

Index Number

Class

Name



# CHIJ ST JOSEPH'S CONVENT SEMESTRAL ASSESSMENT 1



GEOGRAPHY

Paper 1

Secondary 4 Express



2236/01

Friday, 6 May 2016

1 hour 40 minutes

Additional Materials: Writing paper, Graph Paper and an Insert

## READ THESE INSTRUCTIONS FIRST

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

Write in dark blue or black pen.

You may use a soft pencil for any diagrams or rough working.

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

### Section A

Answer Question 1.

### Section B

Answer one question.

Candidates are encouraged to support their answers with the use of relevant examples.

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

At the end of the examination, attach this Cover Page on top of all your answers securely.

Hand in the Question Paper separately.

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

You are reminded of the need for clear presentation of your answers.

FOR EXAMINER'S USE	
Section A	25
Section B	25
Total	50

This document consists of 7 printed pages and 1 blank page.

Setter(s): Mrs Cindy Soon

[Turn over

## Section A

### Answer all questions in Section A.

- 1 Students carried out a fieldwork activity around the Orchard Road area to find out what makes this area attractive to tourists. The students identified 6 survey sites on the map in Figure 1 (Insert) following a pre-fieldwork survey conducted.
- a Suggest two possible reasons why the students decided to conduct a pre-fieldwork survey two weeks before the actual investigation. [2]
- b Students were given this guiding question: [1]  
"Why do some areas in Orchard Road attract more tourists?"  
  
Craft a hypothesis to test this idea.
- c At each of the survey sites, students decided to approach as many people as they can. Their target was at least 30 respondents per survey site.  
  
Identify the sampling method chosen and discuss the effectiveness of such a method. [3]
- di The students decide they want to conduct interviews. Explain some considerations the students should bear in mind when designing their questions. [2]
- ii Other than questioning the integrity of the responses identify and explain another limitation the students may face during the interview. [2]
- e Describe and explain how a landuse survey may help students to find out what makes the Orchard Road area attractive to tourists. [3]
- f Table 1 shows the data collected for each site, showing the reasons why tourists frequented the Orchard Road area.

Survey sites	1	2	3	4	5	6
Respondents	10	30	45	38	45	15
Why they are there	Embassies	MRTs Hotels	MRT Tangs Hotels	Galleria Hotels Eateries	NG City WismaAtria Eateries	Medical centre

Table 1

- (i) Using the data shown in Table 1, construct a suitable graph to represent the data on the graph paper provided. [3]
- (ii) Discuss the reliability and validity of data shown in Table 1. [4]

- g One group of students wanted to investigate if there was negative environmental impact of tourism along Orchard Road. Table 2 shows the collected data. [3]

Positive aspects	2	1	0	-1	-2	Negative aspects
Little litter	8	10	6	19	15	Much litter
High pedestrian count	20	15	8	11	18	Low pedestrian count
Well kept buildings	16	14	10	5	15	Buildings look dull
Lush greenery	17	19	8	2	5	Hardly any greenery
Clean air quality	0	12	13	6	10	Foul smelling air

Table 2

Suggest some conclusions the students can make using the data collected.

- h The students realized there could be some limitations in the data collected that may skew their conclusion to their investigation. [2]

Explain a limitation identified and suggest how it may be improved.

## Section B

Answer one question from Section B.

2a Study Figure 2 which shows a coastline.



Figure 2

- i Draw and label a field sketch of the coastline shown in Figure 2. [3]
- ii Explain how wave refraction may bring about erosion and deposition along this coastline. [4]
- b Using examples you have studied, describe and explain how pollution and climate change may threaten the survival of coral reef systems. [5]

- c Figure 3 shows human activities in a coastal community.

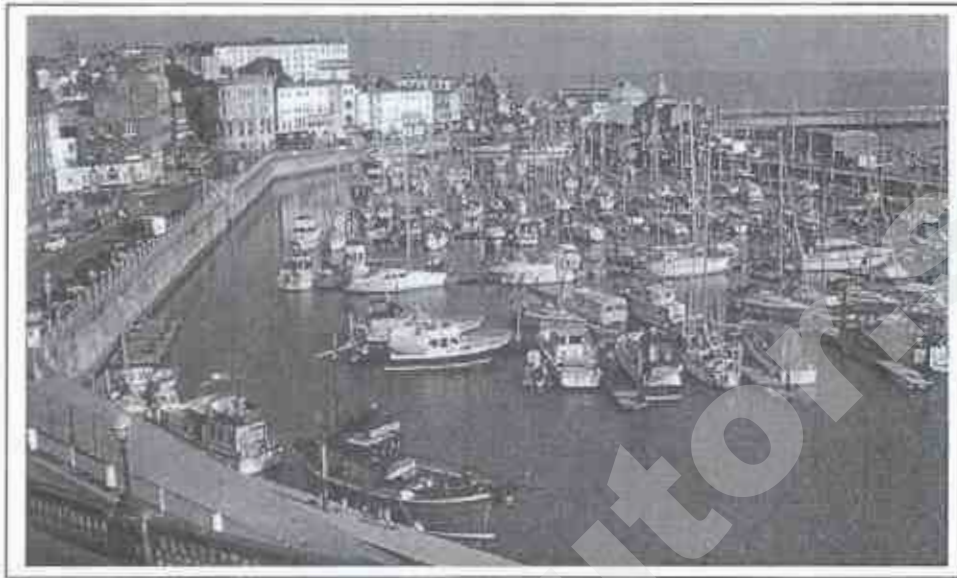


Figure 3

With reference to Figure 3 and examples you have studied, suggest how coastal areas may support different human activities. [5]

~~d "Soft engineering measures are preferred choices in protecting the coasts."~~ [6]

How far do you agree? Support your answer with examples you have studied.

- 3a With examples, suggest why it is important for Singapore to protect her coastlines. [5]
- b Figure 4 is an article about Dubai's heritage tourism.

Heritage tourism is being given a major push as Dubai works towards Expo 2020 and winning UNESCO World Heritage status for the old city.

Emirati-themed guesthouses in areas such as Heritage Village and Bastakiya, the oldest inhabited part of Dubai, are being given support by the Heritage Department and the Dubai Department of Tourism and Commerce Marketing (DTCM), to ensure visitors experience the authentic, Emirati side of the city.

Nearby, in Heritage Village, the growing popularity of heritage tourism has also been witnessed with the year-old Barjeel guesthouse which recently introduced Emirati cuisine to the menu. This has proved popular not only with tourists but with its local clientele.

"People want to experience that heritage and tradition. There were certainly no places offering Emirati food for which there is a real demand now. The camel meat dishes especially are really popular."

"People who come here want to learn more about the history of Dubai and its culture," he said.

*Adapted from <http://www.thenational.ae/uae/heritage/dubai-feeds-tourists-taste-for-tradition>*

Figure 4

- i With reference to Figure 4, describe how Dubai is intending to give heritage tourism "a major push". [4]
- ii Why is heritage tourism important to Dubai? [3]



- c Figure 5 shows features of medical and health tourism.



Figure 5

- Using examples, describe and account for the growing trend of medical and health tourism. [5]
- d 'Tourism brings both economic and environmental gains.'  
How far do you agree? Support your answer with examples you have studied. [8]

*End of paper*

*Acknowledgements:*

Figure 1: <http://www.8onclaymore.com.sg/8onclaymore-content/gallery/location-just-around-the-corner/8-on-claymore-leisure-map.jpg>

Figure 2: <http://cdn.wanderlust.co.uk/content/images/wanderlust/magazine-745.jpg?width=620&height=372>

Figure 3: <http://rentcoastalcommunities2150.org.uk/downloads/>

Figure 4: <http://www.thenational.ae/uae/heritage/dubai-feeds-tourists-taste-for-tradition>

Figure 5: <http://www.corporatedayouts.com/wp-content/uploads/2016/03/medical-tourism.jpg>

Index Number	Class	Name
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# CHIJ ST JOSEPH'S CONVENT SEMESTRAL ASSESSMENT 1



## GEOGRAPHY

2236/02

### Paper 2

Wednesday, 11 May 2016  
1 hour 30 minutes

Secondary 4 Express

Additional Materials: Writing paper  
Insert

### READ THESE INSTRUCTIONS FIRST

Write your index number, class and name on all the work you hand in.  
Write in dark blue or black pen.  
You may use a soft pencil for any diagrams or rough working.  
Do not use staples, paper clips, highlighters, glue or correction fluid.

#### Section A

Answer **Question 1**.

#### Section B

Answer **one question**.

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

At the end of the examination, attach this Cover Page on top of all your answers securely.  
Hand in the Question Paper separately.

The number of marks is given in brackets [ ] at the end of each question or part-question.  
You are reminded of the need for clear presentation of your answers.

FOR EXAMINER'S USE	
Section A	25
Section B	25
Total	50

This document consists of **7** printed pages and **1** blank page.

**Setter(s):** Miss Jeannette Ngoh

**[Turn over]**



## Section A

Answer all questions.

- 1a Study Figure 1 which shows the intake of beef per capita per year in China and United States of America between 1960 and 2012.

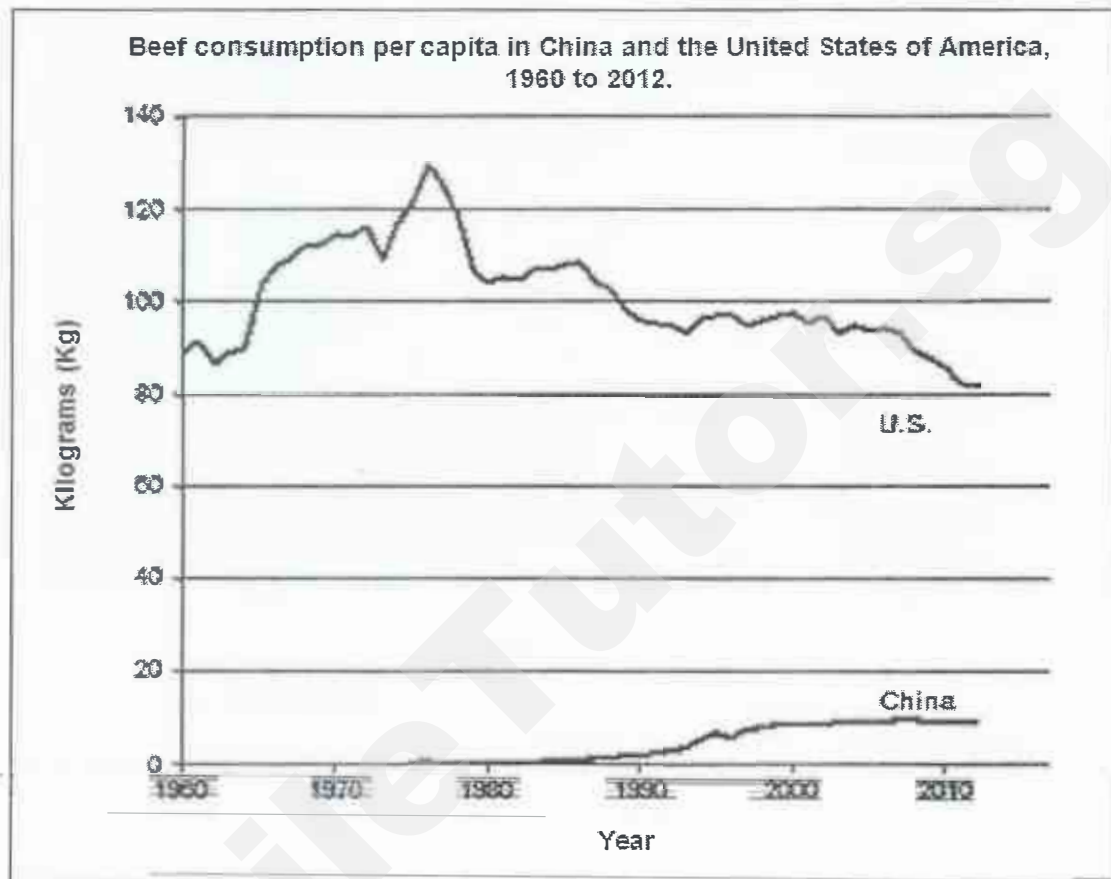


Figure 1

- (i) Using Figure 1, describe the trends in beef consumption in China and United States of America from 1960 to 2012. [5]
- (ii) Account for the trend observed in China. [4]

- b Figure 2 shows fish from a river near an agriculture farm.



Figure 2

Explain how the continuation of intensified food production may have resulted in the above effect on fish.

[4]

- c Discuss two political reasons why food shortage still occurs today.

[4]

- d 'Technological advancements will solve the challenges of food shortage.'

How far do you agree? Support your discussion with examples.

[8]

## Section B

Answer one question from this section.

- 2a Figure 3 shows the climograph of Kathmandu, Nepal and Figure 4 shows where Nepal is on the world map.

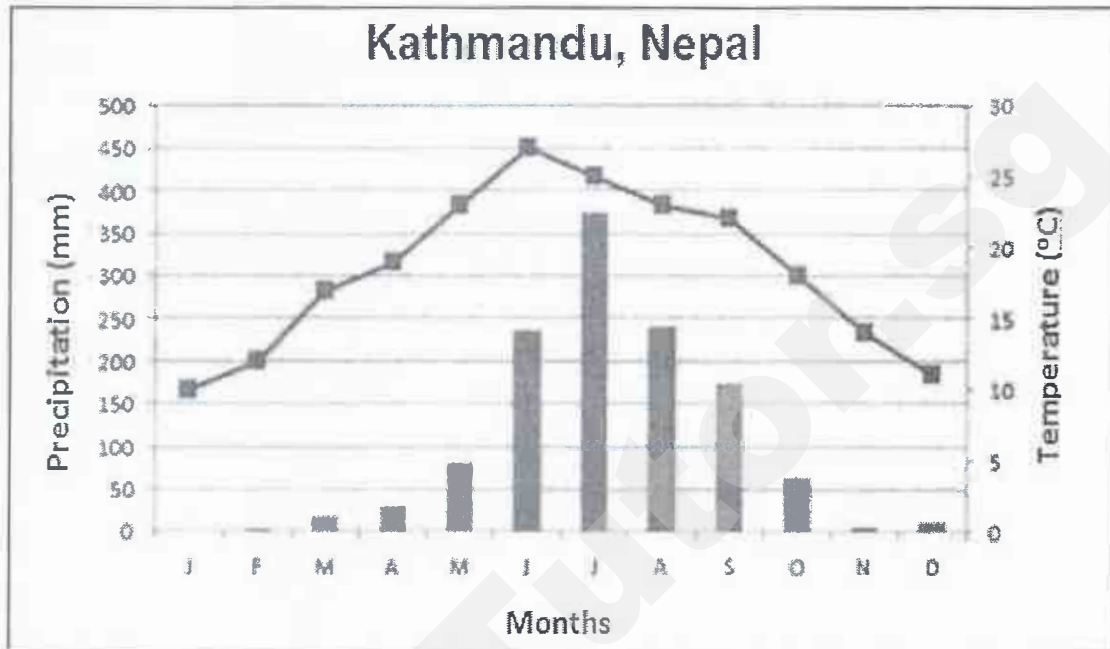


Figure 3



Figure 4

- i Using Figure 3, describe the climatic characteristics of Kathmandu. [4]
- ii With reference to Figures 3 and 4, explain why the rainfall pattern in Kathmandu is as such. [5]

- b Study Figure 5, which is an extract on an eruption of the Calbuco volcano, Chile.

Calbuco volcano is one of the most active in Chile, but its eruption took officials in the area by surprise. The nearby city of Puerto Montt - a gateway to the popular Patagonia region - has already been blanketed in a cloud of ash. It is predicted to spew lava and ash, causing much damage to the surrounding area due to its explosive nature.

Figure 5

- i With reference to Figure 5, explain the formation of the Calbuco volcano. [4]
- ii Explain how volcanic eruptions such as that of the Calbuco volcano may contribute to climate change. [4]
- c 'Floodplain management is the most effective mitigation measure to reduce the impact of tropical cyclones on a country.'
- How far do you agree? Support your answer with examples. [8]

- 3a Figure 6 (Insert) shows the distribution of plate boundaries in the world.
- Describe the distribution of divergent and convergent plate boundaries in the world. [4]
  - With reference to Figure 6, identify and explain the formation of a landform that can be found at the location marked X. [5]
- b Figure 7 provides information on the earthquake that struck Kathmandu, Nepal on 25 April 2015.

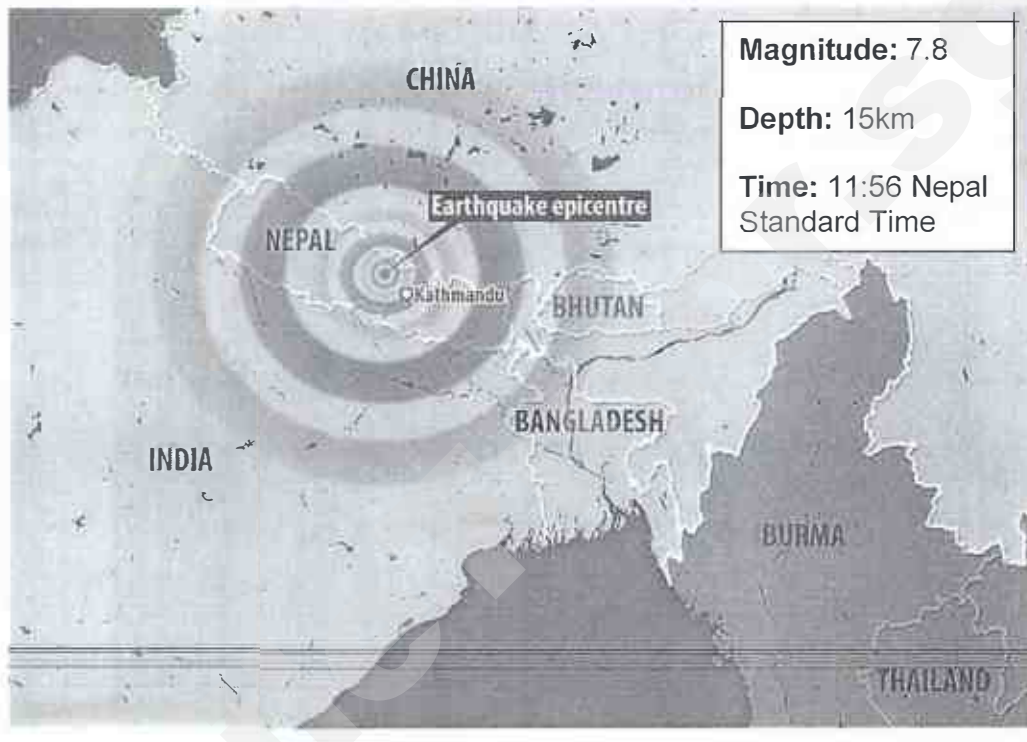


Figure 7

- With reference to Figure 7 only, discuss the factors that may have resulted in the high number of fatalities in Kathmandu. [4]
  - Other than causing deaths, discuss two impact that this earthquake might have on Kathmandu. [4]
- c 'Having effective building design is the most effective measure a country should implement when it comes to preparing for earthquakes.'
- How far do you agree? Discuss with relevant examples. [8]

End of paper

*Acknowledgement:*

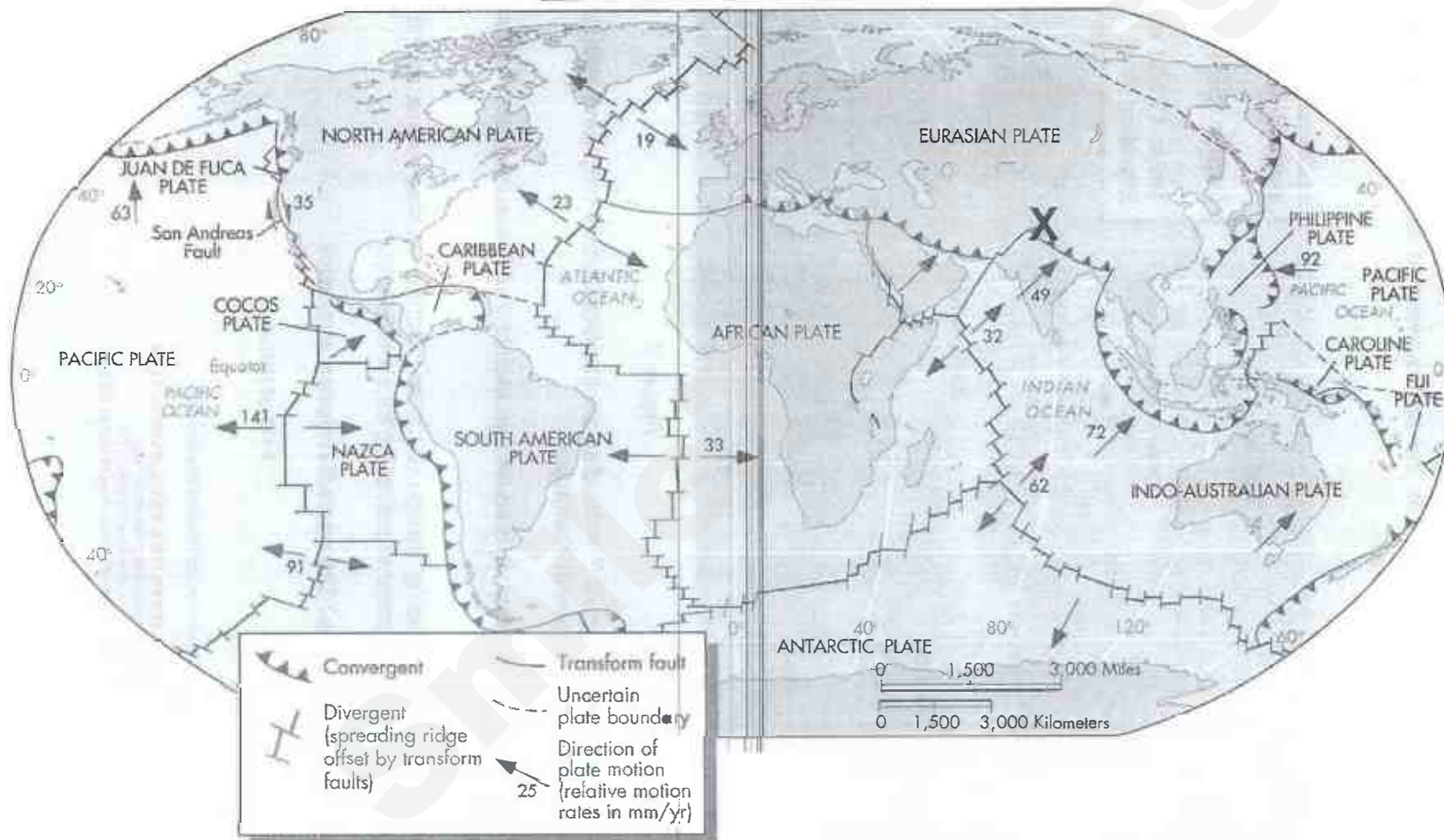
Figure 1: [http://www.earth-policy.org/data\\_highlights/2013/highlights39](http://www.earth-policy.org/data_highlights/2013/highlights39)  
 Figure 2: <http://tinyurl.com/zjdn5a5>  
 Figure 3: <http://endangeredspeciesbiomesprojects.wikispaces.com/red+panda>  
 Figure 4: <http://www.dayasrioc.top/nepal-location-on-world-map/>  
 Figure 5: <http://www.bbc.com/news/world-latin-america-32425370>  
 Figure 6: [http://www2.sunysuffolk.edu/hornj/ESC102\\_PlatesAssgnt\\_Fig2.jpg](http://www2.sunysuffolk.edu/hornj/ESC102_PlatesAssgnt_Fig2.jpg)  
 Figure 7: <http://tinyurl.com/fjv7xls>

Index Number

Class

Name

Insert for Figure 6, Question 3a



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Table of Specs 2016 SA 1 Pure Geog 2236 /02

Qn	AO1 + AO2	AO1 + AO3
1ai		5
ii		4
b		4
c	4	
d	8	
2ai		4
ii		5
bi		4
ii	4	
c	8	
3ai		4
ii		5
bi		4
i	4	
c	8	



CHIJ ST JOSEPH'S CONVENT  
SEMESTRAL ASSESSMENT 1

Marking Scheme



GEOGRAPHY

Paper 1

Secondary 4 Express



2236/01

Friday, 6 May 2016  
1 hour 40 minutes

Section A

Answer all questions in Section A.	
1	Students carried out a fieldwork activity around the Orchard Road area to find out what makes this area attractive to tourists. The students identified 6 survey sites on the map in Figure 1 (Insert) following a pre-fieldwork survey conducted.
a	<p>Suggest two possible reasons why the students decided to conduct a pre-fieldwork survey two weeks before the actual investigation. [2] AD2</p> <p>Check extent of area for students to carry out investigation given the time limit</p> <ul style="list-style-type: none"><li>Identify possible survey sites for investigation</li><li>Ascertain safety of the area in which students will conduct field work</li><li>Determine a suitable timing / day / location to carry out the survey</li><li>Identify points on the map that have a large crowd (Nicole Wang)</li><li>Familiarise themselves with the routes</li><li>Gauge sampling pool size available.</li><li>To find particular shops and facilities that cater to tourists</li><li>Find particular shops and facilities that cater to the tourists (Judith, 4D)</li></ul> <p>Too vague</p> <ul style="list-style-type: none"><li>Better idea on the crowd</li><li>X: to make the FW more smooth</li></ul> <p>Any 2 plausible reasons accepted but it has to be precise in terms and specific actions.</p>
b	<p>Students were given this guiding question: "Why do some areas in Orchard Road attract more tourists?"</p> <p>Craft a hypothesis to test this idea.</p> <p><i>"Tourists are attracted by the services and accessibility offered in the Orchard Road area."</i></p> <p>[1] AD3</p>

	<p><i>"More tourists frequent areas of Orchard Rd which offer more( affordable) shopping."</i></p> <p>Any plausible hypothesis which must carry variables that can be tested. Orchard Road must be contextualised. Vague or generic ref to places will not be accepted.</p>	
c	At each of the survey sites, students decided to approach as many people as they can. Their target was at least 30 respondents per survey site.	
	<p>Identify the sampling method chosen and discuss the effectiveness of such a method.</p> <ul style="list-style-type: none"> <li>• Random (1m)</li> <li>• No age/gender bias</li> <li>• Can cover a large population size found around Orchard Rd</li> <li>• Representative sample</li> </ul> <p>However,</p> <ul style="list-style-type: none"> <li>• May end up playing safe by asking tourists of similar characteristics since it is randomly chosen eg similar age group or type</li> <li>• Students may subconsciously identify specific features/characteristics they assume make a tourist.</li> <li>• Time wasted if students hesitate to approach random tourists.</li> </ul> <p>**Can also accept Systematic Sampling (1m)</p> <ul style="list-style-type: none"> <li>• No age/gender bias</li> <li>• Can cover a large population size found around Orchard Rd</li> <li>• Representative sample</li> </ul> <p>However,</p> <ul style="list-style-type: none"> <li>• May miss out variations or changes in the total popn eg the selected sample may belong to a similar age group or from same country of origin</li> <li>• May thus lead to biased data.</li> </ul> <p>X: Stratified sampling.</p>	[3] AO2
di	<p>The students decide they want to conduct interviews. Explain some considerations the students should bear in mind when designing their questions.</p> <ul style="list-style-type: none"> <li>• Avoid questions that may be culturally sensitive as you may offend people</li> <li>• Ask a couple of short factual questions such as name, country of origin to establish respondents' data</li> <li>• Consider wording of qns: avoid leading questions that will predetermine answers</li> <li>• Mix of closed and open-ended questions to allow a range of responses</li> <li>• Not too many so that respondents are not kept back too long</li> <li>• Avoid double-barreled questions that asks 2 qns while expecting 1</li> </ul>	[2] AO2

	answer.  ** Plausible answers can be accepted. <u>0marks</u> if no explanation given for each consideration.  X: if answer describes the purpose of the questionnaire.																						
ii	Other than questioning the integrity of the responses, identify and explain another limitation the students may face during the interview.  <ul style="list-style-type: none"><li>• Language barrier so it makes the interview difficult for both parties as answers may not be accurately deciphered.</li><li>• Respondents are not willing to interview nor are forthcoming with views to help clarify or extend explanations</li></ul> Cannot accept answers regarding rejection even before interview.	[2] AO2																					
e	Describe and explain how a landuse survey may help students to find out what makes the Orchard Road area attractive to tourists.  <u>Description (1m)</u> - Include actions <ul style="list-style-type: none"><li>• Students can <u>map out</u> the various services by walking along and observing diff types and functions of shops</li></ul> <b>OR</b> <ul style="list-style-type: none"><li>• Diff land uses are <u>represented</u> and <u>labelled</u> and then counted to determine the number of similar shops / services available</li><li>• Districts are being drawn out</li></ul> <u>Explanation (2m)</u> – Include reasons why it helps in the investigation <ul style="list-style-type: none"><li>• Landuse survey can be used to collect data on <u>how land is used</u> along a marked section of a street/road in the investigation.</li><li>• Landuse survey helps us to compare/determine the number or percentage of the different facilities and functions that may be <u>attractive to tourists</u>.</li></ul>	[3] AO2																					
f	Table 1 shows the data collected for each site, showing the reasons why tourists frequented the Orchard Road area.																						
	<table><tr><td>Survey sites</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td></tr><tr><td>Respondents</td><td>10</td><td>30</td><td>45</td><td>38</td><td>45</td><td>15</td></tr><tr><td>Why they are there</td><td>Embassies</td><td>MRTs Hotels</td><td>MRT Tangs Hotels</td><td>Galleria Hotels Eateries</td><td>NG City WismaAtria Eateries</td><td>Medical centre</td></tr></table> Table 1	Survey sites	1	2	3	4	5	6	Respondents	10	30	45	38	45	15	Why they are there	Embassies	MRTs Hotels	MRT Tangs Hotels	Galleria Hotels Eateries	NG City WismaAtria Eateries	Medical centre	
Survey sites	1	2	3	4	5	6																	
Respondents	10	30	45	38	45	15																	
Why they are there	Embassies	MRTs Hotels	MRT Tangs Hotels	Galleria Hotels Eateries	NG City WismaAtria Eateries	Medical centre																	

- (i) Using the data shown in Table 1, construct a suitable graph to represent the data.

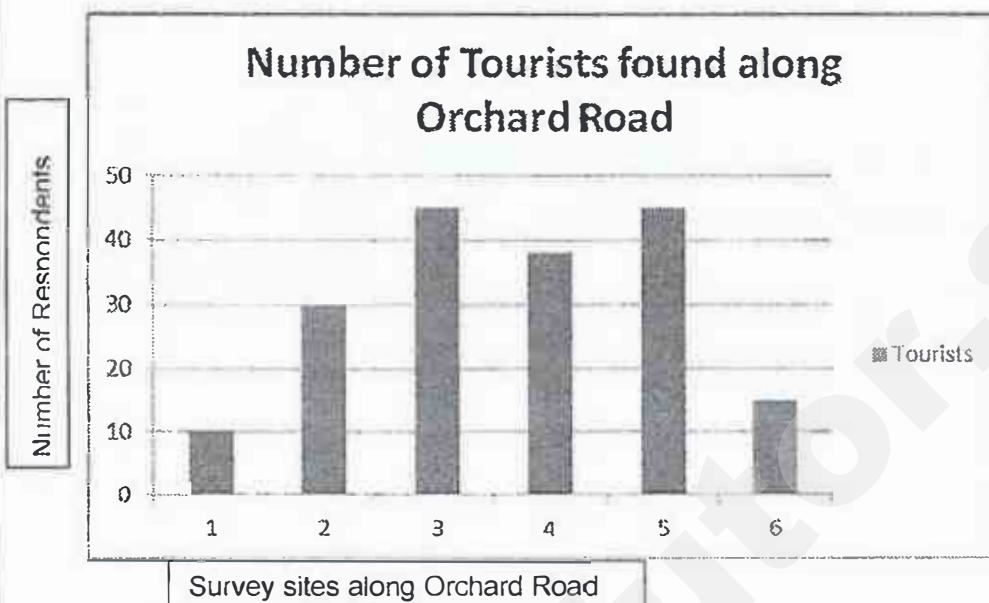
[3]  
AO3

\*\* accept either Bar Graph or Pie chart.

Title: 1m

X and Y axis correctly labelled : 1m

Data accurately represented : 1m



Other possible types of graph:

- Compound that shows different reasons instead of number of tourists. Such graphs then should carry the following points:

Title: Reasons why people visit Orchard Road

x-axis: Why they were there

y-axis: Respondents

- (ii) Discuss the reliability and validity of data shown in Table 1.

[4]  
AO3

#### Reliability

- Number of respondents at least 30 for better reliability
- If the survey was carried out on a weekend, Tourists from countries nearer to Spore may increase, allowing for a more reliable data.

Not reliable:

- May not have fully represented the reasons why the tourists are at specific sites.
- Unreliable. Students asked to interview as many people as they could and some respondents could be locals and not tourists who are visiting.

Validity:

- Valid as FW carried out along a tourist area eg Orchard Rod which has a range of facilities and services catering to tourists.
- Valid as different methods eg interviews and landuse survey used to

observe and obtain data for analysis. Such methods can help to validate the hypothesis

Not valid:

- Choices of the 6 sites are questionable since there is no known criteria to select them
- Some sites have overlapping services and facilities and it is difficult to validate hypothesis
- Depending on the time and day of fieldwork, spread of respondents could differ, giving rise to diff data for each site.

- g One group of students wanted to investigate if there was negative environmental impact of tourism along Orchard Road. Table 2 shows the collected data.

[B]  
AO3

Positive aspects	2	1	0	-1	-2	Negative aspects
Little litter	8	10	6	19	15	Much litter
High pedestrian count	20	15	8	11	18	Low pedestrian count
Well kept buildings	16	14	10	5	15	Buildings look dull
Lush greenery	17	19	8	2	5	Hardly any greenery
Clean air quality		12	13	6	10	Foul smelling air

Table 2

Suggest some conclusions the students can make using the data collected.


- Some aspects of the survey show negative impact such as that of litter./ and or air pollution.
- 34 people seem to think there is more litter around Orchard Rd as with 16 who felt the air was foul smelling compared to 18 and 12 people who think otherwise respectively.
- However, some felt there was a Positive impact : 30 people felt that the buildings were well kept while 36 of them seemed to think Orchard Rd had more greenery.
- However, the 0 responses for clean air quality may not validate data so no concrete conclusion can be made.

\*\*reference to litter and air quality are regarded as similar points under Pollution.

Answers should quote data from the table, while extracting relevant aspects to conclude students' original hypothesis that tourism has a negative impact on the environment.

At least 1m awarded to data quoted. Any 2 conclusions which are logical and analysed from the table.



h	<p>The students realized there could be some limitations in the data collected that may skew their conclusion to their investigation.</p> <p>Explain a limitation identified and suggest how it may be improved.</p> <ul style="list-style-type: none"> <li>• The element of High Pedestrian flow is constructed as a Positive aspect. With higher pedestrian flow, this should have greater negative impact on the environment. Other environmental considerations such as traffic flow and noise level could have been included to build up a stronger base for the survey to test the perception of the environment. Suggestion: Thus this should be designed as Negative aspects (littering) to reflect a more accurate perception in the survey. (1m)</li> <li>• Suggestion: They should get rid of the neutral '0' option.</li> <li>• Explanation: This is because the neutral option will give the respondents an opportunity to sit on the fence (1m) and not pick a negative or positive option thus the students will have lesser (useless) data. Insufficient representation of how people view and perceive the environmental aspects of orchard road (1m).</li> </ul> <p>* Suggestions should be an improvement to the perception survey, or to add in other methods to improve.</p>	[2] AO3
	<p><b>Section B</b></p> <p><b>Answer one question from Section B.</b></p>	
2a	Study Figure 2 which shows a coastline.	
	 <p style="text-align: center;">Figure 2</p>	
i	<p>Draw and label a field sketch of the coastline shown in Figure 2.</p> <p>Sketch of likeness – 1m Labels expected :</p> <ul style="list-style-type: none"> <li>• headland and bay 1m</li> </ul>	[3] AO3

	<ul style="list-style-type: none"> <li>steep rugged cliffs in the background 1m</li> <li>Gently sloping beach 1m</li> <li>coarse sand / pebble beach 1m</li> <li>calm, constructive waves 1m</li> </ul> <p>any 2 labels</p>	
ii	<p>Explain how wave refraction may bring about erosion and deposition along this coastline.</p> <ul style="list-style-type: none"> <li>Indented coastline with headlands and bays present diff depths</li> <li>In deeper waters, wave approaches with speed and move much faster than the waves approaching the bay</li> <li>Greater erosion may concentrate and occur about the front of the headland.</li> <li>Friction with the sea bed as waves approach the shallower shoreline</li> <li>So that the wave front becomes distorted or refracted as velocity is reduced.</li> <li>Since the paths of the waves in the bay are diverging or spreading out, wave energy is much reduced, allowing deposition to occur along the bay.</li> </ul>	[4] AO3
b	<p>Using examples you have studied, describe and explain how pollution and climate change may threaten the survival of coral reef systems.</p> <p><b>Pollution:</b> Reefs in close proximity to human populations, however, will also be faced with local stresses, including poor water quality from land-based sources of pollution. In the Caribbean, for example, approximately 80 percent of ocean pollution originates from activities on land. As human populations expand in coastal areas, development alters the landscape, increasing runoff from land. Runoff often carries large quantities of sediment from land-clearing, high levels of nutrients from agricultural areas and sewage outflows, and pollutants such as petroleum products and pesticides. These land-based sources of pollution threaten coral reef health.</p> <p>sediment deposited onto reefs smothers corals and interferes with their ability to feed and reproduce. Finally, pesticides interfere with coral reproduction and growth. Sewage discharge and runoff may also introduce pathogens into coral reef ecosystems.</p> <p>Abandoned fishing nets and other gear—often called "ghost nets" because they still catch fish and other marine life despite being abandoned—can entangle and kill reef organisms and break or damage reefs. Even remote reef systems suffer the effects of marine debris. The Northwestern Hawaiian Island reefs are particularly prone to the accumulation of marine debris because of their central location in the North Pacific</p> <p><a href="http://celebrating200years.noaa.gov/visions/coral/side.html">http://celebrating200years.noaa.gov/visions/coral/side.html</a></p>	[5] AO2

**Climate Change:** Coral reefs are very fragile sensitive ecosystems that can only tolerate a narrow temperature range. The effects of climate change on corals has been bleaching. When the ocean warms, the oxygen content reduces, and corals become 'bleached'.

The heat affects the tiny algae which live symbiotically inside the corals and supply them with food. The heat stress damages the algae and in consequence leads to coral death.

Global warming could now mean a death sentence for many coral reefs. If the present rate of destruction continues, most of the world's coral reefs could be killed within our lifetime. The Seychelles suffered a severe coral bleaching event in the late 1990s

[http://www.panda.org/about\\_our\\_earth/aboutcc/problems/impacts/coral\\_reefs/](http://www.panda.org/about_our_earth/aboutcc/problems/impacts/coral_reefs/)

c Figure 3 shows human activities in a coastal community.



Figure 3

With reference to Figure 3 and examples you have studied, suggest how coastal areas may support different human activities.

[5]  
AO3

Planned built-up area of buildings fronting coast – purpose of residential and businesses that may be owned by locals, offering services ranging from F & B, Banking, Tourism related ( accommodation types), rental of water activities equipment, etc. Buildings are in a linear fashion showing intensive landuse, with buildings aligned side by side.

Well planned roads along the wharf allow for easy movement in and out of the town. Boats that are moored in the harbor may be used both for leisure sailing and fishing activities by locals and tourists. Some of the boats may be residential in purpose.



In some other countries, pp live in stilt houses as a cluster, connected by wooden walkways to allow movement of the people within the community. Some examples include Hong Kong, Tai O Stilt Village  
<http://www.nextstophongkong.com/tai-o-fishing-village/>

Kukup, in P Masia. Air Masin is one village with stilt houses where locals are mainly fish farmers.

Boats are used to facilitate transportation to and from the village to the fish farms. These villages have also become places for seafood dining as well as visits by foreign tourists, bringing in much needed income to locals to support them.

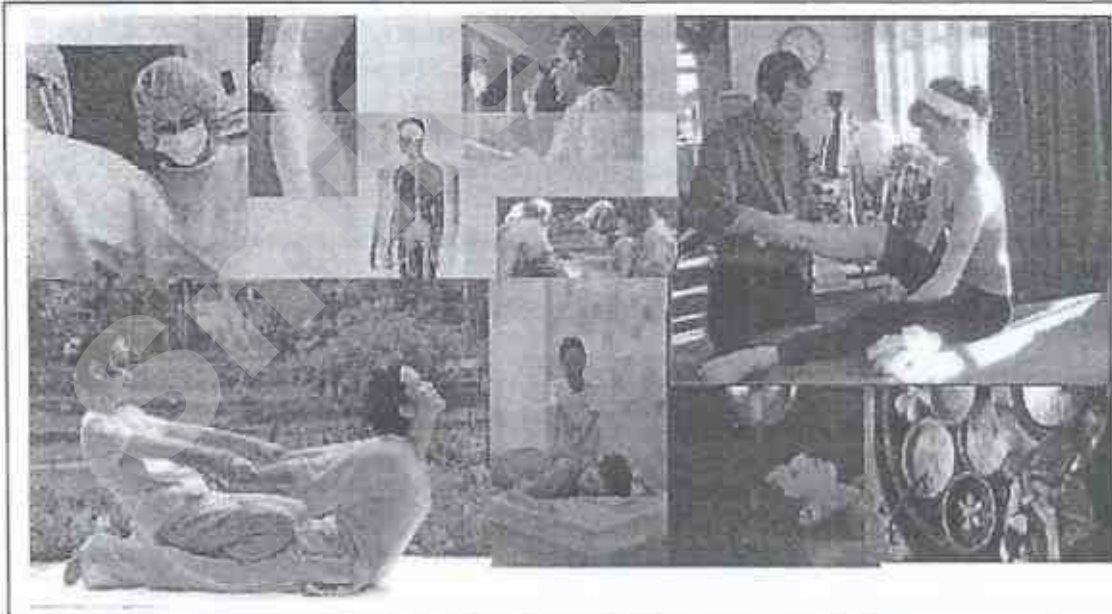
*Answer should make references to the coastal community shown in the photo up to 2m maximum. 1m is credited for specific details seen in the picture that will help to further elaborate the purpose and intent in the photo. Other examples not of the photo should be expected up to 2m maximum.*

- d "Soft engineering measures are preferred choices in protecting the coasts."  
 How far do you agree? Support your answer with examples you have studied.

[ 9 ]  
 AD2

L1 1-3	Stand on large / small extent to agreeing with the statement. Overview of what engineering measures aim to do. List of both hard and soft engineering measures. Little attempt to discuss soft engineering measures to show balance of its effectiveness and limitations. No examples given.  If only 1 soft engr measure is discussed ( regardless of it being balanced) – mark is also in this band.
L2 4-6	Some attempts to discuss <u>at least 2 soft engineering measures</u> . Discussion must show both effectiveness and limitation of each measure. Case studies or specific examples should be included in the discussion.
L3 7-8	In addition to L2, there should be a counter discussion of at least 1 hard engr measure. This discussion should feature both effectiveness and limitation of this hard engr measure.  Conclusion by reiterating original stand on extent of agreement and to acknowledge value of both soft and hard engr measures to manage the coasts.

3a	<p>With examples, suggest why it is important for Singapore to protect her coastlines.</p> <p>Spore is flat and low lying with most land at less than 15m in ht. In addition, land scarcity means we have reclaimed land eg along ECP along southeastern coast – costly but nec to alleviate land shortage.</p> <p>Susceptible to flooding during storms, natural erosion process has threatened economic landuse behind the ECP area.</p> <p>To support high/dense population, landuse apportioned for various purposes that include economic, defence, social, educational, residential and recreational. Land scarcity means intensive landuse that may support diff activities. Areas in Marine Parade, Changi Village, West Coast etc are heavily populated and very close to coasts. Need to manage coastal areas to ensure future sustainability.</p> <p>Sensitive mangrove habitats eg Sungei Buloh Nature Reserve, around Spore also depend on protected coastlines to thrive and are impt ecosystems that add to biodiversity in Spore's nat environment.</p> <p><i>Answer should make references to the Singapore context. Reasons should explain purpose of landuse 4m maximum. 1m is credited for named examples to support answer.</i></p>	[5] AO2
b	<p>Figure 4 is an article about Dubai's heritage tourism.</p> <div data-bbox="279 1070 1326 1771" style="border: 1px solid black; padding: 10px;"> <p>Heritage tourism is being given a major push as Dubai works towards Expo 2020 and winning UNESCO World Heritage status for the old city.</p> <p>Emirati-themed guesthouses in areas such as Heritage Village and Bastakiya, the oldest inhabited part of Dubai, are being given support by the Heritage Department and the Dubai Department of Tourism and Commerce Marketing (DTCM), to ensure visitors experience the authentic, Emirati side of the city.</p> <p>Nearby, in Heritage Village, the growing popularity of heritage tourism has also been witnessed with the year-old Barjeel guesthouse which recently introduced Emirati cuisine to the menu. This has proved popular not only with tourists but with its local clientele.</p> <p>"People want to experience that heritage and tradition. There were certainly no places offering Emirati food, which it seems there has been a real demand for. The camel meat dishes especially are really popular."</p> <p>"People who come here want to learn more about the history of Dubai and its culture," he said.</p> <p><small>Adapted from <a href="http://www.thenational.ae/uae/heritage/dubai-feeds-tourists-taste-for-tradition">http://www.thenational.ae/uae/heritage/dubai-feeds-tourists-taste-for-tradition</a></small></p> </div> <p style="text-align: center;">Figure 4</p>	
i	<p>With reference to the article above, describe how Dubai is intending to give heritage tourism "a major push".</p>	[4] AO3

	<ul style="list-style-type: none"> <li>• Dubai is working towards Expo 2020 and winning UNESCO World Heritage approval to elevate their status of a heritage rich tourist destination.</li> <li>• Support is given by govt depts such as the Heritage dept and the Dubai Dept of Tourism and Commerce Marketing ( DTCM)</li> <li>• Focus on Emirati culture through boutique hotels that capture quaint and traditional housing in a cultural area</li> <li>• Introduce exotic local flavours into the menu so that tourists may experience</li> </ul>	
ii	<p>Why is heritage tourism important to Dubai?</p> <p>Authentic Emirati way of life popular with Tourists as well as local clientele : helps locals to preserve their traditions.</p> <p>To help raise more awareness and knowledge of the history &amp; heritage of Dubai to overseas tourists.</p> <p>Winning UNESCO award will elevate to international status and global recognition and be listed as a World Heritage site.</p> <p>** if generic answer like ' contributes to economy' - max 1m.</p>	[3] AO3
c	<p>Figure 5 shows features of medical and health tourism.</p>  <p>Figure 5</p>	
	<p>Using examples, describe and account for the growing trend of medical and health tourism.</p> <ul style="list-style-type: none"> <li>• Growing number travelling internationally for med and health services.</li> </ul>	[5] AO3



**Medical:**

- Many are from DCs and they have higher disposable income and are more educated and well connected to information regarding treatments
- Varied choices in countries that boasts of specialized treatments with highly qualified doctors.
- Singapore is an eg of a medical hub where many from the region of SEA and Asia Pacific come over to seek treatment.
- A range of public and private hospitals eg NUH, Raffles Hosp, Paragon and Camden medical hubs are easily accessible
- South Korea is a popular destination for cosmetic surgery, with highly skilled doctors and advanced technology.

**Health:** Increasing in popularity as more countries advertising their natural spas/ hotspots through publicity, higher workload and stress in NIEs and DCs resulting in higher demand for such tourism

- Health tourism include visits to spa towns such as Rotorua in NZ, Beppu in Kyushu, and many Japanese onsens that dot the country.
- The minerals found in the water are said to be therapeutic.
- There are those who seek massages as a form of well being and relaxation from stresses.
- Indonesia, Thailand are two countries that are known for their spa treatments.

Answers should cover both Medical 2m and Health tourism 2m. 1m for examples embedded in the answers.

- d 'Tourism brings both economic and environmental gains.'  
How far do you agree? Support your answer with examples you have studied.

[8]  
AO2

Level	Descriptors for marking	Marks
L1	<ul style="list-style-type: none"> <li>• Unpacks question about the impact of tourism on destination.</li> <li>• Brief description about the economic or environmental impact of tourism.</li> <li>• Little or no elaboration. No example given.</li> </ul>	1-3
L2	<ul style="list-style-type: none"> <li>• Describes the positive economic and environmental impact of tourism.</li> <li>• Some balance of these two impact.</li> <li>• Examples given to support these impact.</li> </ul> <p>Generic or No examples given – award up to max of 5m.</p>	4-6
L3	<ul style="list-style-type: none"> <li>• Describes and evaluates the presence of positive and negative economic and environmental impact</li> </ul>	7-8

- Balance discussion between positive and negative impact of tourism.
- Evaluation can come in the form of acknowledging that there can also be negative economic impact and environmental impact of tourism.
- Brings in another impact not stated in the question.
- Specific egs or Case Studies evident.
- Final analysis to sum up discussion.

#### Introduction:

- Unpack the idea that tourism brings with it impact that can be organized into different categories.
- There can be positive or negative ones in all the categories: social, economic, and environmental.
- The assumption in the question is that there are economic benefits and environmental threats due to tourism. These are the given factors that need to be addresses.

#### Body:

- Paragraph 1: Positive economic impact of tourism (evaluate the extent of impact, can bring in negative economic impact in the evaluation)
- Paragraph 2: Positive environmental impact of tourism
- Paragraph 3: Possible to bring in Social impact of tourism

#### Conclusion:

- Students can take a stand or sum up ideas about the extent of each type of impact.
- EG The extent of impact would be place specific, dependent on the different inputs of stakeholders to resolve potential problems. Therefore, it would not be accurate the claim that tourism indeed bring\$ more positive economic and environmental ones than negative ones.

***End of paper***

#### *Acknowledgements:*

Figure 1: <http://www.8onclaymore.com.sg/8oc/wp-content/gallery/location-just-around-the-corner/8-on-claymore-leisure-map.jpg>

Figure 2: <http://cdn.wanderlust.co.uk/contentimages/wanderlust/magazine-745.jpg?width=620&height=372>

Figure 3: <http://kentcoastalcommunities2150.org.uk/downloads/>

Figure 4: <http://www.thenational.ae/uae/heritage/dubai-feeds-tourists-taste-for-tradition>

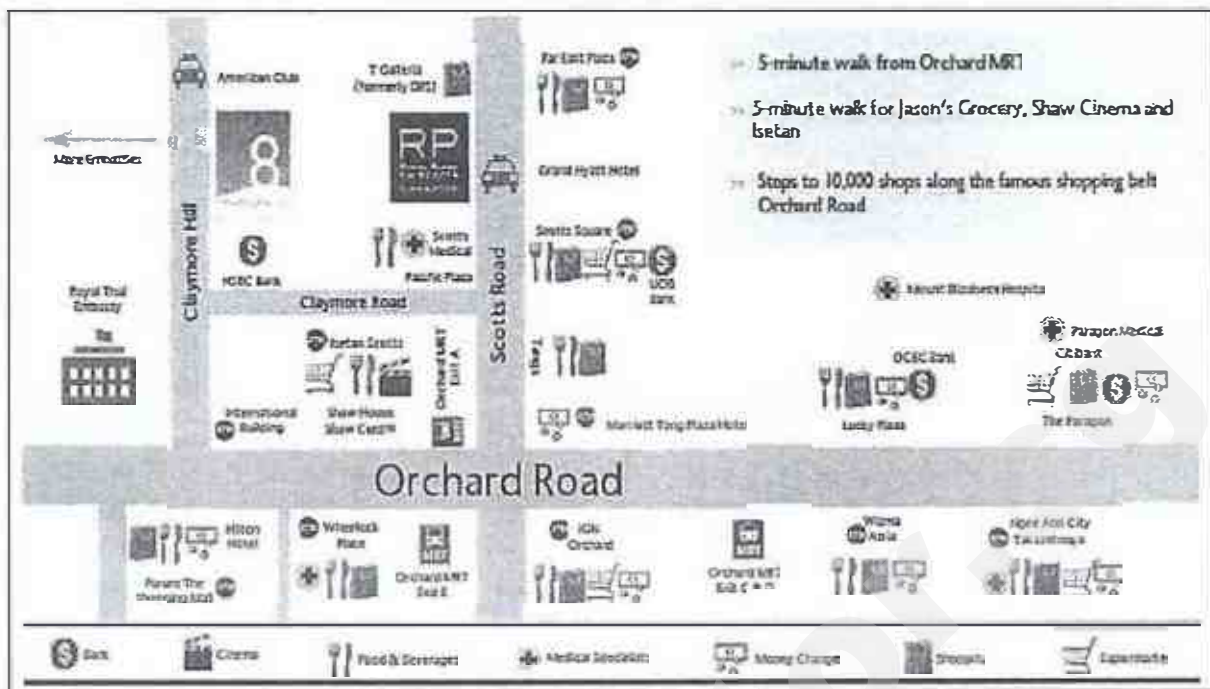
Figure 5: <http://www.corporatedayouts.com/wp-content/uploads/2016/03/medical-tourism.jpg>

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Table of Specs

<i>Qn</i>	<i>AO1 + AO2</i>	<i>AO1 + AO3</i>
<i>1a</i>	2	
<i>B</i>		1
<i>C</i>	3	
<i>Di</i>	2	
<i>Dii</i>	2	
<i>E</i>	3	
<i>Fi</i>		3
<i>Fij</i>		4
<i>G</i>		3
<i>H</i>		2
<i>2ai</i>		3
<i>Aii</i>		4
<i>B</i>	5	
<i>C</i>		5
<i>D</i>	8	
<i>3a</i>	5	
<i>Bi</i>		4
<i>Bii</i>		3
<i>C</i>		5
<i>d</i>	8	

Insert : Figure 1 for Question 1



Index Number	Class	Name
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# CHI J ST JOSEPH'S CONVENT SEMESTRAL ASSESSMENT 1



## GEOGRAPHY

Paper 2

Secondary 4 Express

2236/02

Wednesday, 11 May 2016  
1 hour 30 minutes

Additional Materials: Writing paper  
Insert

### READ THESE INSTRUCTIONS FIRST

Write your index number, class and name on all the work you hand in.  
Write in dark blue or black pen.  
You may use a soft pencil for any diagrams or rough working.  
Do not use staples, paper clips, highlighters, glue or correction fluid.

#### Section A

Answer Question 1.

#### Section B

Answer one question.

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

At the end of the examination, attach this Cover Page on top of all your answers securely.  
Hand in the Question Paper separately.

The number of marks is given in brackets [ ] at the end of each question or part-question.  
You are reminded of the need for clear presentation of your answers.

FOR EXAMINEE'S USE	
Section A	25
Section B	25
Total	50

This document consists of 6 printed pages and 1 blank page.

Setter(s): Miss Jeannette Ngoh

[Turn over]



## Section A

Answer all questions.

- 1a Study Figure 1 which shows the intake of beef per capita per year in China and United States of America, between 1960 and 2012.

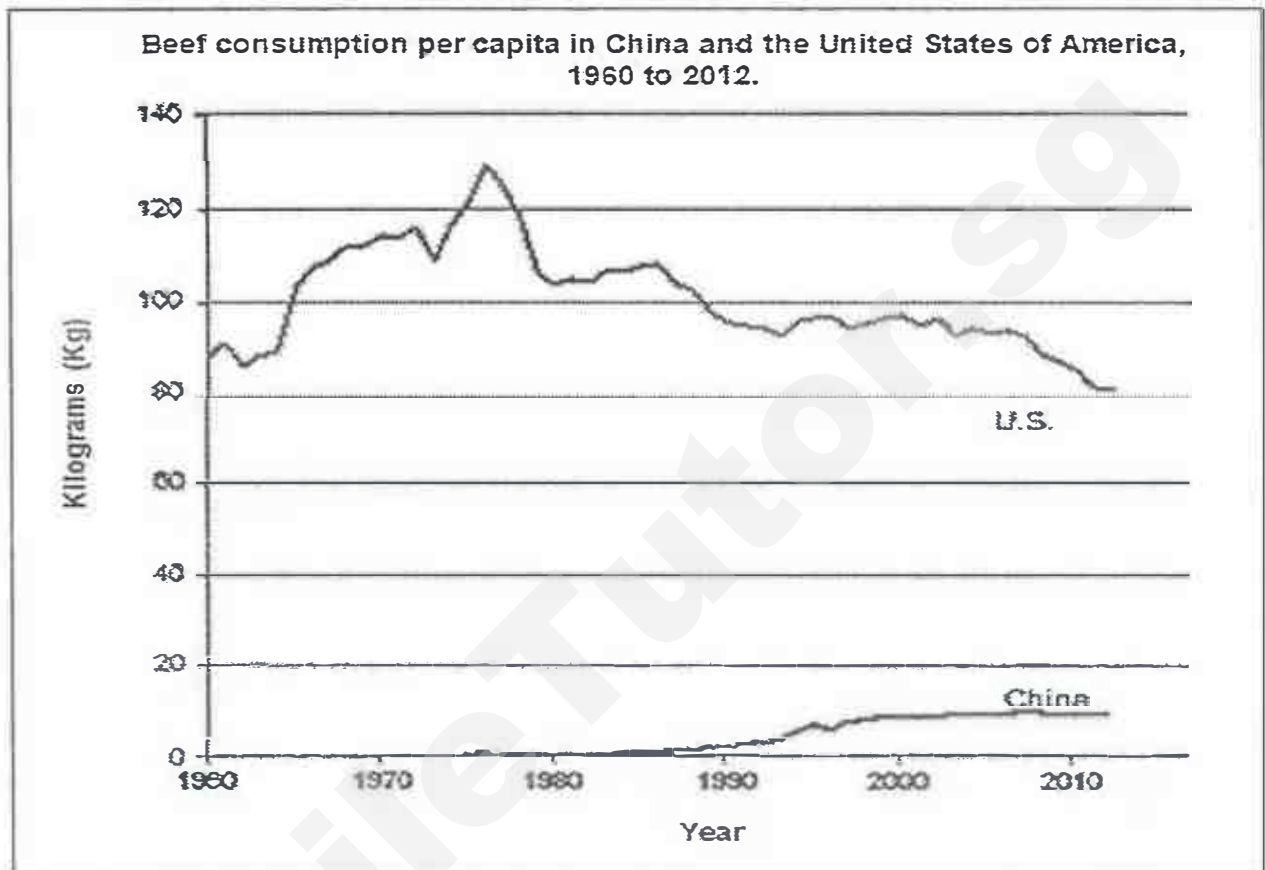


Figure 1

- (i) Using Figure 1, describe the trends in beef consumption in China and United States of America from 1960 to 2012.

[5]

- US had an increase in beef consumption from 1960 to 1980, peaking at 1980
- before decreasing in consumption till 2012.
- China had little to no consumption of beef from 1960 to 1975,
- before slowly increasing in consumption from 1975 to 2012.

2 marks for US, 2 marks for China

1 mark reserved for stats, students need to state per capita per year in order to get stats marks

(ii) Account for the trend observed in China.

[4]

- China has become more developed over the years. This would lead to rising income amongst the Chinese, allowing them to have more **disposable income** to purchase more expensive food types like meat, such as beef.
- **Food preferences** may also change due to globalization, making it possible for **international fast food chains** opening in China which may increase the consumption of beef
- **Population growth** increases food demand (max 1 mark)
- **May be due to religious beliefs** (max 1 mark)

*2 marks per well explained point*

*As points may be interlinked, students should also be marked based on their explanation rather than just point marking.*

b Figure 2 shows fish from a river near an agriculture farm.



Figure 2

Explain how the continuation of intensified food production may have resulted in the above effect on fish.

[4]

- This may be due to the overuse of fertilisers and pesticides which cause chemicals to become concentrated in the soil where crops are grown
- Over time, these chemicals seep into groundwater, contaminating it. It may also be washed into streams and rivers by surface runoff.
- When this happens, these chemicals become nutrients for algae to grow on the surface of the water, also known as **eutrophication**.
- This algae bloom then depletes oxygen in the water and block sunlight reaching aquatic plants, thereby resulting in the death of both aquatic plants and other living organisms such as the fish seen in Figure 2.

*1 mark per point*

*1 mark reserved for the term eutrophication and its definition*

c Discuss two political reasons why food shortage still occurs today. [4]

- Civil strife: when a country faces internal conflicts, which may include riots, unrest or civil war. Can lead to disputes over control of resources that affect food production such as land and water, hindering food production.
- Poor governance such as corruption, policy errors and inability to implement policies can cause food shortages as some governments may prioritise other developmental needs of the country over ensuring food security. This may leave local farmers with smaller plots for farming, leading to a smaller crop yield.
- Stock piling → needs to be linked to increase in food prices, causing LDCs and poorer countries to be unable to purchase food

2 marks for each well explained point

d 'Technological advancements will solve the challenges of food shortage.'

How far do you agree? Support your discussion with examples.

[8]

L1 (1-3)	<ul style="list-style-type: none"> <li>- Introduction to why there is food shortage</li> <li>- Addresses challenges of food shortage</li> <li>- Listing of the various reasons why there is a need to increase intensity of production</li> <li>- Brief description but does not specify how tech advancements increases the intensity of food production and supply</li> <li>- No examples</li> </ul>
L2 (4-6)	<ul style="list-style-type: none"> <li>- Introduction to why there is food shortage</li> <li>- Addresses challenges of food shortage</li> <li>- Listing of the various reasons why there is a need to increase intensity of production</li> <li>- Brief description but does not specify how tech advancements Brings in another reason and shows some attempt to discuss it</li> <li>- Analyses how each reason (1 to 2 other reasons) contributes to the increase in intensity and provides examples for reasons</li> </ul> <p>No examples: max 4/5 marks (depending on how thorough the preceding answer is)</p>
L3 (7-8)	<ul style="list-style-type: none"> <li>- Has all points in L2</li> <li>- Detailed analysis, well balanced arguments with concluding paragraph</li> </ul>

## Section B

Answer one question from this section.

- 2a Figure 3 shows the climograph of Kathmandu, Nepal and Figure 4 shows where Nepal is on the world map.

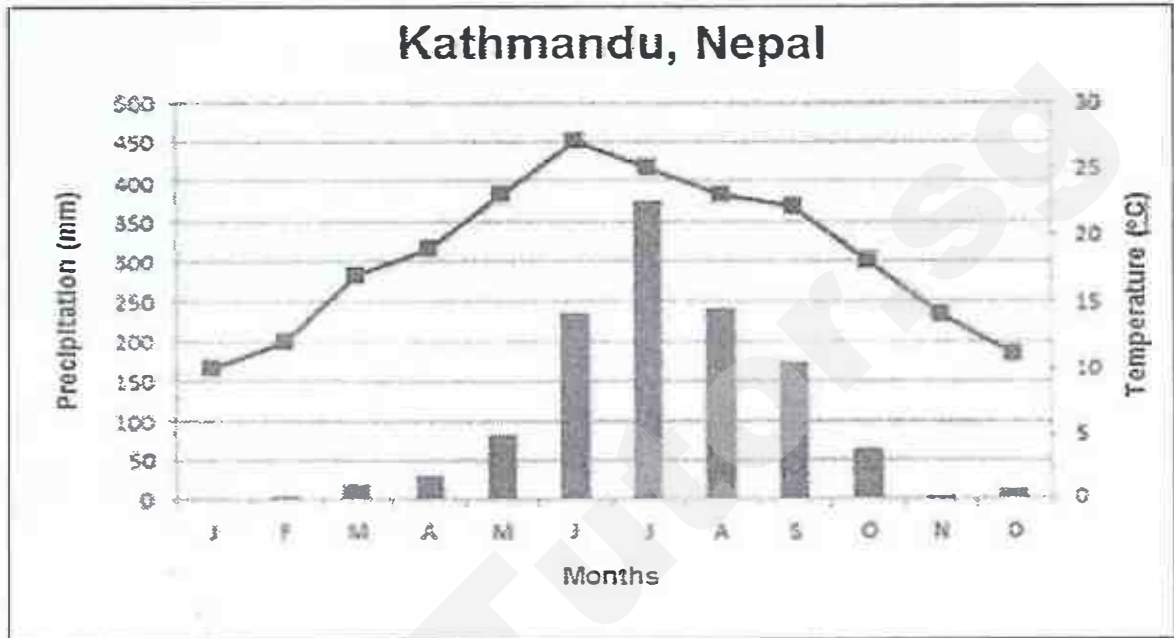


Figure 3

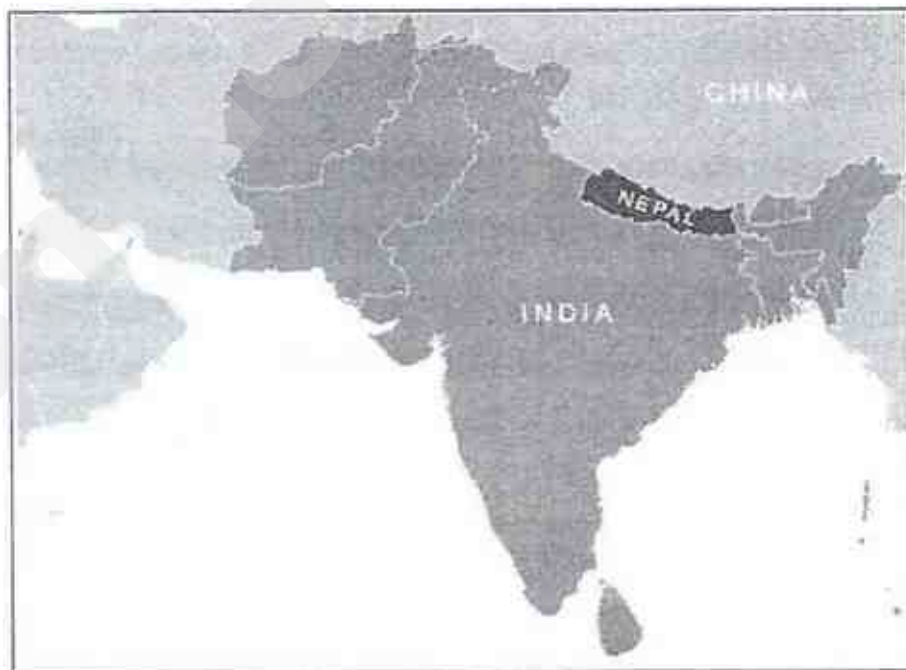


Figure 4



i Using Figure 3, describe the climatic characteristics of Kathmandu.

[4]

Temperature:

- Temperature fluctuates over the months, with a range from 10°C to 27°C. Annual temperature range of 17°C – (for this point, marked is only given if stat is correct)
- Temperature starts low at 10°C in Jan, peaks at 27°C in June,
- and drops to 11°C in Dec.

Rainfall:

- distinct wet and dry season
- Rainfall fluctuates over the months, with a range from 0mm to 375mm, with a period of little to no rainfall between November to February.
- Starts at 0mm in Jan, the amount of rainfall gradually increases, peaking at 375mm in July.
- It then decreases to about 10mm in Dec.

*2 marks for rainfall and 2 marks for temperature*

*1 mark reserved for use of statistics, must have 1 set for rainfall, 1 set for temperature - Max 3 marks if no stats*

ii With reference to Figure 3 and 4, explain why the rainfall pattern in Kathmandu is as such.

[5]

- As seen in the climograph of Kathmanthu, rainfall increases and is highest between the months of June and September, which are also the months in which the Southwest monsoon occurs, when it is summer in the northern hemisphere. (1)
- Lower temperature causes the air to be cold and dense, exerting a greater force on the earth's surface and results in an area of high pressure over Australia, whereas higher temperatures in Central Asia causes the area to have lower pressure.(1)
- Due to the difference in air pressure between Central Asia and Indian subcontinent and Australia, air from Australia moves to the Indian subcontinent and central Asia as the southeast monsoon winds. (1)
- These winds get deflected when it crosses equator due to coriolis effect and become southwest monsoon winds. The winds pick up moisture as it travels over Indian Ocean and brings heavy rain to the Nepal between June and September, as seen in the climograph. (1)
- Months between Nov to Mar have little to no rain because winds blowing through Nepal are generally dry and cold as it blows across cold land; not picking up any moisture, thus do no bring rain to Nepal in these months. (1)

b Study Figure 5, which is an extract on an eruption of the Calbuco volcano, Chile.

Calbuco volcano is one of the most active in Chile, but its eruption took officials in the area by surprise. The nearby city of Puerto Montt - a gateway to the popular Patagonia region - has already been blanketed in a cloud of ash. It is predicted to spew lava and ash, causing much damage to the surrounding area due to its explosive nature.

Figure 5

i With reference to Figure 5, explain the formation of the Calbuco volcano. [4]

- Stratovolcanoes
- Due to its high silica content, they are very explosive and when erupted, magma is ejected onto the earth as lava, solidifying to form a small volcanic cone around the vent. The subsequent eruption covers the soft **ash** and **layers** over time (idea of layering)
- Over time, a tall volcano with **steep sides** and a **gentle base** is formed.

*1 mark per point*

ii Explain how volcanic eruptions such as that of the Calbuco volcano may contribute to climate change. [4]

- Large volumes of sulphur dioxide and ash particles are released into the atmosphere.
- When sulphur dioxide reacts with water, it forms sulphur-based particles in the atmosphere.
- These particles, together with dust and ash, reflect solar energy back into space, resulting in global dimming.
- This causes global dimming, which **temporarily** causes global temperatures to **decrease** for months or years.

*1 mark per point*

c 'Floodplain management is the most effective mitigation measure to reduce the impact of tropical cyclones on a country.'

How far do you agree? Support your answer with examples. [8]

L1 (1-3)	<ul style="list-style-type: none"> <li>- Introduction to what tropical cyclones are and why we need to have mitigation measures</li> <li>- Listing of the various mitigation measures</li> <li>- Define what flood plain management is</li> <li>- Brief description but does not specify how floodplain management is as a mitigation measure</li> <li>- Little or no evaluation</li> <li>- No examples</li> </ul>
L2 (4-6)	<ul style="list-style-type: none"> <li>- Introduction to what an tropical cyclones is and why we need to prepare before a tropical cyclone strikes</li> <li>- Define what floodplain management is</li> <li>- Some attempt to explain and discuss what floodplain management is is</li> <li>- Brings in another 1-2 mitigation measure and shows some attempt to discuss it</li> <li>- Analyses effectiveness of the measures and provides examples for both measures</li> </ul> <p>No examples: max 4/5 marks (depending on how thorough the preceding answer is)</p>



L3 (7-8)	<ul style="list-style-type: none"> <li>- Has all points in L2</li> <li>- Detailed analysis, well balanced arguments with concluding paragraph</li> </ul>
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3a Figure 6 (Insert) shows the distribution of plate boundaries in the world.

i Describe the distribution of divergent and convergent plate boundaries in the world. [4]

- Most of the divergent plate boundaries are along oceanic plates such as between the North American plate and with the Eurasian plate.
- The Pacific Ring of Fire is where most of the convergent plate movement takes place.
- And can be found between plates such as between the Nazca and South American plate.

*1 mark per point, and each point MUST have a pair of plates (example) in order to validate point*

ii With reference to Figure 6, identify and explain the formation of a landform that can be found at the location marked X. [5]

- Fold mountains
- Two continental plates (**Indian and Eurasian**) move towards each other and collide / collide and push against one another, resisting subduction
- The resultant **compressional force** creates immense pressure
- Which causes the plates **to break** and slide along fractures in the crust
- The layers of rocks **buckle and fold**, forming a **fold mountain** (**Himalayas** formed between Indo-Australian and the Eurasian plate. )

*1 mark per point*

*1 mark reserved for identification*

*1 mark reserved for reference to Figure (plate names and mountain name) - Max 3 marks if no examples from figure*

- b Figure 7 provides information on the Earthquake that struck Kathmandu, Nepal on 25 April 2015.

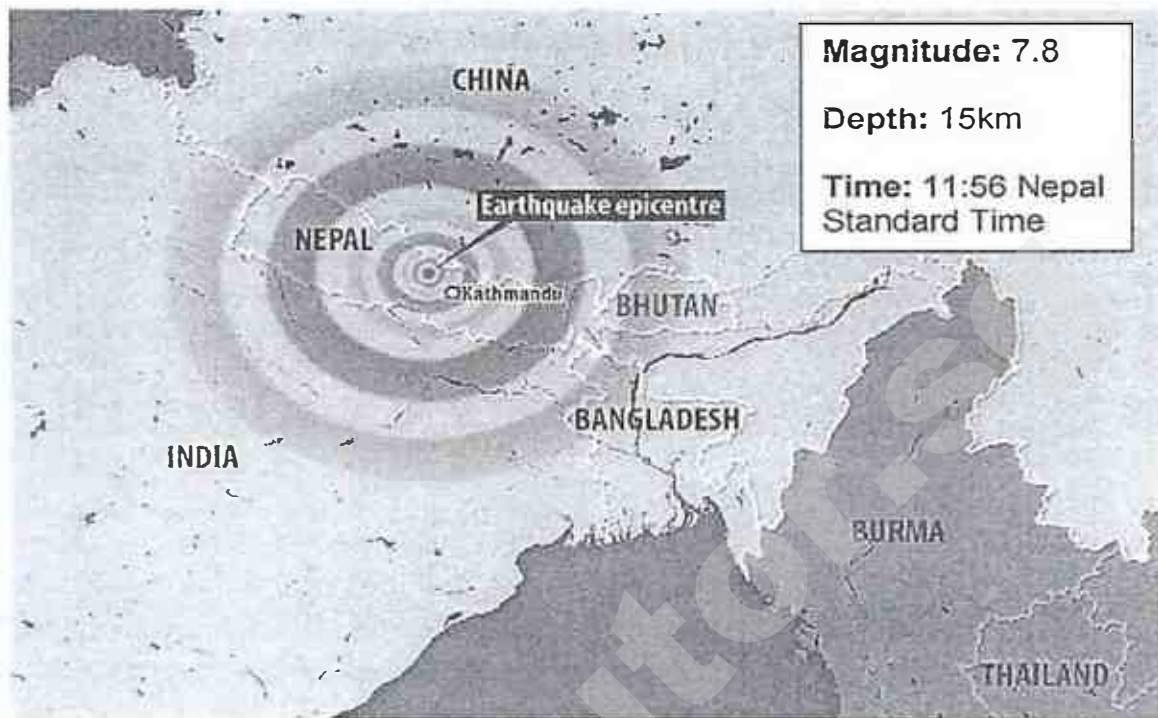


Figure 6

- i With reference to Figure 7 only, discuss the factors that may have resulted in a high number of fatalities in Kathmandu. [4]

- **Distance from epicentre** - Kathmandu is close to the epicentre, resulting in a more severe earthquake which may cause more damage, more deaths
- **Magnitude of 7.8** – likely to cause damage such as causing structures to collapse, cracks in ground, resulting in higher number of deaths
- **Depth of earthquake** is rather shallow, greater impact on the land as vibrations or seismic waves reach the land surface more quickly
- **Time of occurrence at 1156am/pm** – streets may be busy, people at work, high traffic, people trapped in buildings or people are sleeping and are unable to evacuate quickly, trapped in houses

*2 marks per each well explained point*

- ii Other than causing deaths, discuss two impact that this earthquake might have on Kathmandu. [4]

- **Damage to economy** : loss of earnings due to collapse office buildings, channeling of funds for rebuilding purposes
- **Spread of diseases** due to the lack of proper sanitation, especially if the area is not accessible after the earthquake
- **Liquefaction**: soil loses strength and structure and become liquid, due to pressure or stress from earthquake and excess water is forced upwards to surface, leads to more damage

*2 marks for each well explained point*

- c 'Having effective building design is the most effective measure a country should implement when it comes to preparing for earthquakes.'

How far do you agree? Discuss with relevant examples.

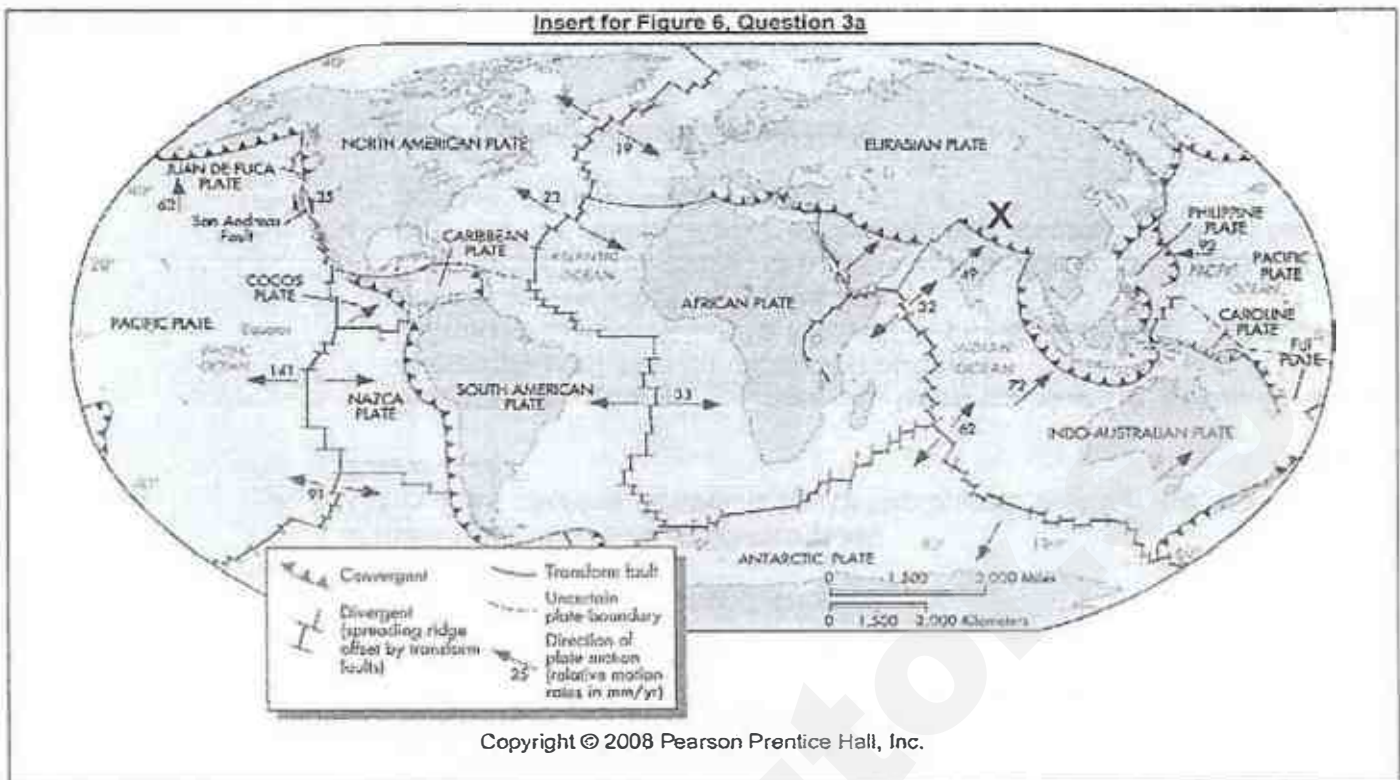
[8]

L1 (1-3)	<ul style="list-style-type: none"> <li>- Introduction to what an earthquake is and why we need to prepare before an earthquake strikes</li> <li>- Listing of the various preparedness measures</li> <li>- Define what effective building design is</li> <li>- Brief description but does not specify how building design is an effective preparedness measure</li> <li>- Little or no evaluation</li> <li>- No examples</li> </ul>
L2 (4-6)	<ul style="list-style-type: none"> <li>- Introduction to what an earthquake is and why we need to prepare before an earthquake strikes</li> <li>- Define what effective building design is</li> <li>- Some attempt to explain and discuss what effective building design is</li> <li>- Brings in another 1-2 preparedness measure and shows some attempt to discuss it</li> <li>- Analyses effectiveness of the measures and provides examples for both / all three measures</li> </ul> <p>No examples: max 4/5 marks (depending on how thorough the preceding answer is)</p>
L3 (7-8)	<ul style="list-style-type: none"> <li>- Has all points in L2</li> <li>- Detailed analysis, well balanced arguments with concluding paragraph</li> </ul>

End of paper

Index Number	Class	Name
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Insert for Figure 6, Question 3a



Index Number	Class	Name
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# CHIJ ST JOSEPH'S CONVENT PRELIMINARY EXAMINATION



## GEOGRAPHY

2236/01

Paper 1

Thursday, 11 August 2016

Secondary 4 Express

1 hour 40 minutes

Additional Materials: Writing paper

### READ THESE INSTRUCTIONS FIRST

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

Write in dark blue or black pen.

You may use a soft pencil for any diagrams or rough working.

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

#### Section A

Answer **Question 1**.

#### Section B

Answer **one** question.

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

The number of marks is given in brackets [ ] at the end of each question or part-question. You are reminded to begin each question on a fresh page.

At the end of the examination, attach this Cover Page on top of all your answers securely. Hand in the Question Paper separately.

FOR EXAMINER'S USE	
Section A	25
Section B	25
Total	50

This document consists of 7 printed pages and 1 blank page.

Setter(s):

[Turn over  
Need a home tutor? Visit [smiletutor.sg](http://smiletutor.sg)



## Section A

Answer all questions in Section A.

- 1 A group of students were interested in conducting an investigation along a beach with the presence of groynes, as shown in Figure 1. They wanted to study how wind direction influences the direction of sediment movement and the effectiveness of using groynes in retaining sediments.

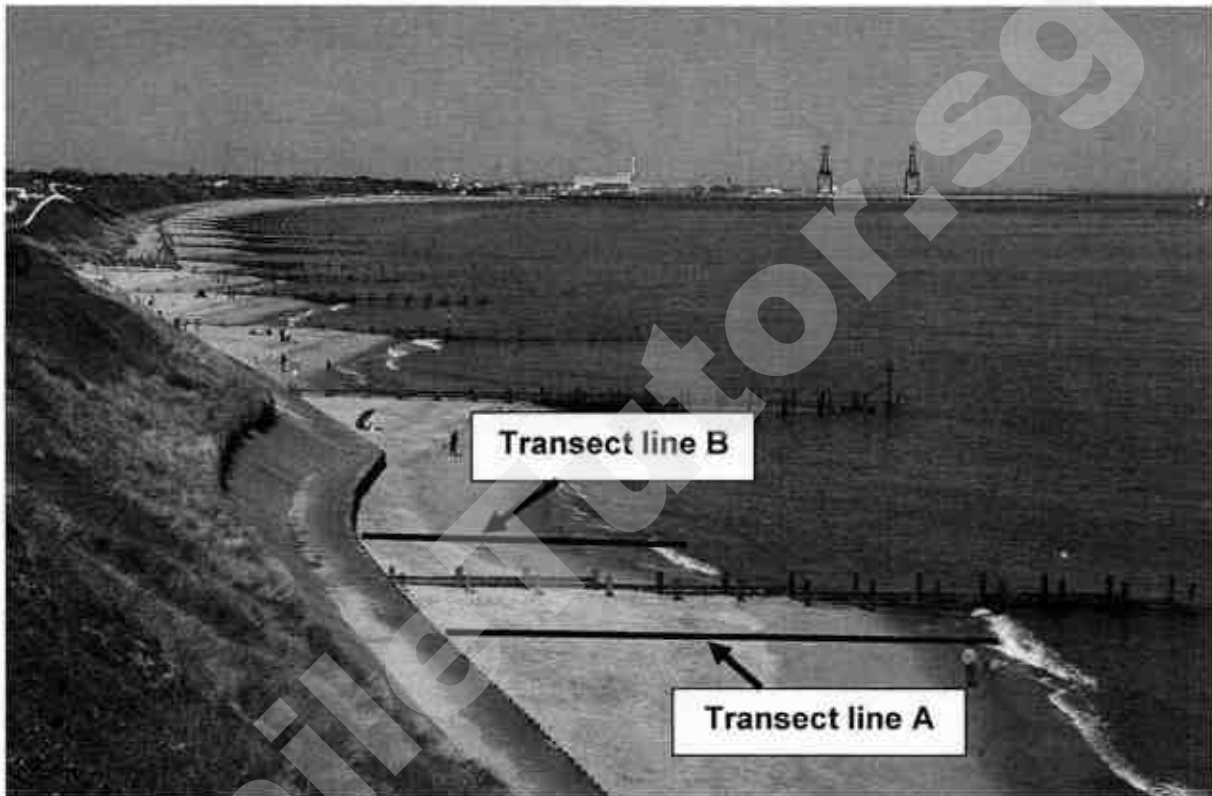


Figure 1

- a Suggest two possible reasons why students should conduct a pre-fieldwork survey before their actual investigation. [2]
- b Explain how the students could investigate whether wind direction affects the movement of sediments along the beach. [4]

- c The students tested the hypothesis 'The groyne is an effective measure in retaining sediments.'

The students measured the beach gradient at two lines of transect at **A** and **B**, one at each side of the groyne. The results are shown in Table 1.

Distance from low water mark (m)	Line A Angle of Elevation (degrees)	Line B Angle of Elevation (degrees)
2	3	0.5
4	4	1
6	6	2
8	7	4
10	6	6

**Table 1**

- Using the data shown in Table 1, construct a suitable graph to represent the data. [3]
- d From studying the data in Table 1, what conclusions might the students draw about their hypothesis? [3]
- e Explain two factors that might affect the validity of the conclusion made in above question. [4]

- f 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, only choosing to approach every third person who walked past them.

The questionnaire used and results are shown in Figure 2.

1. What mode of transport did you take to come to the beach?	
A. By car.	40
B. By bus.	8
C. By train.	2
2. Why did you choose to visit this beach?	
A. Beautiful scenery	7
B. Cleanliness	3
C. Presence of shops 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	44
B. Take a walk	5
C. Swim	1
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

**Figure 2**

- i Explain the advantages of using the type of questionnaire shown in Figure 2. [2]
- ii Suggest two ways how the questionnaire in Figure 2 could be improved. [2]
- g The students realized there could be some limitations in their data collection method that may skew their conclusion to their investigation.
- Identify the sampling method used and explain a limitation that it has. [2]
- h Describe one other method the students could have used to investigate the impact groynes have on the number of visitors at the beach. [3]

## Section B

Answer one question from Section B.

2a Figure 3 shows a landform in a part of a map.

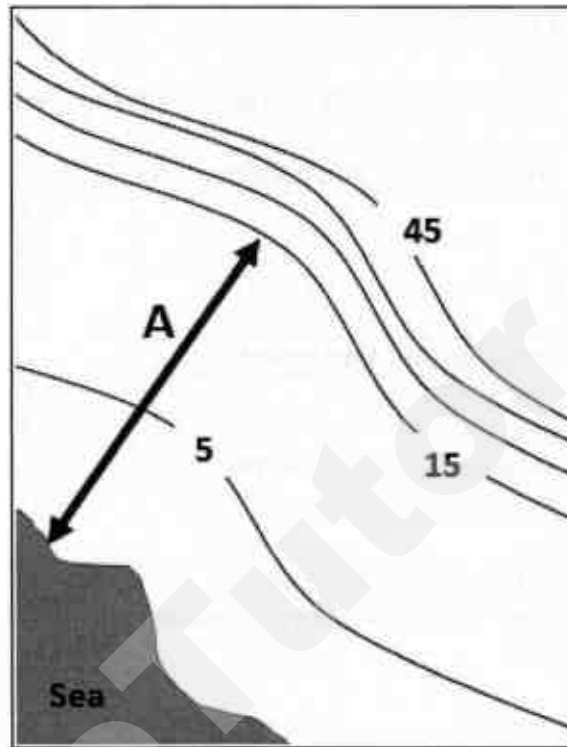


Figure 3

- i With the aid of labelled diagrams, explain the formation of the landform in Figure 3. [5]
  - ii Identify and describe the type of wave found at A. [4]
- b Figure 4 is an extract on the impacts of an earthquake that struck Japan in 2011.

A severe natural disaster occurred in north eastern Japan on March 11, 2011. The event began with a powerful earthquake of magnitude 9.0 off the north-eastern coast of Honshu, Japan's main island, which caused widespread damage on land and initiated a series of large tsunami waves that devastated many coastal areas of the country, most notably in the Tōhoku region. The tsunami also instigated a major nuclear accident at a power station along the coast.

Figure 4

- With reference to Figure 4, explain how the earthquake may affect the tourism industry in Japan and her neighbouring countries. [4]
- c Discuss how media could influence the decisions of tourists when choosing to visit a country. [4]
  - d "The development of coastal tourism will bring more benefits than harm to a country." Discuss this statement with reference to relevant examples. [8]

3a Figure 5 shows the different activities and attractions in South Korea.



**Figure 5**

With reference to Figure 5 only, explain why visitors may choose to visit South Korea.

[4]

b Figure 6 is an extract on the development of tourism in India.

Tourism development in India has passed through many phases. The first step to promote tourism in India after independence was the formation of a separate Department of Tourism under the Ministry of Transport and Communications in 1958. It helps in promoting international and domestic tourism in the country. It provides infrastructure, information aimed at promotion of tourists' sites in the world market, carries out publicity campaigns and formulates policies and programmes for the promotion of tourism in the country. The Indian Institute of Tourism and Travel Management, the National Council for Hotel management and Catering technology provide professionally trained personnel to the industry.

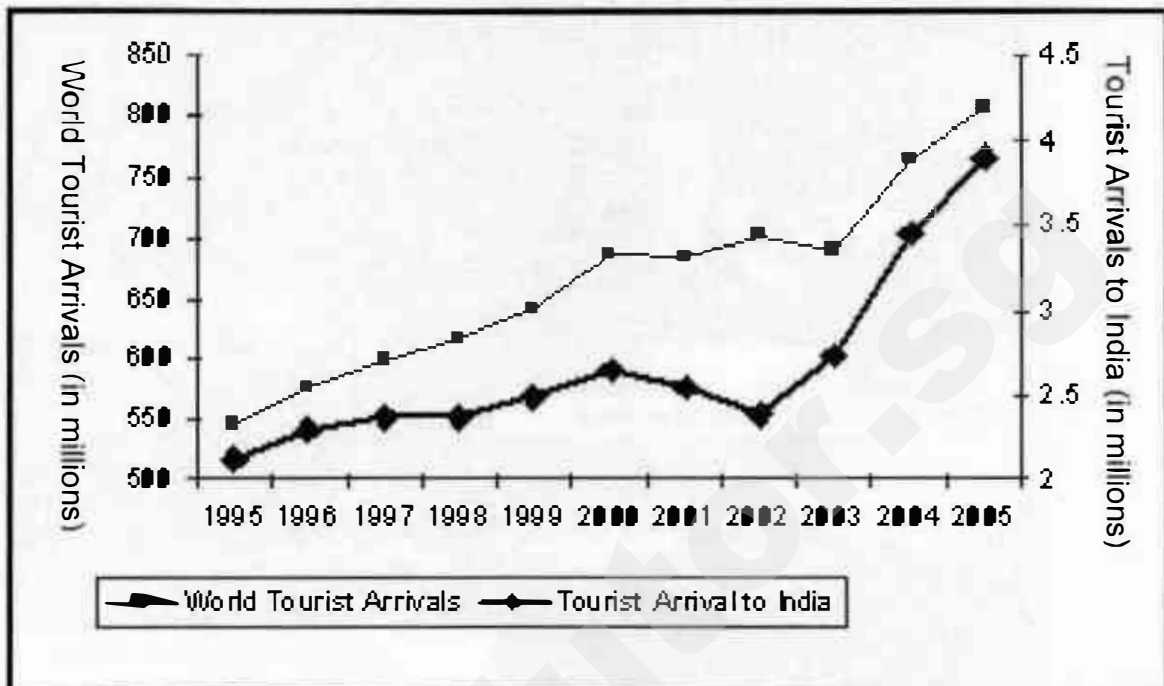
**Figure 6**

With reference to Figure 6 only, discuss two impact India may experience due to tourism development in the country.

[4]



- c Figure 7 shows the trend in world tourist arrivals and tourists arrivals to India from 1995 to 2005.



**Figure 7**

With reference to Figure 7, describe the trend of world tourist arrivals and tourist arrivals to India between 1995 and 2005. [5]

- d Explain possible reasons that may cause a decrease in tourism arrivals. [4]

- e "Tourists play the most important role in ensuring tourism is sustainable." Do you agree? Discuss with the use of relevant examples. [8]

**-End of Paper-**

#### Acknowledgements

Fig 1 <http://www.stacey.peak-media.co.uk/NNorfolk/Horton2010/1280-DSC02152.jpg>

Fig 4 <https://global.britannica.com/event/Japan-earthquake-and-tsunami-of-2011>

Fig 5 [http://english.visitkorea.or.kr/enu/ATR/SI\\_ENG\\_2\\_8\\_1.jsp](http://english.visitkorea.or.kr/enu/ATR/SI_ENG_2_8_1.jsp)

Fig 6 [http://www.academia.edu/7786318/Tourism\\_Development\\_in\\_India\\_under\\_Government\\_Five\\_Year\\_Plans](http://www.academia.edu/7786318/Tourism_Development_in_India_under_Government_Five_Year_Plans)

Fig 7 <http://www.gidb.org/tourism-current-tourismtrend-in-india>

## Section A

Answer all questions in Section A.

- 1 A group of students were interested in conducting an investigation along a beach with the presence of groynes, as shown in Figure 1. They wanted to study how wind direction influences the direction of sediment movement and the effectiveness of using groynes in retaining sediments.

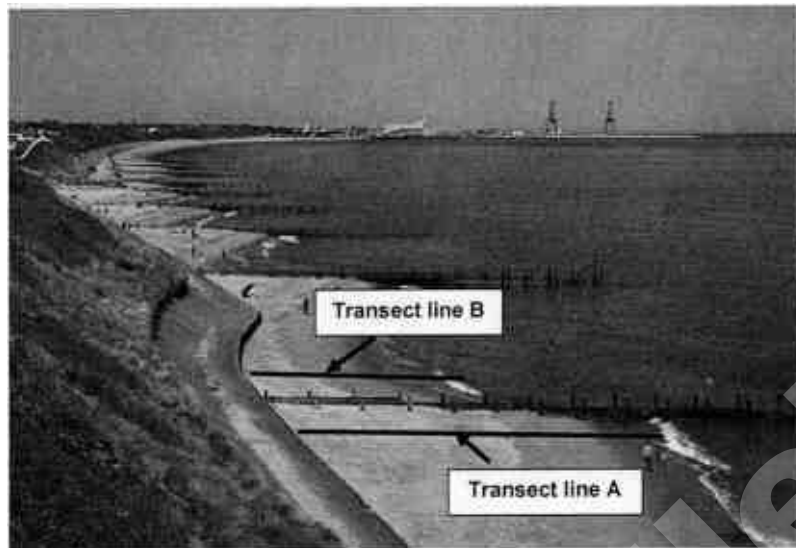


Figure 1

- a Suggest two possible reasons why students should conduct a pre-fieldwork survey before their actual investigation. [2]

Check extent of area for students to carry out investigation given the time limit

- Identify possible survey sites for investigation
- Ascertain safety of the area in which students will conduct fieldwork
- Determine a suitable timing / day / location to carry out the fieldwork (for low tide in order to carry out fieldwork)
- Familiarise themselves with the routes to the fieldwork sites

1 mark per point

Too vague

For safety purposes

Any 2 plausible reasons accepted but it has to be precise in terms and specific actions.

- b Explain how the students could investigate whether wind direction affects the movement of sediments along the beach. [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.
- Compare the direction the oranges travelled and the wind direction to suggest a relationship.

- c The students tested the hypothesis 'The groyne is an effective measure in retaining sediments.'

The students measured the beach gradient at two lines of transect at A and B, one at each side of the groyne. The results are shown in Table 1.

Distance from low water mark (m)	Line A Angle of Elevation (degrees)	Line B Angle of Elevation (degrees)
2	3	0.5
4	4	1
6	6	2
8	7	4
10	6	6

Table 1

Using the data shown in Table 1, construct a suitable graph to represent the data. [3]

Students should draw graph that indicates gradient. Otherwise, can accept line or bar graph.

Title: 1m

X and Y axis correctly labelled : 1m

Data accurately represented : 1m

- d From studying the data in Table 1, what conclusions might the students draw about their hypothesis? [3]

1m for stating hypothesis or conclusion.

1m for explaining why the hypothesis is proven

1m for using data from given figure

The hypothesis is true.

This is so as the angle of elevation is steeper at line of transect A than B, especially so when it is at 2 to 8 metres from the water mark, ----- Therefore, we can conclude

that sediment are indeed retained (more) at one side of the groyne.

- e Explain 2 factors that might affect the validity of the conclusion made in above question.

**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 data once, at one timing. This might have affected validity as data would differ or there might be disparity in data over various days.

**Choice of location** – due to human activities / other engineering methods, hence need to choose an appropriate location

- f 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, only choosing to approach every 3<sup>rd</sup> person who walked past them.

The questionnaire used and results are shown in Figure 2.

1. What mode of transport did you take to come to the beach?	
A. By car.	40
B. By bus.	8
C. By train.	2
2. Why did you choose to visit this beach?	
A. Beautiful scenery	7
B. Cleanliness	3
C. Presence of shops 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	44
B. Take a walk	5
C. Swim	1
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

Figure 2

- i Explain the advantages of using the type of questionnaire shown in Figure 2.

[2]

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

- Allow students to speak with or interview with a larger number of people/ gather large amounts of information or data in a shorter amount of time
- 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

- ii 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 (that are relevant)
- 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 so that they are able to give their individual views

Any other plausible points

- G The students realized there could be some limitations in their data collection method that may skew their conclusion to their investigation.

Identify the sampling method used and explain a limitation that it has. [2]

- systematic sampling
- It is more biased, as not all members or points have an equal chance of being selected and may therefore lead to over or under representation of a particular pattern

- h Describe one other method the students could have used to investigate the impact groynes have on the number of visitors at the beach. [3]

- Bi-polar survey  
Allows for collection of qualitative data on people's perception  
Includes choosing pairs of opposite characteristics where a range of scores is assigned to each criteria listed in the table

## Section B

Answer one question from Section B.

2a Figure 3 shows a landform in a part of a map.

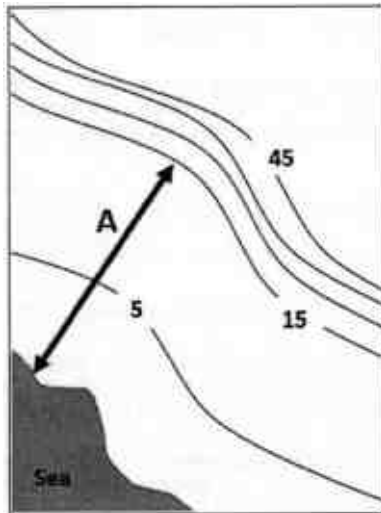
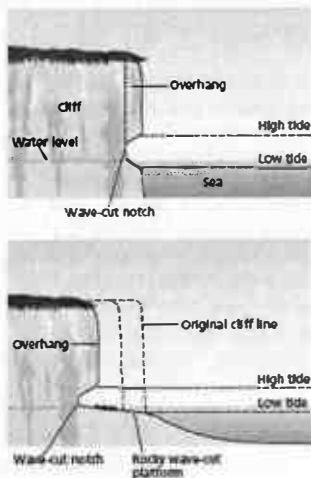


Figure 3

i With the aid of labelled diagrams, explain the formation of the landform in Figure 3. [5]



<http://croesy-gcse-geography.doomby.com/medias/images/wave-cut.jpg>

- Wave erosion along a line of weakness produces a cut called a notch on the coast. The notch is further eroded to form a cave.
- Further erosion causes the overhanging part of the cave to collapse into the sea and a cliff is left behind.
- Continuous erosion causes the cliff to move back or retreat inland. Over time, a wave-cut platform is formed at the foot of the cliff.

2 mark for diagrams

1 mark per point, max 3 marks

ii Identify and describe the type of wave found at A. [4]

- Destructive wave
- Weak swash, strong backwash
- They have tall breakers that have a high downward force and a strong backwash.
- Their frequency is high with between 13 and 15 waves per minute.
- Destructive waves have a large wave height and short wave length.

1 mark per point

b Figure 4 is an extract on the impacts of an earthquake that struck Japan in 2011.

A severe natural disaster occurred in north eastern Japan on March 11, 2011. The event began with a powerful earthquake of magnitude 9.0 off the north-eastern coast of Honshu, Japan's main island, which caused widespread damage on land and initiated a series of large tsunami waves that devastated many coastal areas of the country, most notably in the Tōhoku region. The tsunami also instigated a major nuclear accident at a power station along the coast.

Figure 4

With reference to Figure 4, explain how the earthquake may affect the tourism industry in Japan and her neighbouring countries. [4]

- Destruction of infrastructure will discourage tourists from visiting Japan because it poses greater risks to the safety of the tourists
- This will in turn affect the country's economy as there is a decrease in earnings from the tourist dollar
- Discourage citizens of Japan from travelling overseas therefore effecting the tourism industries of nearby countries,
- losing income from the Japanese tourists
- Nuclear accident may affect neighbouring countries so tourists avoid Japan and neighbouring countries
- Tourists who now avoid Japan may choose to visit the neighbouring countries, therefore increasing the number of tourists there, increase in tourism spending, boost economy

1 mark per point, max 4 marks

Need to address both Japan and neighbouring countries

1 mark reserved for making reference to the figure

- c Discuss how media could influence the decisions of tourists when choosing to visit a country. [4]
- Media refer to channels such as television, radio, newspapers, internet and reports about a country or an area
  - Positive reports such as the friendliness of the local population / interesting culture can encourage tourists to visit
  - Negative reports such as disease outbreaks can deter visitors both immediately and for many years to come
  - and tourists become more aware of destinations that have previously not considered and may also lead to some places gaining popularity because of favourable media reports
- d "The development of coastal tourism will bring more benefits than harm to a country." Discuss this statement with reference to relevant examples. [8]

L1 (1-3)	<ul style="list-style-type: none"> <li>Introduction to coastal tourism</li> <li>Brief description of benefits / harms of coastal development</li> <li>Listing of the various ways that coastal areas are being developed for tourism</li> <li>Listing of uses of coasts</li> <li>No examples</li> </ul>
L2 (4-6)	<ul style="list-style-type: none"> <li>Introduction to coastal tourism</li> <li>Attempts to discuss the benefits of developing coastal areas for tourism</li> <li>Brings in another reason and shows some attempt to discuss it</li> <li>Analyses how each reason (1 to 2 other reasons) contributes to benefits and harms of coastal development (for tourism) to a country</li> </ul> <p>No examples: max 4/5 marks (depending on how thorough the preceding answer is)</p>
L3 (7-8)	<ul style="list-style-type: none"> <li>Has all points in L2</li> <li>Detailed analysis, well balanced arguments with concluding paragraph</li> </ul> <ul style="list-style-type: none"> <li>This question will allow students to discuss the benefits and harms of both developing coasts and tourism in a country. Students with high level answers should be able to discuss both simultaneously in their essays</li> <li>Useful article: <a href="http://nsq1.gso.uri.edu/washu/washuw99003/1-Introduction%20Miller.pdf">http://nsq1.gso.uri.edu/washu/washuw99003/1-Introduction Miller.pdf</a></li> <li>E.g. Harm: Loss of coastal habitats such as mangroves (if they are removed)</li> <li>E.g. Benefit: Increase in conservation efforts of coastal ecosystem to attract tourists</li> </ul>

- 3a Figure 5 shows the different activities and attractions in South Korea.

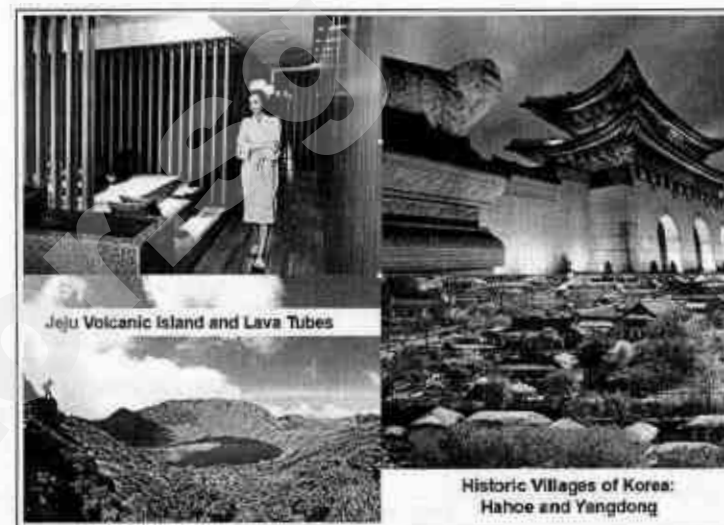


Figure 5

With reference to Figure 5 only, explain why visitors may choose to visit South Korea. [4]

- For health tourism: to enhance and restore their minds and bodies, in hope of gaining therapeutic value through massages
- For heritage tourism: to experience Korea's culture and to understand the history of the places such as its Historical villages
- For Korea's beautiful scenery, provides opportunities for tourists' activities such as mountaineering and hiking.

Any 2 types of tourism

- b Figure 6 is an extract on the development of tourism in India.

Tourism development in India has passed through many phases. The first step to promote tourism in India after independence was the formation of a separate Department of Tourism under the Ministry of Transport and Communications in 1958. It helps in promoting international and domestic tourism in the country. It provides infrastructure, information aimed at promotion of tourists' sites in the world market, carries out publicity campaigns and formulates policies and programmes for the promotion of tourism in the country. The Indian Institute of Tourism and Travel Management, the National Council for Hotel management and Catering technology provide professionally trained personnel to the industry.

Figure 6



With reference to Figure 6 only, discuss two impact India may experience due to tourism development in the country.

[4]

- Increase in job opportunities, improvement in economy
- Development of country due to infrastructure improvements by government's Department of Tourism under the Ministry of Transport and Comms
- Economic benefit from promotion of tourism, more tourists will visit
- Social impact → more tourists may cause harm to the environment such as littering / development will affect environment
- Improvement / building of new infrastructure → allow tourism to further develop → boost economy

- c Figure 7 shows the trend in world tourist arrivals and tourists arrivals to India from 1995 to 2005.

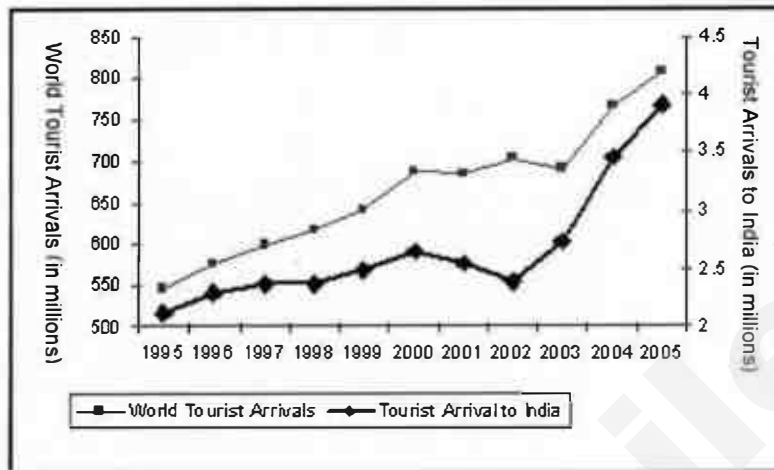


Figure 7

With reference to Figure 7, describe the trend of world tourist arrivals and tourist arrivals to India between 1995 and 2005.

[5]

Overall trend for both → 1 mark

#### World tourist arrivals

- Gradual increase from 1995 to 2000 from 550 to 680 million
- Growth became quite constant between 2000 to 2003
- Increase from 2003 to 2005 from 680 to 800 million

#### Tourist arrivals to India

- Gradual increase from 1995 to 2000 from about 2.1 million to 2.6 million tourist arrivals
- Sudden decrease from 2000 to 2002 from 2.6 million to 2.4 million
- Sharp increase from 2002 to 2005 from 2.4 million to 3.9 million

2 marks for world tourist arrivals  
2 marks for tourist arrivals to india  
1 mark for use of stats

- d Explain possible reasons that may cause a decrease in tourism arrivals.

[4]

Students to explain any of the 2 factors below

- Political instability
- Disease outbreak
- Natural disasters
- regional recession

- e "Tourists play the most important role in ensuring tourism is sustainable." Do you agree? Discuss with the use of relevant examples.

[8]  
AO2

L1 (1-3)	<ul style="list-style-type: none"> <li>- Introduction to sustainable tourism</li> <li>- Listing of the various groups that has a role in sustaining tourism</li> <li>- Brief description but does not specify how tourists have a role in sustaining tourism</li> <li>- No examples</li> </ul>
L2 (4-6)	<ul style="list-style-type: none"> <li>- Introduction to sustainable tourism</li> <li>- Listing of the various groups that has a role in sustaining tourism</li> <li>- Attempts to discuss the role of tourists in sustaining tourism</li> <li>- Brings in another reason and shows some attempt to discuss it</li> <li>- Analyses how each reason (1 to 2 other reasons) contributes to sustainable tourism</li> <li>- Can also mention management of tension between locals and tourists / the various groups so that tourism can continue to exist/thrive in that area</li> </ul> <p>No examples: max 4/5 marks (depending on how thorough the preceding answer is)</p>
L3 (7-8)	<ul style="list-style-type: none"> <li>- Has all points in L2</li> <li>- Detailed analysis, well balanced arguments with concluding paragraph</li> </ul>

-End of Paper-

#### Acknowledgements

- Fig 1 <http://www.stacey.peak-media.co.uk/NNorfolk/Horton2010/1280-DSC02152.jpg>  
 Fig 4 <https://global.britannica.com/event/Japan-earthquake-and-tsunami-of-2011>  
 Fig 5 [http://english.visitkorea.or.kr/enu/ATR/Sl\\_ENG\\_2\\_8\\_1.jsp](http://english.visitkorea.or.kr/enu/ATR/Sl_ENG_2_8_1.jsp)  
 Fig 6 [http://www.academia.edu/7786318/Tourism\\_Development\\_in\\_India\\_under\\_Government\\_Five\\_Year\\_Plans](http://www.academia.edu/7786318/Tourism_Development_in_India_under_Government_Five_Year_Plans)  
 Fig 7 <http://www.gidb.org/tourism-current-tourismtrend-in-india>

Index Number	Class	Name
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# **CHIJ ST JOSEPH'S CONVENT PRELIMINARY EXAMINATION**



## **GEOGRAPHY**

**2236/02**

**Paper 2**

Tuesday, 16 August 2016  
1 hour 30 minutes

Secondary 4 Express

Additional Materials: Writing paper

### **READ THESE INSTRUCTIONS FIRST**

Write your index number, class and name on all the work you hand in.  
Write in dark blue or black pen.  
You may use a soft pencil for any diagrams or rough working.  
Do not use staples, paper clips, highlighters, glue or correction fluid.

#### **Section A**

Answer **one** question.

#### **Section B**

Answer **one** question.

Candidates are encouraged to support their answers with the use of relevant examples.  
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.  
The number of marks is given in brackets [ ] at the end of each question or part-question.  
You are reminded to begin each question on a fresh page.

At the end of the examination, attach this Cover Page on top of all your answers securely.  
Hand in the Question Paper separately.

FOR EXAMINER'S USE	
Section A	25
Section B	25
Total	50

This document consists of **9** printed pages and **1** blank page.

**Setter(s):**

**[Turn over**

Need a home tutor? Visit [smiletutor.sg](http://smiletutor.sg)

## Section A

Answer one question from this section.

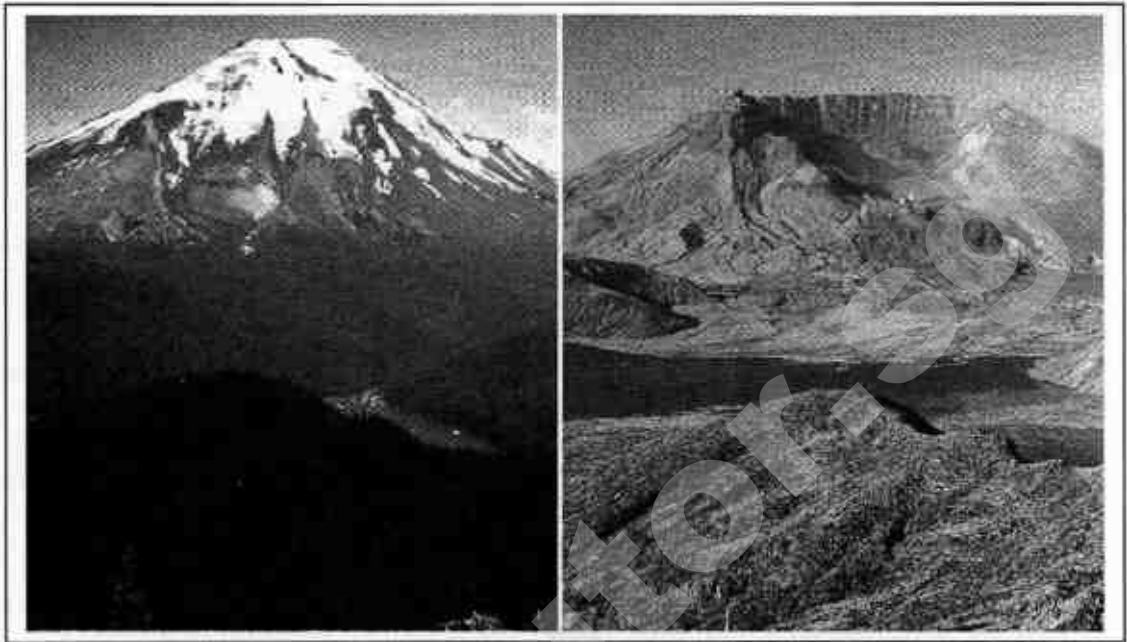
- 1 Figure 1 shows where volcanoes are located along the Ring of Fire.



Figure 1

- a Describe the Ring of Fire and explain why it has a concentration of active volcanoes. [5]
- b Explain how convection currents move tectonic plates. [4]

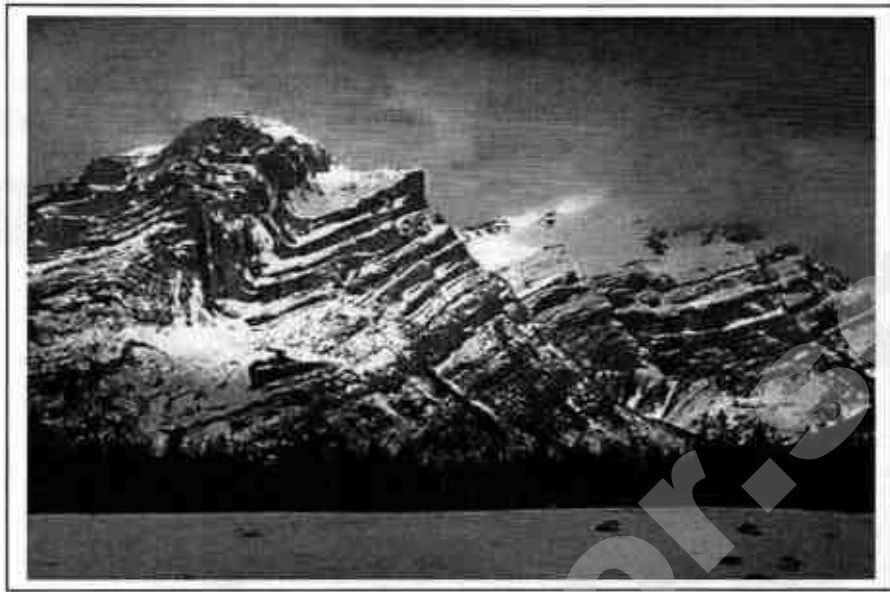
- c Study Photograph A which shows the before and after images of the eruption of Mt St Helens, Washington, USA.



Photograph A

- i Describe the changes in the physical landscape of Mt St Helens before and after the eruption. [4]
- ii Discuss, with examples, the environmental risks and economic benefits of living in volcanic regions. [4]
- d "Short term responses are not as effective as long term mitigation measures in managing the effects of earthquakes." [8]  
To what extent do you agree to this statement? Discuss with suitable examples.

- 2 Photograph B shows the features of a landform found in the Himalayan range.



Photograph B

- a Describe the features of this landform and suggest how tectonic processes resulted in its formation. [4]
- bi Suggest why Singapore experiences much convectional rain. [4]
- ii Explain the formation of convectional rain. [4]



- c Figure 2 shows the percentage of carbon dioxide emissions in the world.

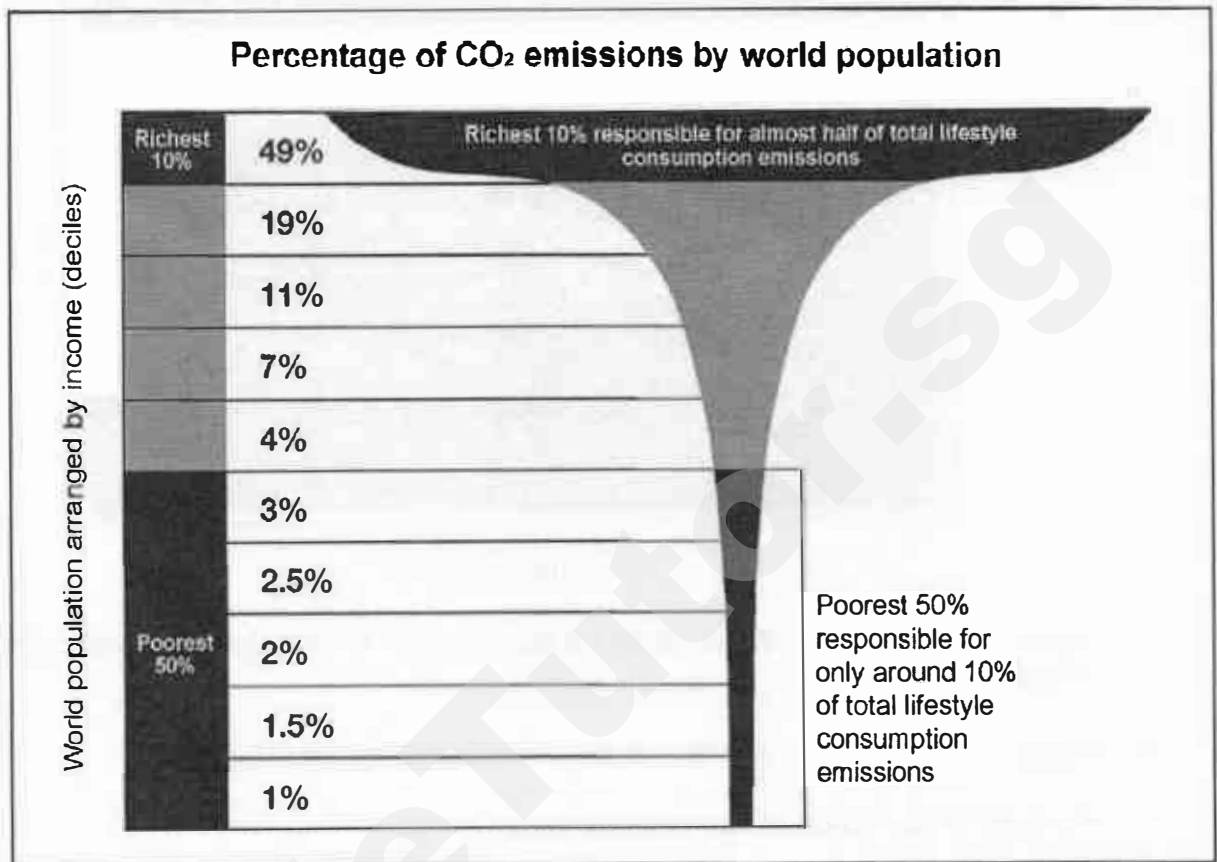


Figure 2

- Explain the difference in carbon dioxide emissions by the richest and the poorest people in the world. [5]
- d "Physical damage from hurricanes is the most impactful to a country." Discuss this with reference to examples. [8]

**Section B**

**Answer one question from this section.**

3a Figure 3 shows the distribution of infant mortality rates in 2012.

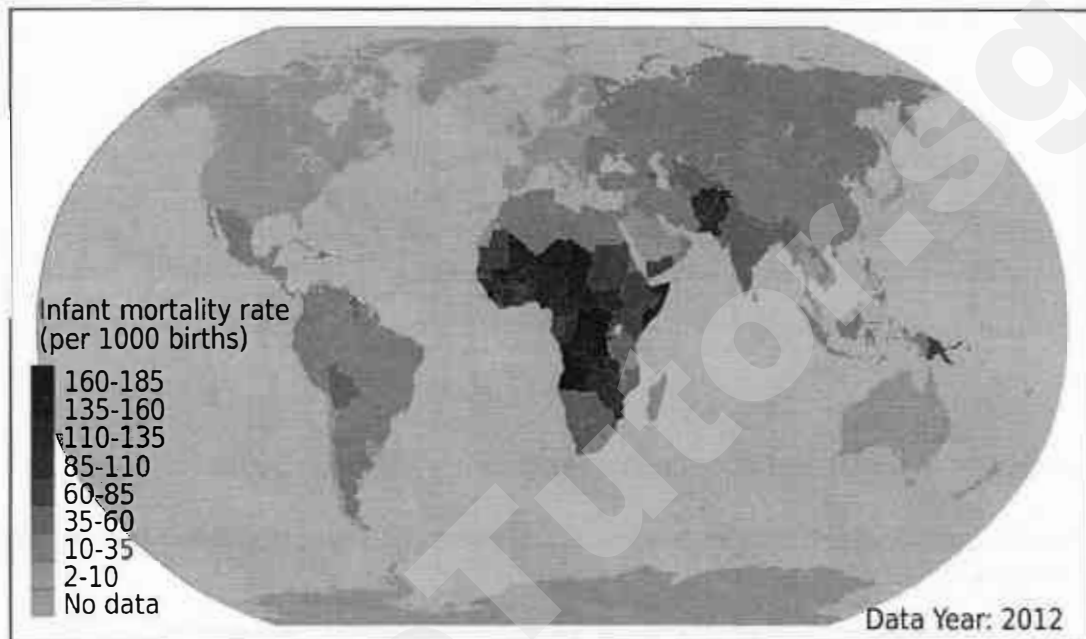


Figure 3

- i Describe the distribution of infant mortality rates in 2012 shown in Fig 3. [3]
- ii Explain how access to healthcare and drinking water affects infant mortality rates in developed and less developed countries. [5]

- b Figure 4 is an advertisement on children with HIV/AIDs.



Figure 4

Describe the social and economic impact of HIV/AIDs on these children. [4]

- c Study Figure 5 which shows the impact of education on preventing the spread of HIV in Kenya.

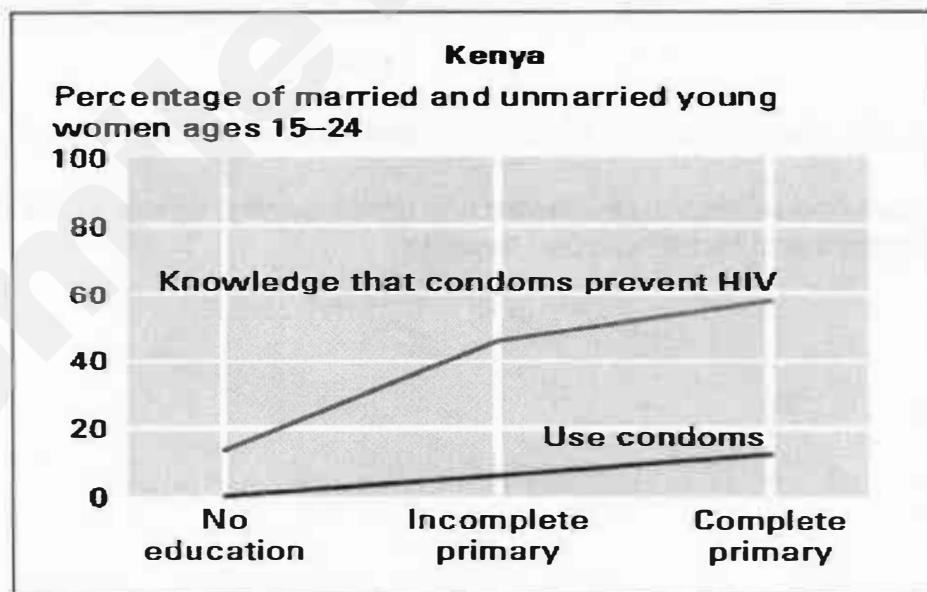


Figure 5

Using the figure, compare and explain the impact of education in preventing the spread of HIV in Kenya. [5]

- d "Managing the spread of infectious diseases require cooperation among different stakeholders."  
Discuss this statement with reference to examples. [8]

4a Figure 6 shows the extent of confirmed malaria cases in the world.

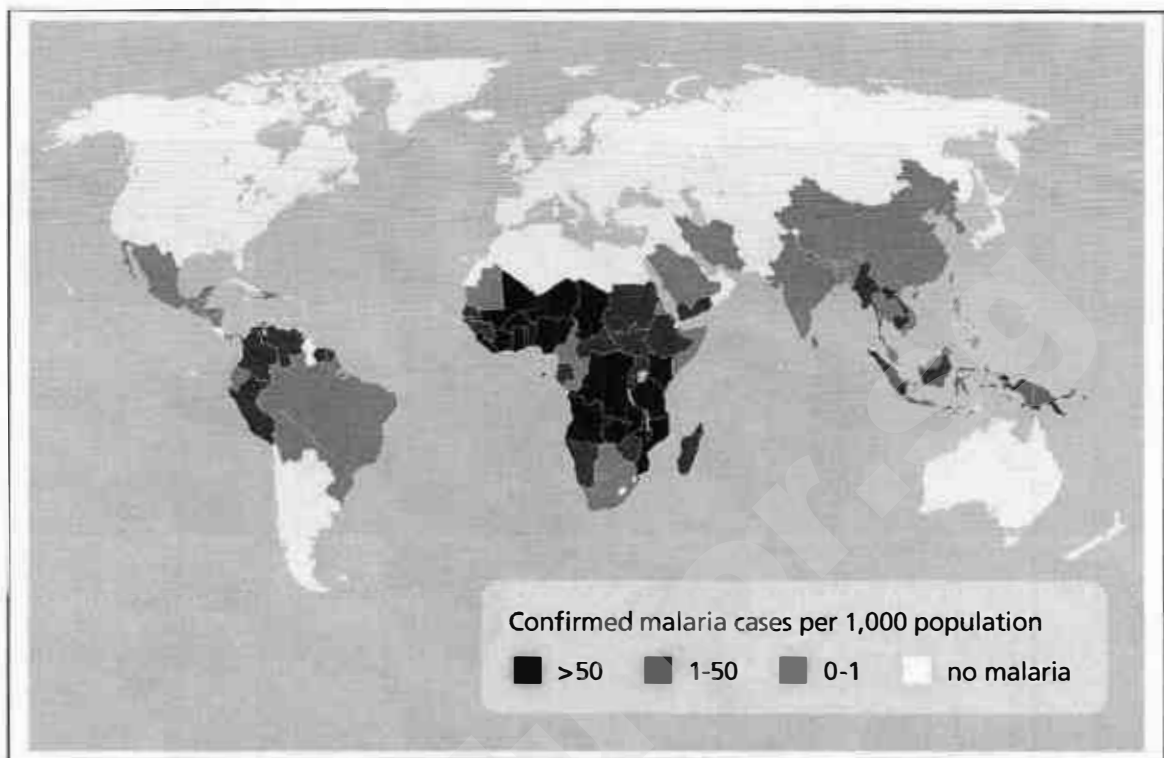


Figure 6

- i Describe the distribution of malaria cases shown in Fig 6. [3]
- ii Suggest how climate change and income levels may explain the prevalence of malaria in some parts of the world. [4]

- b Figure 7 shows how different countries view the labelling of genetically modified foods.

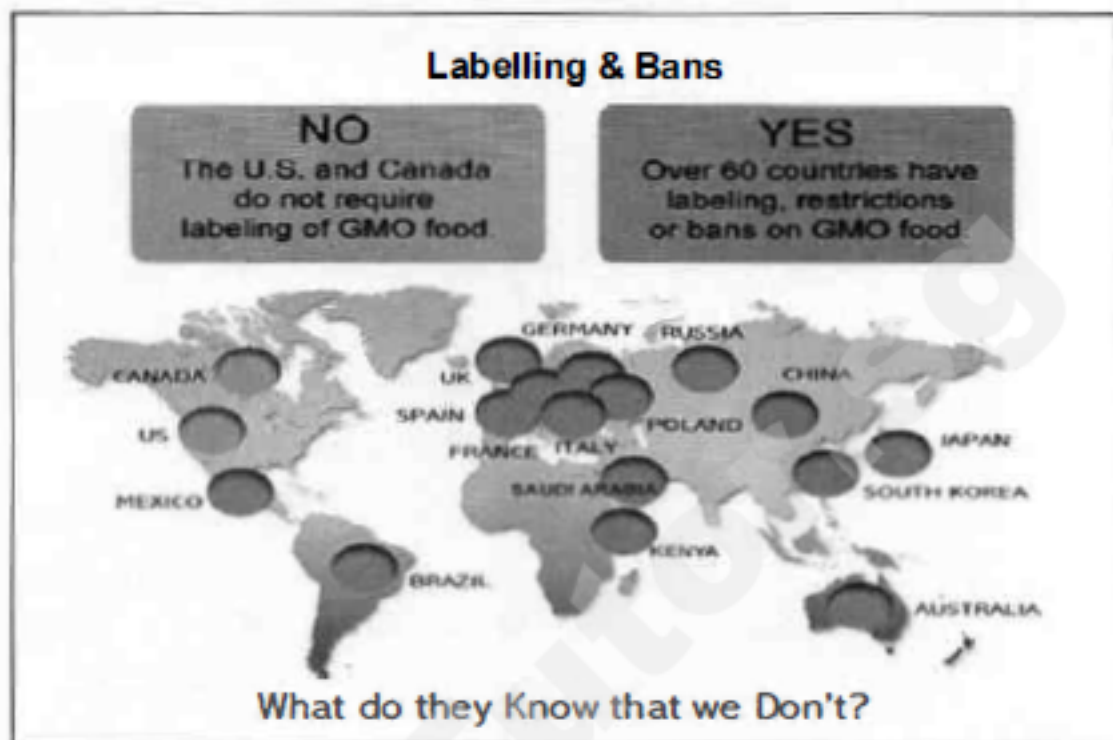


Figure 7

- Discuss why countries differ in their view that genetically modified foods should be labelled. [5]
- c How may inadequate food intake impact the economic development of a country? [5]
- d "International food aid programmes are the best measures in reducing food shortage." To what extent do you agree with this statement? Discuss with examples. [8]

**Acknowledgement:**

Figure 1: <http://www.thinglink.com/scene/624672780318670850>

Photograph A: <https://imgur.com/UYcQ6ty>

Photograph B: <http://teachers.sduhsd.net/herms/herms/GEOLOGY/mtn-bldg/folds.jpg>

Figure 2: <http://imgur.com/hVWcy0t>

Figure 3: [https://en.wikipedia.org/wiki/Infant\\_mortality](https://en.wikipedia.org/wiki/Infant_mortality)

Figure 4: <https://ourworldindata.org/wp-content/uploads/2013/11/report-20070.png>

Figure 5: [http://ahinternational.org/images/stories/content/about/aids\\_poster\\_rev2\\_sm\\_rgb.jpg](http://ahinternational.org/images/stories/content/about/aids_poster_rev2_sm_rgb.jpg)

Figure 6:

[http://www.yourgenome.org/sites/default/files/illustrations/chart/malaria\\_distribution\\_map\\_2013\\_yourgenome.png](http://www.yourgenome.org/sites/default/files/illustrations/chart/malaria_distribution_map_2013_yourgenome.png)

Figure 7: [http://www.farmandfoodrights.org/files/6713/5785/9746/shapeimage\\_26.png](http://www.farmandfoodrights.org/files/6713/5785/9746/shapeimage_26.png)



## Table of Specs 2016 Prelims Pure Geog 2236 /02

Qn	AO1 + AO2	AO1 + AO3
1a		1
b	1	
ci		1
cii	1	
d	1	
2a		1
bii	1	
bii	1	
c		1
d	1	
3ai		1
aii	1	
b		1
c		1
d	1	
4ai		1
aii	1	
b		1
c	1	
d	1	



# CHIJ ST JOSEPH'S CONVENT PRELIMINARY EXAMINATION

## Answer Scheme



### GEOGRAPHY

#### Paper 2

Secondary 4 Express



2236/02

Tuesday, 16 August 2016

1 hour 30 minutes

### Section A

1	Figure 1 shows where volcanoes are located along the Ring of Fire.	
a	Describe the Ring of Fire and explain why it has a concentration of active volcanoes.	[5]
	Ring of Fire refers to the line / concentration of volcanoes found along the boundaries of the Pacific Plate in relation to other plates in movement.	2m
	1m	
	Stretches fm NZ, the sw Pacific, Indonesia, the Philippines, Japan, up to Kamchatka. Across to Alaska in N Am, down the Cascade Range on the west coast to Central Am and to the Andes. Accept western coast of N/S America. ( Accept any 2 locations named to obtain 1m) 2m	3m
	Convergence /Subduction occur 1m as plates collide and denser oceanic plate subducts under the lighter continental or oceanic plate. 1m Magma rises through fractures to form volcanoes and active eruption is frequent. 1m	
b	Explain how convection currents move tectonic plates.	[4]
	<ul style="list-style-type: none"> <li>Convection currents are formed as magma is heated and cooled in a continuous process in the earth</li> <li>Magma heated up by core and rises , and cools down as it moves away from heat source.</li> <li>When magma reaches just below the crustal layer, it spreads outwards, dragging the plates above in a divergent movt.</li> <li>As magma cools and become denser, A slab-pull force is created , dragging/pulling plates downward into the asthenosphere.</li> <li>driving the magma further into the mantle where it is heated again and rise to repeat the cycle. ( similar point as first; no need to repeat in scripts)</li> </ul>	

- c Study photograph A which shows the before and after images of the eruption of Mt t Helens Washington USA.

i Describe the changes in the physical landscape of Mt St Helens before and after the eruption.

- The photo on the left is before eruption: cone or peak of volcano is symmetrical and snow-capped.
- Steep on top and broad and gentle once on the lower slopes of the volcano.
- Surrounding area is dark, showing dense vegetation.
- After eruption, a very large crater is shown with much of the original volcano destroyed .
- Parts of the volcano material has slumped on the slope of the volcano.
- The surrounding area shows more bare outcrop where the vegetation once was. Vegetation has been destroyed by the eruption.

2m for each of description of the before and after ( Any 2 points from each segment) [4]

- ii Discuss, with examples, the environmental risks and economic benefits of living in volcanic regions. [4]

Risks :

Environmental - destruction by volcanic materials

Pollution of waterways

Landslides

Effects on weather

Economic benefits:

Tourism

Agriculture

Geothermal heating

Relevant examples should be given to support points.

- d "Short term responses are not as effective as long term mitigation measures in managing the effects of earthquakes."  
To what extent do you agree to this statement? Discuss with suitable examples.

Why is there the need to manage effects of earthquakes.

L1 1-3m	<p>List of mitigation measures.</p> <p>Differentiates between short term responses and long term measures.</p> <p>States stand wrt above statement: agree or disagree / small or big extent.</p> <p>Some general statements on either ST responses or LT measures without analysis.</p> <p>Examples may be lacking or are place name examples only.</p>
L2 4-6m	<p>Differentiates betw ST response and LT measures.</p> <p>Discusses at least one ST responses : effectiveness and limitation</p> <p>Discussion must be balanced and given examples to support.</p> <p>Discusses at least one LT measure : balanced in analysis of effectiveness and limitations.</p>

[8]

- L3 7-8m Differentiates betw ST response and LT measures.  
Discusses **at least one/two** ST responses : effectiveness and limitation  
Discussion must be balanced and given examples to support.  
Discusses **at least one/two** LT measure : balanced in analysis of effectiveness and limitations.  
Concluding analysis

Total points of discussion should be 3 in a combination of both ST responses and LT measures.

- 2a Photograph B shows the features of a landform found in the Himalayan range.

Describe the features of this landform and suggest how tectonic processes resulted in its formation. [4]

- Snow-capped mountain peaks with **rock layers bent** (and exposed)/ rock layers are **folded / layers that have many folds**
- Some parts show **fractures or fault** across the folds

Tectonic processes:

- Folding process due to **compressional forces / buckle and fold** along convergent boundary such as Himalayan range.
- Rock layers are compressed and **folded up** to form **syncline and anticline** (In addition, forces may fracture rocks and faultlines develop, breaking folds.)

\*\* 2m for each aspect of question

- bi Suggest why Singapore experiences much convectional rain. [4]
- Singapore located very close to the equator /Areas in the tropics are more prone to intense heating of the land
  - High angle of incidence so Sun's rays concentrated on smaller area
  - Low elevation of land also ensures that higher temps are experienced,
  - In addition, large amounts of moisture available from surrounding seas.

- ii Explain the formation of convectional rain. [4]
- Land intensely heated up resulting in unstable air, expands and rise and cools.
  - **At dew point temp, RH is 100%, air is saturated.**
  - **With further cooling, condensation occurs in presence of condensation nuclei** forming (Cumulonimbus) Clouds
  - When droplets are too heavy to remain suspended in the atmosphere, it results in Heavy rain with thunder and lightning

- c Figure 2 shows the percentage of carbon dioxide emissions in the world.

**Explain** the difference in carbon dioxide emissions by the richest and the poorest people in the world. [5]

- Describe using data : 50% of the poorest emit only 10% of CO<sub>2</sub> while the richest 10% emit 50% of the total CO<sub>2</sub> (1m)
- Explain why: Poorest countries have low econ devp and are more agrarian based such as farming, forestry, fishing using **low technology that does not emit high levels of greenhouse gases.**

- More reliant on available natural resources from environment.
- Has less disposable income thus less demands for more consumer goods and services / consumerism low
- In richest countries which are mostly developed countries/ advanced developing eg NIEs, with greater econ devp through industrialization, greater disposable income, more demand of goods and services.
- More industries set up with greater emissions. Furthermore, with more transport network and accessibility, more exhaust fumes add to the emission levels.

- d "Physical damage from hurricanes is the most impactful to a country." Discuss this with reference to examples. [8]

- L1 1-3m List of impact  
States stand wrt above statement: agree or disagree / small or big extent.  
Some general statements about physical damage from hurricanes without analysis.  
Examples may be lacking or are place name examples only.

- L2 4-6m Discusses **at least one** physical damage : extent and examples to support.  
Discusses **at least one** other damage ( econ or social) extent and example.

- L3 7-8m Discusses **at least one/two** physical damage :  
Discusses **at least one/two** other damage :  
  
Examples should be specific to the damage discussed.  
Concluding analysis  
  
Total points of discussion should be 3 in a combination of different damages caused by hurricanes.

## Section B

3a	Figure 3 shows the distribution of infant mortality rates in 2012.	
i	<p>Describe the distribution of infant mortality rates in 2012. [3]</p> <ul style="list-style-type: none"> <li>Concentration of high IMR in Africa esp <b>SSA countries</b></li> <li>High rates of 85 to 185 <b>per 1000 births</b>, with highest rates in Somalia, Chad, Angola. / The other areas with high rates of about 135-160 per 1000 births are Pakistan and Afghanistan.</li> <li>Low IMR from 10-60 per 1000 births in Asia, South America, Southern Africa</li> <li>Very low IMR below 10 per 1000 births evident in the more developed countries in Europe, North America (USA &amp; Canada), Japan and Australia</li> </ul> <p>Credit 1m for data quoted with unit per 1000 births.</p> <p><b>** students must make ref to adjectives of comparisons eg low, high</b></p>	
ii	<p>Explain how access to healthcare and drinking water affect infant mortality rates in developed and less developed countries. [5]</p> <ul style="list-style-type: none"> <li>access to healthcare and drinking water have direct impact on the health of people esp infants who are vulnerable to diseases.</li> <li><b>** infant mortality rates refer to the number of infants who die before they turn a year old</b></li> <li>LDCs esp those in Sub Saharan Africa lack many basic amenities as poverty and political conflict leave many people here without proper healthcare services. For example : The doctor-patient ratio is about 1 to 10000 on an average, / hospitals are very far away / Medication is also not so readily available esp if people cannot afford to buy them.</li> <li>Drinking water supply can be contaminated as sanitation facilities are not widespread nor well maintained. People who consume such water fall ill with cholera and dysentery, and infants may die easily.</li> <li>In DCs, the situation is reversed as many of such countries have high econ devp where infrastructure and amenities are provided for and well maintained.</li> <li>Healthcare access with specialist medical personnel, hospital or clinics and medication readily available to all.</li> <li>In addition, education and higher income earned make healthcare and clean drinking water easily available.</li> </ul> <p><b>** can also accept if the approach to answer is from perspective of how having access to healthcare etc can be a positive impact.</b></p>	

b	Figure 4 is an advertisement on children with HIV/AIDs .	
	<p>Describe the social and economic impact of HIV/AIDs on these children. [4]</p> <ul style="list-style-type: none"> <li>Social stigma</li> <li>Lack of education opportunities: Orphans do not have opportunities to go to school and the lack of awareness may increase spread of the disease.</li> <li>Short life expectancy if no medication is available to orphans</li> </ul> <p>Economic:</p> <ul style="list-style-type: none"> <li>Govt and carers of these orphans are in deep poverty with high medical costs and extra living expenses</li> <li>Also, these orphans remain poor as they are without education and do not contribute to the economy. They do not earn enough to support themselves.</li> <li>In addition, they become main care givers to their siblings but are not able to afford basic necessities.</li> <li>As a result, some are forced into prostitution or recruited as child soldiers by rebel/ terrorist groups in conflict with the government.</li> </ul> <p><b>** answers need to show the approach of how having HIV/AIDs will affect the children. Answers cannot be generalized to show impact on the economy by AIDs carriers. Target group here is the children.</b></p>	<p>} 2m</p> <p>} 2m</p>
c	Study figure 5 which shows the impact of education on preventing the spread of HIV/AIDs in Kenya.	
	<p>Using the figure, compare and explain the impact of education in preventing the spread of HIV. [5]</p> <p><b>Compare point by point across the 2 aspects shown:</b></p> <ul style="list-style-type: none"> <li>An increase in education / those who complete primary schooling show an increase in knowledge that condoms prevent HIV + data</li> <li>Also with the increase in years of education, there is also an increase in the use of condoms + data</li> <li>Yet condom use remain low regardless of years of education + data.</li> </ul> <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> <li>those who had no education did not use condoms despite about 15% of them having knowledge of how condoms prevented HIV spread.</li> <li>Close to about 50% of women with incomplete primary schooling had knowledge of the use of condoms but less than 10% used condoms.</li> <li>60% of those who had completed primary education were knowledgeable about condoms but only about 15% of them were using condoms.</li> </ul> <p>Up to 2m given for a complete comparison with data: students must encode data into their description.</p> <p><b>Explain:</b></p> <ul style="list-style-type: none"> <li>Generally education raises awareness of preventing the spread of HIV with more knowledge of the virus and the use of condoms.</li> <li>However having only primary schooling does not raise enough of awareness to protect themselves and prevent the HIV from spreading rapidly.</li> <li>Despite education, the lack of accessibility to purchase / obtain condoms</li> <li>Education may not have a great impact when poor economic status may force women into vice trades to survive. Thus even with knowledge of</li> </ul>	

condoms, many may not actually use them to prevent the virus.

Up to 3m for explanation of the influence of education

- d "Managing the spread of infectious diseases require cooperation among different stakeholders." [8]  
Discuss this statement with reference to examples.

L1 1-3m Why the need to manage spread of infectious diseases  
List of diff stakeholders to cooperate.  
States stand wrt above statement: agree or disagree / small or big extent.  
Some general statements how stakeholders can manage spread without analysis.  
Discusses **at least one** stakeholder group briefly with Examples lacking or are place name examples only.

L2 4-6m Discusses **at least 2** stakeholder groups : their effectiveness and limitations of strategies analysed and examples to support.

L3 7-8m Discusses **at least 3** stakeholder groups : their effectiveness and limitations of strategies analysed and examples to support.  
Examples should be specific to the groups discussed.  
Concluding analysis.  
  
Total points of discussion should be 3 in a combination of different damages caused by hurricanes.

- 4a Figure 6 shows the extent of confirmed malaria cases in the world.

- i Describe the distribution of malaria cases shown in Fig 6. [3]

Uneven spread with high concentration in some parts of the world  
High risk areas in Sub Saharan Africa, northern part of South America, South Asia including India and South East Asia Laos, Cambodia, Indonesia  
Areas with limited to no risk are mainly DCs and NIEs

1m for data

- ii Suggest how climate change and income levels may explain the prevalence of malaria in some parts of the world. [4]

Climate Change: Changes in temp, rf and RH will create favourable conditions for mosquito breeding  
Increase in temp shorten devp time of life cycle of mosquitoes and parasites in mosquito so infections become more prevalent  
Changes in rf may increase pools of stagnant water that breed mosquitoes  
Higher RH increases survival of mosquitoes and spread of malaria increases.

Income levels

Poverty impact lives of those living in malaria prone area. Without income, many continue to live in overcrowded areas with poor hygiene and sanitation. These areas are conducive for mosquito breeding and spread of malaria is higher. Poverty also mean poor or lack of accessibility to medical services and supplies. Those infected face delay in treatment or have no money to buy the ACT pills to clear the infection. Malaria continues to be prevalent in these areas with high levels of poverty.

- b Figure 7 shows how different countries view the labelling of genetically modified foods.

Discuss why countries differ in their view that genetically modified foods should be labelled. [5]

Define GMO 1m

Countries that require labelling: 2m for any one well discussed answer

- human health risks
- Loss of bio diversity

USA and Canada do not require labelling: 2m  
Labelling means consumers have a choice to choose betw GMO or non-GMO related products.

- Reasons include fear of consumer rejection of GMO related products because of high capital investment in pdn costs.
- May impact investments into agri-business and food industry
- Decline in profits

\*\* to answer this qn, one needs to understand the advantages and disadvantages of GMO and its impact on society.

- c How may inadequate food intake impact the economic development of a country? [5]

Inadequate food intake may result in malnutrition and starvation. (this may apply to certain groups of people in BOTH DC and LDCs).

Economic impact include:

Lower productivity  
Increase in healthcare expenditure  
Long term debts

- d "International food aid programmes are the best measures in reducing food shortage." To what extent do you agree with this statement? [8]

L1 1-3m Why reducing food shortage is imp  
List of diff programmes available including international food aid programme.  
States stand wrt above statement: agree or disagree / small or big extent.  
Some general statements how international food aid programmes / other measures can reduce food shortage without analysis.  
Discusses **one international food aid programme** (WFP or GAFSP) briefly with Examples lacking or are place name examples only.

L2 4-6m	Discusses <b>at least 1 other strategy</b> : their effectiveness and limitations of strategies analysed and examples to support.
L3 7-8m	Discusses <b>at least 2more strategies</b> : their effectiveness and limitations of strategies analysed and examples to support. Examples should be specific to the groups discussed. Concluding analysis.  Total points of discussion should be 3 in a combination