSTRUCTIONS FIRST

Write your index number and name on all the work you hand in.

Write in dark blue or black pen on both sides of the paper.

You may use an HB pencil for any diagrams or graphs.

Do not use staples, paper clips, glue or correction fluid.

Section AAnswer **one** question. Choose either Question 1 or Question 2.**Section B**

Answer Question 3.

Write all answers on the writing paper provided.

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.

At the end of the examination, fasten all your work securely together.

Detach the cover page and attach it to your answer sheets.**Hand in the question paper, Section A and Section B separately.**

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

Name:			
Class:		Index No:	
Section A Qn. No: ()			25 marks
Section B			25 marks
TOTAL:			50 marks

Parent's Name:	
-----------------------	--

Parent's Signature :	
Date:	

This document consists of **7** printed pages.

Section A

[Turn over

Answer **one** question from this section.

- 1 (a) Study Fig. 1A and Fig. 1B which shows rainfall and temperature of Singapore and Moscow (Russia).

Moscow: 55°N 37°E

Mean annual temperature = 5.0°C

Total annual precipitation = 688mm

Singapore: 1.3°N 103°E

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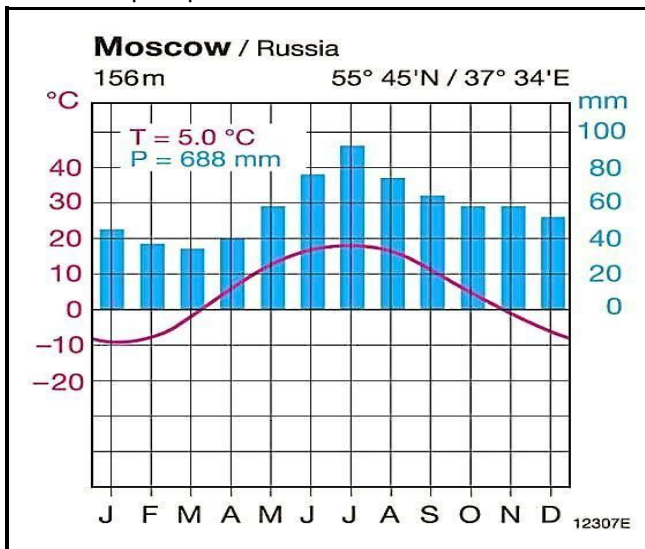


Fig. 1A

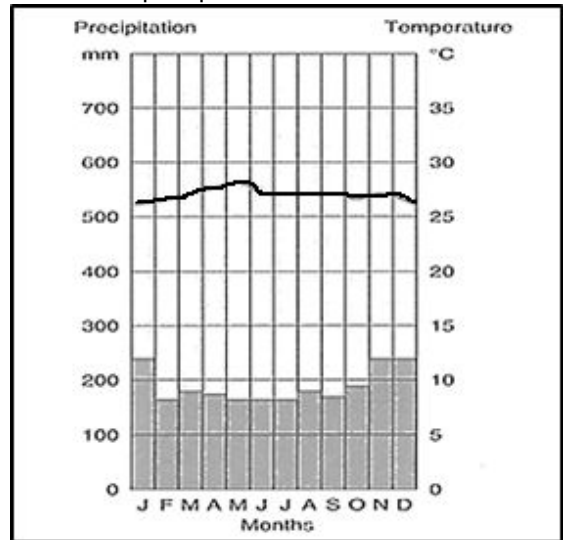


Fig. 1B

- (i) With reference to Fig. 1A and Fig. 1B, compare the rainfall and temperature of Moscow and Singapore. [5]

2m for temp and 2m for rainfall comparison.

Minus 1m if no comparison is given.

	Moscow	Singapore
Mean annual temperature	5C – low	27C – hot / high
Range of temp.	large annual range of -28C	Small/narrow annual range of 3C
Max and Min temp	Max – 19C Min - -10C	Max – 27C Min – 23C
Seasonal temp	Warm summers, cold winters	Hot throughout the year
Total rainfall	moderate of 688mm/yr	Very high >2000mm/yr
Rainfall variations	Summer rain, snow in winter	Rain throughout the year , evenly distributed with

		slightly higher rainfall during end of the yr
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(ii) Explain why Moscow has a lower mean annual temperature than Singapore. [3]

(1m for each point)

- Moscow is in **higher latitudes whereas Singapore is closer to the equator**, therefore:
- Moscow has a **lower angle of incidence**. The curvature of the earth surface diffuses the sun's rays and heat **spread out over a larger area**
- Whereas Singapore - sun's rays **strike at a higher angle and hence, solar energy is concentrated on a smaller area**. Thus experience a higher average temperature.
(1m each)

(b) Study Fig. 2A and Fig. 2B which give information about Singapore's weather over a 24-hour period in July 2008.

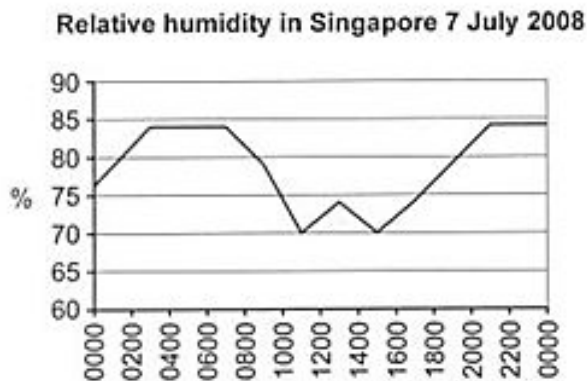


Fig. 2A

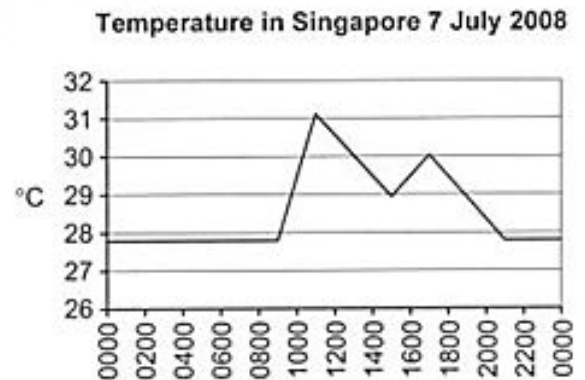


Fig. 2B

Using information from Fig. 2A and Fig. 2B, describe and explain the relationship between temperature and relative humidity. [4]

- When temperature increases, RH decreases [1]
- Warm air holds more water vapour than cool air [1]
- When temperature increases, the amount of water vapour in the air stays the same. [1]
- But the rise in temperature makes air more able to hold water vapour lowering RH. [1]

(c) Why are land and sea breezes features of many coastal regions? [5]

(1m for each point)

- In the day, land is heated faster & in turn heats up the air above it, creating LP over the land
- The sea does not heat up as fast Therefore, cooler over the sea (HP)
- This gives rise to a pressure gradient and air moves from the sea to the land called sea breeze.
- At night, sea loses heat slower than the land and is warmer than the land (LP develops over the sea)
- Air moves from land (HP) to the sea (LP) called land breeze

(d) 'National measures are more effective than international agreements in reducing the impact of climate change'. Do you agree with this statement? Explain your answer using examples.
[8]

Level 1

Only national or international measures discussed

Answers are brief and not elaborated

No successes and limitations given

No examples given

Level 2

Both national and international measures discussed

Answers are well-elaborated but not very detailed.

Both successes and limitations each for each measure and agreement

Some examples given

There is an attempt t

Level 3

Both national and international measures discussed

Answers are well-elaborated.

Both successes and limitations each for each measure and agreement

Multiple examples given

Balance in answer and evaluation is clear, organised and cohesive.

Good links to the question is apparent

Any one or two of the national strategies should be discussed.

- Singapore Green Plan 2012 : Reduce greenhouse gas emissions by using natural gas as an energy source
- Green Mark Scheme: Constructing 'green' buildings
- Plant a tree Programme : Planting more trees and plants
- National Urban Transport Policy in India: public transport

- Energy labelling Programme: reducing energy consumption
- Indian network of climate change assessment : Promoting India- specific climate change research.

(see pg 115 EG)

International strategies (1 or 2 to be discussed)

Kyoto Protocol

Copenhagen Conference

- Singapore Green Plan 2012

Description of strategy	Successes	Limitations
Launched by the Ministry of the Environment in 2002, the Plan aims to generate 60 per cent of Singapore's energy needs using natural gas by 2012. Natural gas is a cleaner form of energy in comparison to coal because it does not produce smoke.	As early as 2010, about 79 per cent of Singapore's electricity was being generated from natural gas. This exceeded the Ministry of Environment's target ahead of schedule.	Natural gas requires complex treatment plants to process and pipelines to transport. These pipelines have high maintenance costs because they need to be laid underground and have to be checked regularly for leakage.

Singapore: Green Mark Scheme

Launched by the Building Construction Authority (BCA) in 2005, the scheme allows buildings to be evaluated and certified according to how energy-efficient and environmentally friendly they are. The scheme aims to encourage more new 'green' buildings, which are more energy-efficient. Buildings which are more energy-efficient use less energy to provide the same service. An example is buildings that run partly on solar energy.	Existing 'green' buildings, such as Plaza by the Park, Standard Chartered @ Changi and the National Library Building, have reported energy savings of 15 per cent to 35 per cent compared to conventional buildings. This cuts down greenhouse gas emissions by reducing the use of fossil fuels to generate electricity.	Construction companies and developers in Singapore tend to be conservative about adopting new ideas and materials to build 'green' buildings. 'Green' buildings are built using processes that are environmentally friendly and resource-efficient. 'Green' buildings may cost more to build because 'green' materials may be more expensive. 'Green materials' are products such as bamboo or recycled metal that are non-toxic, reuseable, renewable, or recyclable.
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Plant a tree programme

Started in 1971 as Tree Planting Day, the Plant-A-Tree Programme by the Garden City Fund and Singapore Environment Council aims to maintain Singapore's status as a Garden City by planting trees. Residents are encouraged to donate money to buy a tree or take part in tree planting events that take place monthly throughout Singapore.	The programme has contributed to an estimated 60,000 trees planted yearly throughout Singapore by the National Parks Board (NParks). Trees are the green lungs of the environment as they remove carbon dioxide from the atmosphere.	Trees take many years to mature, so the positive effects of tree planting will take time to materialise. Even relatively fast-growing trees such as angsanas, raintrees and yellow flames that were planted by NParks took 25 years to reach their full height.
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Kyoto protocol

Successes

Many countries such as Austria, Finland, Greece met or exceeded targets (5%) set by Kyoto Protocol as there was constant monitoring and reporting by countries for self and peer assessment.

Encouraged sustainable development.

Developed countries are encouraged to work with developing countries in carbon-reducing projects e.g. installing energy efficient infrastructure (Clean Development Mechanism — CDM) which gave Certified Emission Reduction (CER) credits to countries that helped. Each credit is = 1 tonne of CO₂ which they are allowed to release.

Limitations

Not all countries are able to meet their goals and not all countries have the same emission targets.

Denmark, Sweden and the United Kingdom did not achieve their targets

KP does not make it compulsory for countries with low GHG emissions to provide support to other countries.

Many countries did not sign the Kyoto Protocol and continue to contribute to global emissions.

A large portion of the increase in global emissions (35%) came from China, India and the United States of America

Copenhagen Conference

Successes

Allow countries to discuss measures to deal with climate change effectively, including improvements to Clean Development Mechanism (CDM).

International agreement to keep increase in global temperature to below 2°C.

Developed countries pledged to:

Reduce greenhouse gas emissions by 2020.

Provide US\$30 billion for developing countries to fight climate change

Limitations

Targets set to reduce GHG are insufficient to keep increase of global temperature to within 2°C

Lack for concrete plans on how to reduce greenhouse gases

Copenhagen Accord (Agreement) was not adopted by all countries.

- The Accord was a guideline and no countries will be binded/punished if they do not fulfill their pledges.

- 2 (a) Study Fig. 3, which shows the location of three cities, Kagoshima, Tokyo and Sapporo, temperature data and information about ocean currents.

Using information from Fig. 3, explain the factors that may affect the temperatures of these cities. [5]

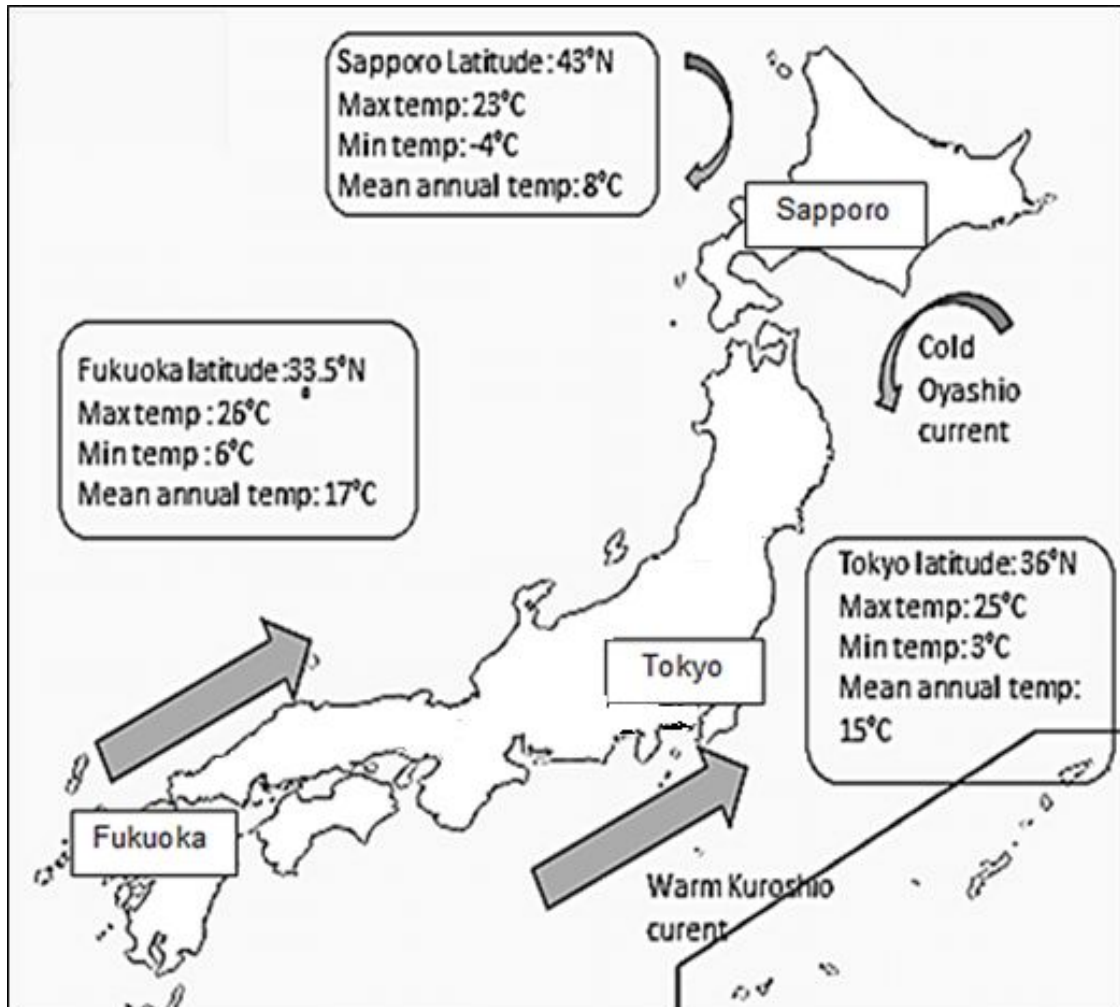


Fig. 3

Latitude (1m for general relationship, 2m for evidence – must state 1 with higher latitude and 1 with lower latitude):

- Temperature decreases with latitude. [1]
- Sapporo located at higher latitude of 43N has the lowest mean annual temp 8C. [1]
- Fukuoka located at 32N has the highest mean temp of 17C or Tokyo locate at 36N has a mean annual temp of 15C. [1]
- Sapporo is in higher latitudes whereas Fukuoka is closer to the equator, therefore has a lower angle of incidence. The curvature of the earth surface diffuses the sun's rays and heat spread out over a larger area. Therefore temperature tends to be lower in Sapporo.[1]

[max 3m]

Warm ocean currents (max 1 mark):

- Warm currents warms the air / onshore winds that blow over it and raise winter temp of Fukuoka and Tokyo compared to Sapporo. [1]
- Cold current cools the air / winds that blow over it and lowers the winter temperatures at Sapporo. [1]

(b) Explain why convectional rain is a common feature in Singapore. [4]

- **Singapore has an equatorial climate with high temp of 27°C throughout the year. [1] Compulsory point.**
- As the sun's energy heats up the earth's surface, the warm surface heats the air around it. [1]
- The air becomes unstable causing it to expand and rise. [1]
- As air rises, cools to dew point, condensation occurs and rain follows.[1]

[4m]

(c) Using examples, explain how an increase in average global temperatures could lead to the spread of infectious insect-borne diseases in tropical areas and areas with moderate temperatures. [3]

1m for each point:

- Tropical areas – high temperatures and rainfall – insects thrive in aquatic habitats
- Mosquitoes in large numbers resulting in malaria and dengue fever
- Regions with moderate temperatures like Europe and north America are facing diseases once confined to the tropics
- E.g.: dengue reported in cool climate areas like Nepal and Bhutan for the first time in 2004

(d) Fig. 4 shows a section of the earth's crust.

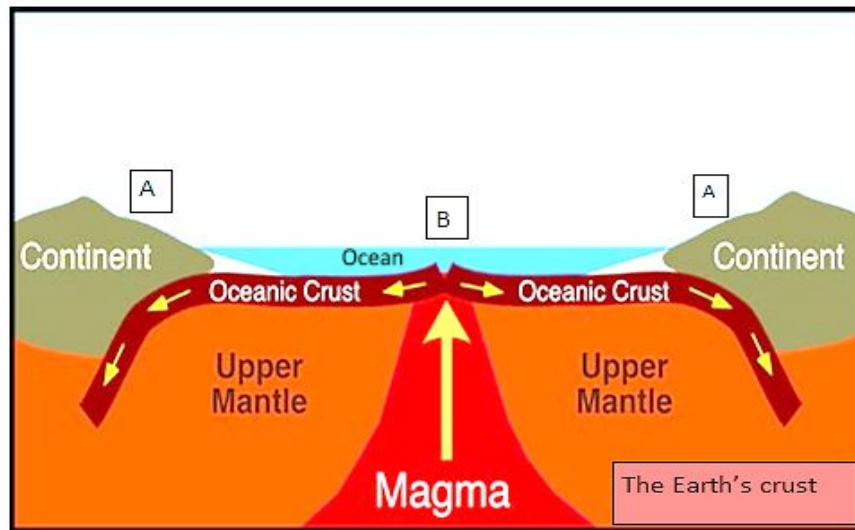


Fig. 4

Compare how volcanoes are formed at boundary A and boundary B in Fig. 4 [5]

1m for each point:

- At A, plates move towards to each other whereas at B plates move apart from each other.
- The denser plates at A **subduct (subduction zones) under the less dense plates.**
- **Oceanic plates at A melt to form magma that rises** to the surface of continental plates through fractures creating volcanoes.
- However, at B, magma rises from the mantle through fractures **to fill the gap between the plates as plates move apart.**
- This forms new **seafloor (seafloor spreading) and underwater ridges and volcanoes** in the middle of the Atlantic Ocean

(e) 'Mitigation measures to cope with the destructive effects of plate movements are more effective in developed countries than less developed countries.' To what extent is this true? Support your answer with evidence. [8]

- Largely true
- Strategies to manage impact of tectonic hazards requires high level of expertise, technology and financial resources
- Eg: earthquake building technology [use of damping devices, base isolation, reinforced steel, etc]
- DCs have a higher literacy rate – people understand the need and are in a better position to participate in evacuation drills. However, complacency can set in.
- Resolve of the government to implement such mitigation strategies – usually occurs with govts of DCs.

- Comparisons should be made using at least two or three types of mitigation measures and between one DC and one LDC.

Level 1

Definition of mitigation measures is unclear

Only 1 or 2 measures are discussed but answer is brief and vague with minimal support.

Lacks content elaboration,

No use of specific examples

Little reference to why mitigation measures are more effective in DCs than LDCs.

A basic answer that has little development.

Level 2

Stand is apparent and clear.

Two or more mitigation measures are given.

Answers are relatively well-elaborated supported with some examples though may not be detailed.

Emphasis on reasons why such measures are more effective in DCs must be apparent : availability of capital, expertise, technology etc in DCs vs LDCs.

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.

Level 3

Answers are 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. A clear indication will be given of the contribution of developed countries to the effectiveness of the use of mitigation measures in the management of tectonic hazards. Examples are clear and explained.

Strategy	Successes examples	Limitations examples
Building design Ø Definition ü Refers to the reinforcement of buildings to withstand earthquake events Ø Purpose ü Effective building design can reduce the collapse of buildings and minimize the damage caused by an earthquake Ø Explanation ü Steel and reinforced concrete are able to withstand earthquakes better than more brittle materials such as non-reinforced concrete	San Francisco's tallest skyscraper known as the Transamerica Pyramid owes three decades of existence to solid structural engineering that allows it to resist the earthquake threat in California. Its pyramid-shaped structure sits on top of a 52-foot-deep steel and concrete foundation designed to move somewhat with quakes, while reinforcing rods interlace the building at four places on each floor.	The San Francisco's Transamerica Pyramid cost \$75 million and requires a lot of capital yearly to maintain its structure. This makes it difficult for LDCs to adopt this strategy due to the high cost involved. As a result, LDCs like Nepal and Sichuan (China) suffer great destruction during earthquakes. Even if such buildings

ü Damping devices act as shock absorbers for some of the seismic energy released during an earthquake. The damping devices also act as counterweights which move in the direction opposite to the motion of an earthquake. ü Constructive buildings with wide and heavy bases decreases likelihood of these buildings from collapsing Base isolation bearings made out of rubber or cushion can be placed between the ground and the building. These bearings act as a buffer to prevent building from shaking too much. When an earthquake occurs, base isolation bearings absorb force of earthquake and reduce movement of building.	Similarly, a system of triangular trusses supports the building's base just above the first floor. Such measures helped the 48-story-high Transamerica Pyramid survive a 7.1-magnitude quake that struck the nearby Santa Cruz Mountains in 1989. The building shook for more than a minute and swayed almost a foot from side to side at the top story, but remained undamaged	are constructed, contractors and officials are often corrupt and building codes are not followed strictly rendering such measure ineffective.
Infrastructure development Ø Definition ü Infrastructure includes transportation networks such as roads, bridges and dams, buildings such as homes, office buildings and factories, as well as large underground water tanks ü Such infrastructure needs to be developed with advanced engineering to withstand the vibration associated with an earthquake Ø Purpose ü Roads, bridges and dams can be built to resist the shaking of the ground so that they do not collapse or can be easily repaired if collapse ü Homes, office buildings and factories can be fitted with trip switches that ensure all electrical points are switched off in the event of an earthquake. This prevents fire from breaking out. ü Large underground water tanks are emergency reservoirs for possible firefighting after an earthquake. Adherence to strict building codes which specify the minimum acceptable level of safety for infrastructure such as houses	The San Francisco's Bay Bridge and Golden Gate Bridge are both being retrofited with earthquake resistant features to prepare for a 6.7 magnitude earthquake predicted to occur sometime in the next 30 years. The bridges are reinforced with concrete and steel pilings, and heavy bolts. These bridges are engineered to sway with the earthquake tremors instead of simply withstanding it. In Japan, large numbers of cylindrical underground tanks were constructed to provide a consistent and stable source of water for firefighters in the event of an earthquake. These earthquake resistant concrete water tanks can withstand extreme vibrations from earthquakes. During the 1995 Kobe Earthquake, due to the large number of fires that broke out over the first two days, the system of underground water tanks	During the 1994 Northridge Earthquake in the USA, many buildings and highways that were fitted with steel frames were badly damaged. Hence, many bridges and highways that are constantly used by motorists everyday had to be reinforced and retrofitted further with bolts and steadier foundation. The cost of retrofitting the Golden Gate Bridge with earthquake resistant features amounted its entire cost to more than \$6 billion. LDCs do not have the capital, technology nor the expertise to retrofit their buildings or to maintain them in

	proved adequate in preventing the spread of the fires. Water for firefighting was made available for 2 to 3 hours.	optimum condition as it is just too costly to do so.
Use of technology Ø Definition ü Monitoring and warning systems allow scientists to warn people of potential hazards so that they can evacuate Ø Purpose ü Seismic risk maps show likelihood of locations at risk from earth movements or liquefaction. These are produced from studies of history of when and where earthquakes have occurred before. These studies can only give a general indication of the frequency and magnitude of earthquakes. However, maps do not provide precise information about time, location and magnitude of future earthquakes Installing earthquake sensors such as seismometers in earthquake-prone zones helps monitor the frequency of vibrations and detect possible developments of an earthquake.	In Haicheng, China, scientists identified changes in ground level and increase in small tremors, which are signs of an impending earthquake. These were possible through the use of seismometers. The authorities were informed and people were warned to evacuate the city. 90,000 people were saved from the magnitude 7.3 earthquake, which occurred on 4 February 1975, that destroyed 90% of the city's infrastructure.	Indonesia has a system in place to send out tsunami warnings by SMS within 20 mins of a big quake after the Indian Ocean Tsunami in 2004, many poor people may not own handphones and will not get warnings. As of Nov 2007, only 3 out of 20 of their tsunami sensors are in place and only 1 is working. They lack the funds to install and maintain such equipment.
Emergency drills Ø Definition ü A form of preparedness measure where people practise steps to take when an earthquake occurs Ø Purpose ü Regular emergency drills help people to be familiar with what to do during an earthquake. ü Practising regularly also allows people to be able to react quickly in an event of an earthquake. ü Emergency drills would remind people where the safe areas are to take cover during an earthquake. Creates awareness among population and reduces levels of panic and irrational behavior	A nation-wide earthquake drill was conducted in Tokyo on 1 September 2012. Throughout Japan, about 387,000 people were scheduled to take part in the drills. The drills were a joint effort by Yokohama, Tokyo and seven other nearby municipalities, which simulated an earthquake centered in the Tokyo area. This emergency drill prepared citizens for an earthquake and tsunami on the scale experienced in the 2011 Tohoku earthquake.	The earthquake that occurred in Tohoku, Japan, was on a scale never experienced before in Japan, with a magnitude of 9.03. The emergency drills and evacuation plans were inadequate to prevent the devastation of the areas affected by the earthquake. In LDCs like Haiti, people are uneducated and are more concerned about eking a living than to practice such drills faithfully and

		would often ignore warnings to evacuate. LDCs often do not have specially trained and equipped civil defence forces nor are they well trained in rescue and search missions as in the case of Sichuan earthquake in May 2008 leading to high death toll. In impoverished areas in Indonesia, it is difficult to engage people on management and preparedness.
Land use regulation Ø Definition ü Set of rules implemented to restrict developments in certain areas Ø Purpose ü To restricts building development across fault lines or areas at risk of liquefaction To prohibit construction of new buildings on low-lying land which are vulnerable to tsunamis – developments may be allowed only when protective barriers such as seawalls facing the ocean are constructed	California, USA, all new building developments are not built across fault lines or areas at risk of liquefaction. This occurs when vibrations from an earthquake cause saturated soil to flow like liquid making the ground unstable. New buildings can only be constructed lowlying land vulnerable to tsunamis if protective seawalls are built facing the ocean as along the coast of Japan and N. America.	Implementing such regulations means evacuating or buying land from private owners, compensating them to move out and put in place protective measures. This is very costly especially for many LDCs. Haiti – If the govt care to spend money on landuse design, there would be less money or resources available for other more urgent uses like providing food for the hungry as many Haitians already do not have access to basic necessities like food and water.

Section B

This question is compulsory.

- 3 Study Fig. 5, which shows the statistics for amount of meat and seafood imported into Singapore over the years.

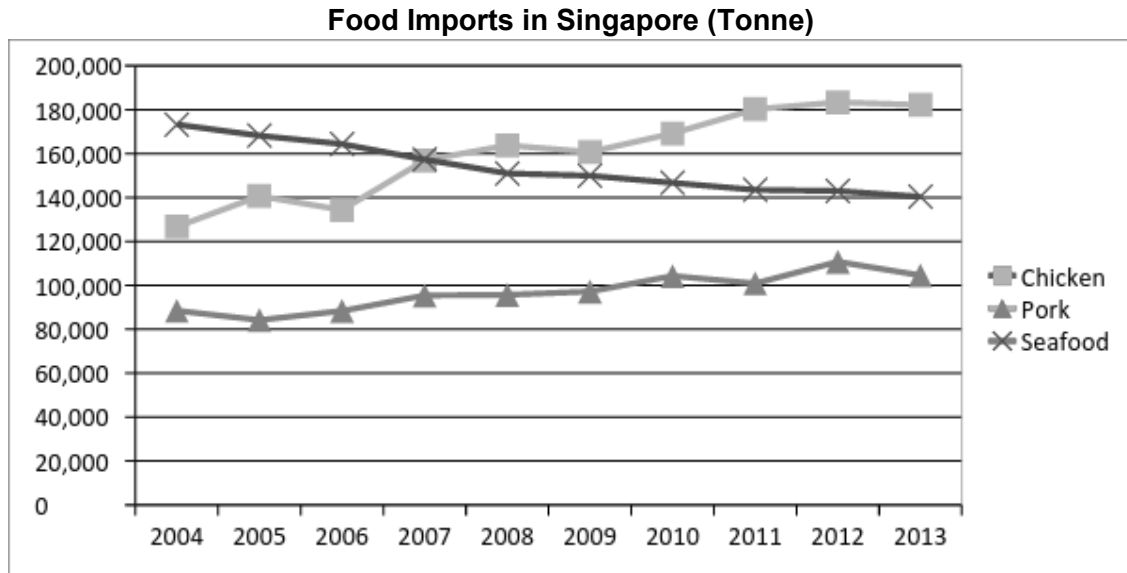


Fig. 5

- (a) With reference to Fig. 5, compare the trends in demand for chicken, pork and seafood in Singapore. [4]

Reserve 1m for trend.

Reserve 1m for data to support each trend.

1m for each of the following points:

- Between 2004 and 2013, both pork and chicken show a general increase in food imports in Singapore while seafood shows a general decline.
 - o Chicken increased by about 55,000 tonnes while pork increased by about 15,000 tonnes.
 - o On the other hand, seafood has decreased by about 35,000 tonnes.
- Chicken has a steeper and greater rate of increase than pork.
- While seafood imports were higher than chicken between 2004 and 2007, it was less than amount of chicken imported after 2007.
- Pork is the lowest amount of meat imported as compared to chicken and seafood from 2004 to 2013.

- (b) Explain the reasons for the trends in demand for chicken and pork you have described in (a). [4]

1m for each of the following points:

There has been an increase in demand for chicken and pork in Singapore between 2004 and 2013 because of...

- **Increase in disposable income** – rising income results in higher disposable income, which is the amount of income left to an individual after taxes have been paid. When people in Singapore have more disposable income, they have more purchasing power to consume a larger amount and variety of food.
- Often an increase in disposable income leads to consuming more meat and less staples. This is often because meat consumption is generally associated with wealth and status.
- **Food preferences** – the increase in fast food outlets have also led to an increase in consumption of chicken and pork. Chicken and pork are popular food choices at fast food outlets such as MacDonalds or KFC. These fast food outlets are well-received by people due to its convenience and affordable price.
- Globalisation has also made it possible for fast food chains to set up restaurants in many countries, including LDCs. It has made it possible for non-Singaporean owned fast food outlets to open in Singapore.
- **Population growth** – the increase in demand for meat could also be due to population growth in Singapore. Singapore's population had been steadily increasing from 2004 to 2013 by about
- **Accept any other plausible answers**

- (c) Study Fig. 6, which is an infographic showing information about the food that is eaten in Singapore and where it comes from.

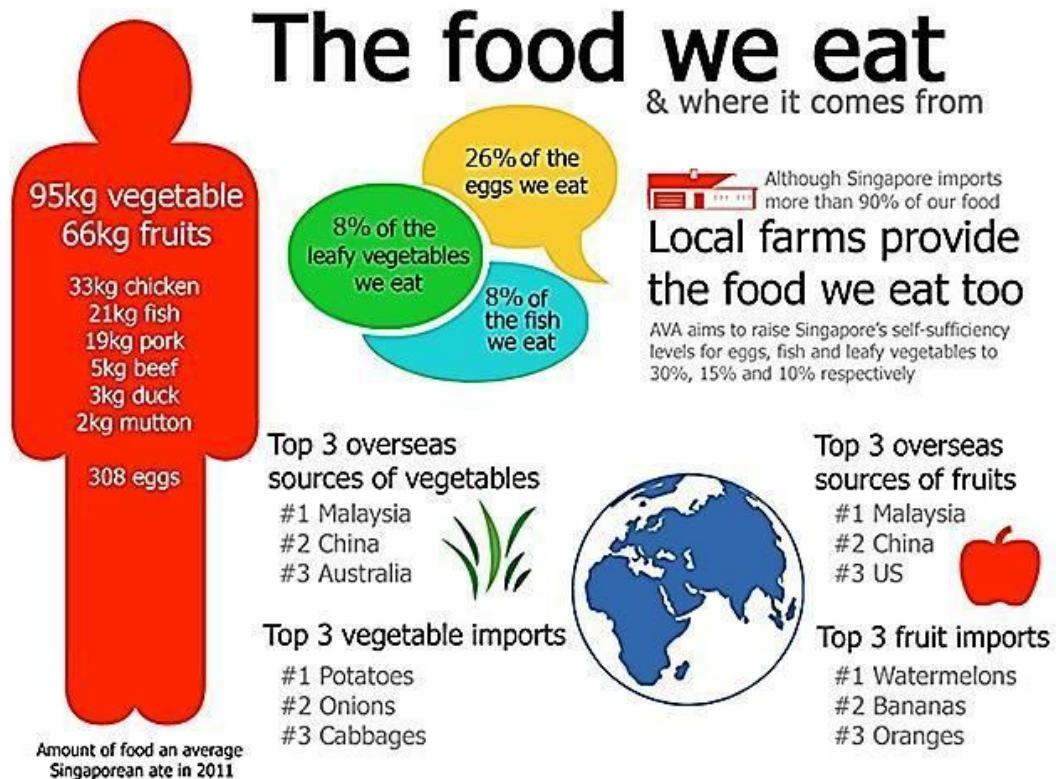


Fig. 6

- (i) Based on the information given in Fig. 6, suggest two possible reasons for a food shortage occurring in Singapore. [4]

Allocate 2m for each point. Each reason must be elaborated.

1m for each of the following points:

- **Extreme weather events** – these refer to weather events which may cause the loss of lives or damage to property. These include droughts, cold waves, heat waves and tropical cyclones.
- Extreme weather events in countries where Singapore imports its food from such as China, Malaysia, US or Australia may lead to a food shortage in Singapore. As Singapore imports 90% of its food (from the stimulus), the country would lose a large supply of its food.
- **Climate change** – global warming is causing the accelerated rate of the shrinking of glaciers. This would lead to a smaller supply of fresh water for irrigation of crops.
- For example, glaciers are expected to melt entirely by 2035. In the Himalayas, the melting of all glaciers would affect China and India as it provides water for the main rivers in these countries. These river basins provide water for irrigation.

- As Singapore gets a large supply of fruits and vegetables from China, it may suffer a food shortage in future when China loses a large source of water for irrigation.
- **Demand from emerging economies** – developing economies growing rapidly such as the BRIC countries may cause an increase in food demand. This sustained growth in demand for food from these countries is believed to be depleting global food inventories.
- This may cause a food shortage in Singapore as the reduced global food supply might increase prices of food and make it unaffordable for poorer Singaporeans to get enough food.
- **Soaring cost of transport** – Singapore is very vulnerable to fluctuations in global food supply and prices as it imports more than 90% of its food.
- An increase in prices due rise in fuel costs or rise in cost of fertiliser will cause rise in food prices. This may make food unaffordable for Singaporeans.
- **Accept any plausible answers.**

(ii) Explain how local farms in Singapore would be able to raise its 'self-sufficiency for leafy vegetables by 10%'. [5]

Allocate 2m for each strategy. Each strategy must be elaborated.

1 mark for each of the following:

- **Technological strategies** – the use of farming technology can help increase food production.
 - o **The uses of HYVs** – HYVs are improved strains of crops such as rice, wheat and other cereals that have an increased growth rate. They are developed through cross-breeding of selected varieties which are found to exhibit favourable characteristics.
 - These characteristics include increased resistance to pests and diseases or the ability to grow within a shorter growing season.
 - o **Irrigation** – method of supplying water to the land other than by natural means.
 - By supplying water to areas that used to be too dry for farming or for times in the year where there is low rainfall, irrigation would be able to increase the number of crop harvests in Singapore.
 - o **Chemical fertilisers and pesticides** – These are substances added to the soil to provide nutrients for healthy plant growth and to kills insects and small animals that destroy crops respectively.
 - o **Mechanisation** – use of advanced machinery to perform tasks which they would otherwise have to do manually.
 - Use of computers in Singapore's high-tech farms allows fewer workers needed to grow crops on the farms.
 - o **Use of biotechnology** – use of GM crops, which have a higher yield than non-GM crops
 - o **Use of other high-tech farming techniques** – vertical farming to save space, use of chemical solutions in aeroponics and hydroponics

- **Social strategies** – encourage locals to support the local farmers by purchasing locally produced food. This will help to keep the local farmers in business through ensuring demand for their produce
 - o Can encourage locals to support the local farmers through advertising and campaigning.

(d) 'Political strategies are most effective in alleviating the problem of food shortage.'
How far do you agree with the statement? Support your answer with evidence. [8]

Marks	Descriptors	Examples
Level 3 (7 – 8 marks)	At least two political strategies (either national or international or 2 national or 2 international) and one other strategy required; A clear stand is necessary; 1 national and 1 international strategy (these constitute political strategies), and one other factor needed for 7 to 8 marks. Details • There is a clear definition/description of the strategy. • There is a clear explanation of the strategy and how it alleviates the problem of food shortage. Examples • There is clear, accurate description of how the strategy alleviates food shortage in a place. There is evidence of the strategy being successful. • There is clear, accurate description of how the strategy is limited in alleviating food shortage in a place. There is evidence of the strategy being unsuccessful.	Details Agricultural policies in Singapore have helped increase its food production from the 1970s. Agrotechnology parks that house high-tech farms have been built. These parks are equipped with the necessary infrastructure that modern farms require, such as computers. Examples In Singapore, local farms produce increased to 8% of vegetables, 8% of fish and 26% of eggs consumed in the country. This allows Singapore to reduce its reliance on imports. Evaluation Political strategies are most effective in alleviating the problem of food shortage. This is because, policies made nationally could help improve food security in the country by increase productivity in local farms and also reduce dependency on imports. Governments could also ensure greater productivity by prioritising agriculture on top of other developmental projects. These strategies help increase food security in the long-run, even if they may not solve the problem of the food shortage immediately at present. Points accepted: National strategies (Political) - • Agricultural policies ▪ FELDA scheme – purpose was to reduce poverty in rural areas through agricultural activities.

	Balance • There is discussion of the effectiveness of the strategies (both success and limitations). • There is thorough consideration of whether the political strategies are most effective in alleviating food shortage using two or more of the following criterion either in body paragraphs or conclusion of essay: - o There is comparison of the strategy used in developed countries and less developed countries - o There is an evaluation of the scale of impact of the strategy to show effectiveness - o There is an evaluation of strategy based on a time-scale (long-term or short-term effectiveness) - o There is an evaluation of its cost-effectiveness	▪ Development of unused land for agriculture and settlement. ▪ Farmers were provided with land, seeds and tools for farming. ▪ Building of modern processing facilities for crops. ▪ Successes – more than 90,000 families had been resettled under the FELDA scheme by 1985. Most of them were involved in agricultural activities such as rubber, oil palm, cocoa, sugar cane and coffee plantations. ▪ Limitations – food security of the country may be threatened as cash crops such as oil palm are favoured over food crops due to higher revenue. Most of the cash crops such as oil palm are long-term crops that require high capital. They are also subjected to fluctuations of world price, hence posing a high risk to farmers compared to other land uses. International strategies (political) - • Food programmes – ▪ UNWFP - responding to emergencies: provision of emergency food assistance during wars and natural disasters. ▪ Successes – food was successfully delivered to 99.5% of targeted recipients during the 2011 Sudan food crisis. ▪ Limitations – During such emergencies, food prices may be inflated, which results in high costs for the UNWFP. The extent of its assistance may also be limited by how much funds they receive from donors. Other points accepted: • Technological strategies
Level 2 (4 – 6 marks)	At least two political strategies (either national or international) and one other strategy required; A clear stand is necessary; Any two political strategies (national or international, or both), and one other factor needed for 4 to 6 marks. Details • There is a clear definition/description of the strategy.	

	• There is a clear explanation of the strategy and how it alleviates the problem of food shortage. Explanation may not be completely comprehensive. Examples • Only one to two examples are given throughout the essay. • There is some description of how the strategy alleviates food shortage in a place. There is evidence of the strategy being successful. • There is some description of how the strategy is limited in alleviating food shortage in a place. There is evidence of the strategy being unsuccessful. Balance • There is discussion of the effectiveness of the strategies (both success and limitations). • There is some consideration of whether the political strategies are most effective in alleviating food shortage using at least one of the following criterion either in body paragraphs or conclusion of essay: - o There is comparison of the strategy used in developed countries and less developed countries - o There is an evaluation of the scale of impact of the strategy to show effectiveness - o There is an evaluation of strategy based on a time-scale (long-term	▪ Storage ▪ Farming technology (HYVs, irrigation, use of chemicals, mechanisation) ▪ Biotechnology (GM)
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	or short-term effectiveness) o There is an evaluation of its cost-effectiveness	
Level 1 (1 – 3 marks)	1 strategy discussed only. Details • There is a <i>brief</i> explanation of each strategy. • Does not elaborate or does not state all the strategies required. Examples • No examples given OR • Only one example given OR • Examples are merely stated, with no explanation or evidence Balance • There is discussion of effectiveness of strategies. However, these strategies are not thoroughly examined and generalized statements are made about them.	

The End

Setters: Mrs Tan Lai Yin & Ms Nuha Yumn

Copyright Acknowledgements:

Fig. 1A: <http://www.diercke.com/kartenansicht.xtp?artId=978-3-14-100790-9&seite=44&id=17489&kartenNr=2>

Fig. 1B: <http://thebritishgeographer.weebly.com/the-climate-of-tropical-regions.html>

Fig. 2A: GCE 'O' Level Examinations 2010 Paper 1.

Fig. 2B: GCE 'O' Level Examinations 2010 Paper 1.

Fig. 3: <http://travel.nationalgeographic.com/travel/countries/japan-guide/>

Fig. 4: <http://revisionworld.com/gcse-revision/geography/tectonic-activity/tectonic-plates>

Fig. 5: AVA Singapore Statistics (<http://www.ava.gov.sg/docs/default-source/tools-and-resources/yearly-statistics/food-imports>)

Fig. 6: AVA Singapore Statistics (<http://www.ava.gov.sg/explore-by-sections/food/singapore-food-supply/the-food-we-eat>)