

ANDERSON SECONDARY SCHOOL
Preliminary Examinations 2018
Secondary Four Express



CANDIDATE NAME:

CLASS:

INDEX NUMBER:

GEOGRAPHY

2236/01

29 August 2018

1 hour 40 minutes

Additional Materials: Insert

1130 – 1310h

Insert 2

Writing Paper

READ THESE INSTRUCTIONS FIRST

Write your name, class and index number on all the work you hand in.
 Write in dark blue or black pen on both sides of the paper.
 Do not use staples, paper clips, highlighters, glue or correction fluid/tape.

At the end of the examination, fasten all your work securely together.
 The number of marks is given in brackets [] at the end of each question or part question.
 Write **ALL** answers on your own writing paper except Question 1d(i) which should be answered on **Insert 2**.

Answer **Question 1** from Section A.

Answer either **Question 2** OR **Question 3** from Section B.

Section A	25
Section B	25
Total Marks	50

This document consists of 5 printed pages and 2 Inserts.

Section A

This question is compulsory.

- 1 a (i) A group of managers from Berrygood Hotel Group embarked on a coastal investigation at North Bay Waterfront in Ontario, Canada to find out the suitability of building coastal resorts there.

Fig. 1 (Insert) shows the aerial view of North Bay Waterfront in Ontario, Canada.

They crafted 3 possible hypotheses:

1. 'Sediment size becomes smaller in the direction of longshore drift.'
2. 'Sediment size changes in the direction of longshore drift.'
3. 'Sediment sizes becomes smaller when there is longshore drift.'

Select the best hypothesis for them to use and justify your answer. [2]

- (ii) Explain how they can determine the direction of longshore drift along the coast. [3]
- b The managers decided to collect sediments at Site A and B (Fig. 1, Insert) to compare the size of the sediment at the two sites.
- (i) Describe how they can conduct fieldwork to collect sediments at the two sites. [5]
- (ii) The managers of Berrygood Hotel Group sieved 100g of sample from each point and presented their results in the table below:

Size of Sediment	Site A	Site B
4mm	7g	0g
3mm	43g	1g
1mm	28g	7g
0.5mm	14g	14g
0.1mm	8g	78g

Table 2

Using Table 2 above, as well as information from Fig. 1 (Insert), discuss the suitability of developing beach resorts at each site. [3]

- c** The managers decided to conduct a questionnaire survey of the local residents living there (Fig 2, Insert) to find out potential challenges they may face in developing the site.

Explain how systematic sampling can be used to select 100 respondents to answer the questionnaire survey. [2]

- d (i)** The results of the questionnaire survey are presented in Table 3 (Insert).

With reference to Table 3, represent the responses for **Question 5** by completing the pie chart in Insert 2. [3]

- (ii)** With reference to Table 3, comment on the feasibility of building budget youth hostels and live concert venues along the coast based on the demographic of residents at North Bay Waterfront. [5]

- (iii)** Suggest how the managers could improve on the reliability of the questionnaire survey in Fig. 2 (Insert), as well as their sampling method. [2]

Section B

Answer **ONE** Question from this section.

- 2 a) Fig. 4 (Insert) shows a news clipping about the USA- North Korea Political Summit held on 12 June 2018 in Singapore.
- With reference to Fig. 4, explain how this event may boost tourism numbers in Singapore. [4]
- b) Fig. 5 (Insert) shows a tourist participating in a cultural lesson on the significance of traditional dress of the Long neck Karen Tribe in North Thailand. Fig. 6 (Insert) shows a tourist snapping photographs of a woman from the same tribe.
- With reference to Fig. 5 and 6, evaluate the impact of tourism on the Long neck Karen Tribe. [5]
- c) Discuss the factors that could give rise to large destructive waves along a coastline. [4]
- d) Fig. 7 (Insert) shows a map of the Japanese Shinkansen (Bullet Train). Fig. 8 (Insert) shows the interior of the Maharaja Express Luxury Train in India.
- With reference to Fig. 7 and 8, compare the Shinkansen and the Maharaja Express in terms of their appeal to tourists and the profile of tourist that they would appeal to. [4]
- e) 'Developing tourism along the coast does the coastal environment more harm than good.'
- To what extent do you agree with the statement? Use examples to support your answer. [8]

- 3 a) Fig. 9 (Insert) is a graph that charts the presence of mangrove forests along the coast and its effect on wave height. Fig. 10 (Insert) shows two coastal areas, one protected by mangrove forest (Coast M), and one left exposed (Coast N).

With reference to Fig. 9 and 10, compare and account for the level of impacts of a tsunami on Coast M versus Coast N. [5]

- b) Fig. 11 (Insert) shows modified tetrapods also known as TetraPOT.

With reference to Fig. 11, discuss the benefits of this tetrapod design in protecting the coast. [4]

- c) Evaluate the impacts of fisheries and aquaculture in South East Asia. [4]

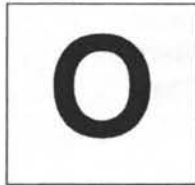
- d) Fig. 12 (Insert) shows how the beach profile of a coastline may change after seawalls are built along the shore.

With the use of Fig. 12, explain how coastal processes and the presence of the seawall have modified the coastline. [4]

- e) 'Coastal degradation brings about mainly economic consequences.'

To what extent do you agree with the statement? Use examples to support your answer. [8]

END OF PAPER



ANDERSON SECONDARY SCHOOL
Preliminary Examination 2018
Secondary Four Express



CANDIDATE NAME:

CLASS:

INDEX NUMBER:

GEOGRAPHY**2236/01****29 August 2018****1 hour 40 minutes****1130 – 1310h**

INSERT

This Insert contains Fig. 1, 2 and Table 3 for Question 1, Fig. 4, 5, 6, 7, 8 for Question 2 and Fig. 9, 10, 11, 12 for Question 3.

This document consists of 11 printed pages.

Setter: Ms Kwok Shi Min Shermine

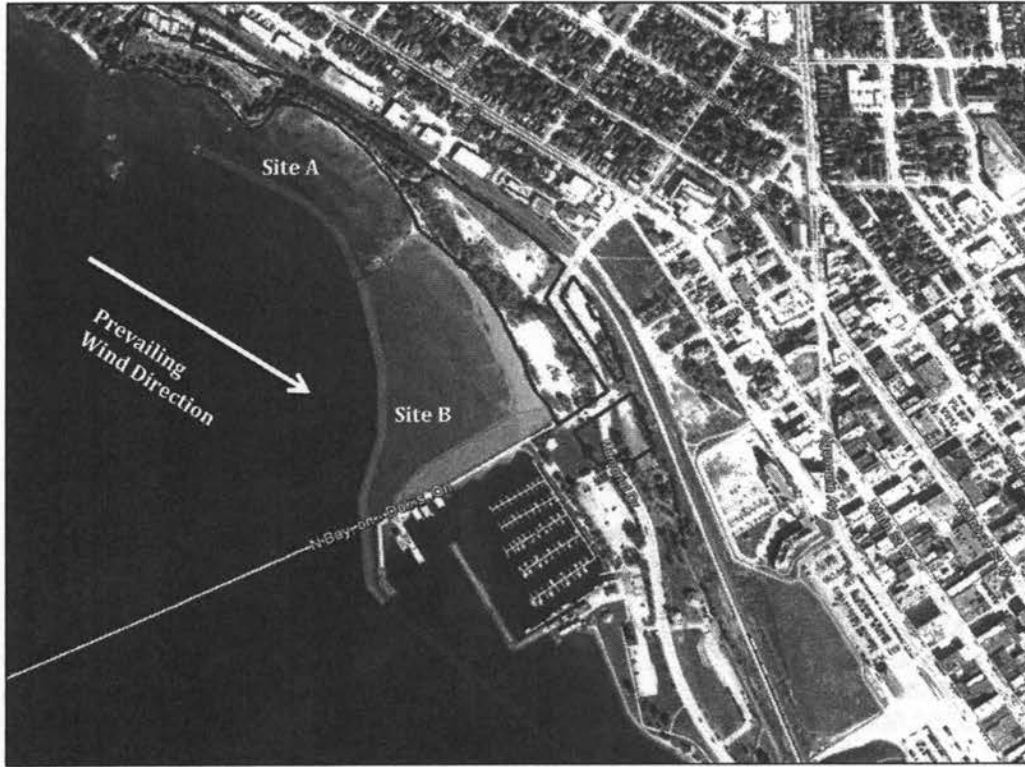


Fig. 1 for Question 1

Questionnaire Survey of Local Residents at North Bay Waterfront**1. What is your age? (Please circle)**

Below 18
19- 35
36- 55
56- 70
Above
70

2. How long have you lived at North Bay Waterfront? (Please circle)

Less than 5 years
5-10 years
11-15 years
15- 20 years
More than 20 years

3. Which household income bracket do you belong to? (Please circle)

Less than \$50,000 a year
\$50,000 to \$100,000 a year
\$100,000 to \$350,000 a year
\$350,000 to \$500,000 a year
More than \$500,000 a year

4. Which activity do you most often participate in at the beach? (Please circle)

Fishing (Commercial)
Fishing (Hobby)
Picnic
Sports (Beach and Water)
Recreational yachting and Boating

5. If tourism facilities are to be build along the coast, what would be your top concern with regards to its development? (Please circle)

Destruction of natural coastal features
Overcrowding
Pollution and Litter
Competition for resources
High noise levels

Thank you for your response!

Fig. 2 for Question 1

Question 1	Below 18	19- 35	36- 55	56- 70	Above 70
No. of respondents	4	16	25	25	30
Question 2					
	Less than 5 years	5-10 years	11-15 years	15- 20 years	More than 20 years
No. of respondents	2	5	15	12	66
Question 3					
	Less than \$50,000 a year	\$50,000 to \$100,000 a year	\$100,000 to \$350,000 a year	\$350,000 to \$500,000 a year	More than \$500,000 a year
No. of respondents	0	5	23	49	24
Question 4					
	Fishing (Commercial)	Fishing (Hobby)	Picnic	Sports (Beach and Water)	Recreational yachting and Boating
No. of respondents	0	30	12	24	34
Question 5					
	Destruction of natural coastal features	Overcrowding	Pollution and Litter	Competition for resources	High noise levels
No. of respondents	21	32	28	4	15

Table 3 for Question 1



SINGAPORE – Top officials are scrambling to plan the historic meeting between President Donald Trump and the North's leader Kim Jong Un planned for June 12 in the city-state which was chosen due to its track record of excellent infrastructure, facilities and expertise to host high-profile events on a massive scale. It also boasts strong security forces, and a world class transport system.

While some may lament the sudden influx of media and diplomats, businesses see it as an opportunity. Hotel rooms are being snapped up, and thousands of media reporters and foreign diplomats are expected to jet in to cover the historic event. The famous Escobar has come up with two special summit drinks. The "Trump" is a blue, bourbon-based cocktail while the "Kim" is a red-coloured cocktail with soju, a Korean liquor, as its base. Both cost \$12.60, a reference to the summit's expected date.

Fig. 4 for Question 2a)

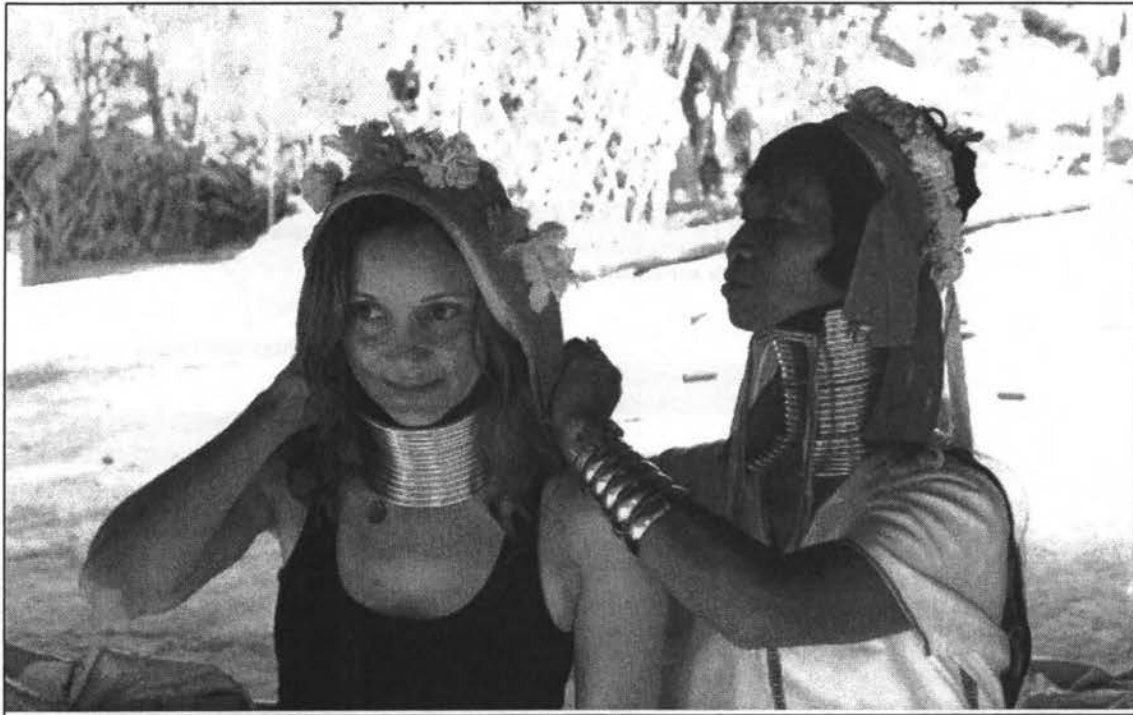


Fig. 5 for Question 2b)

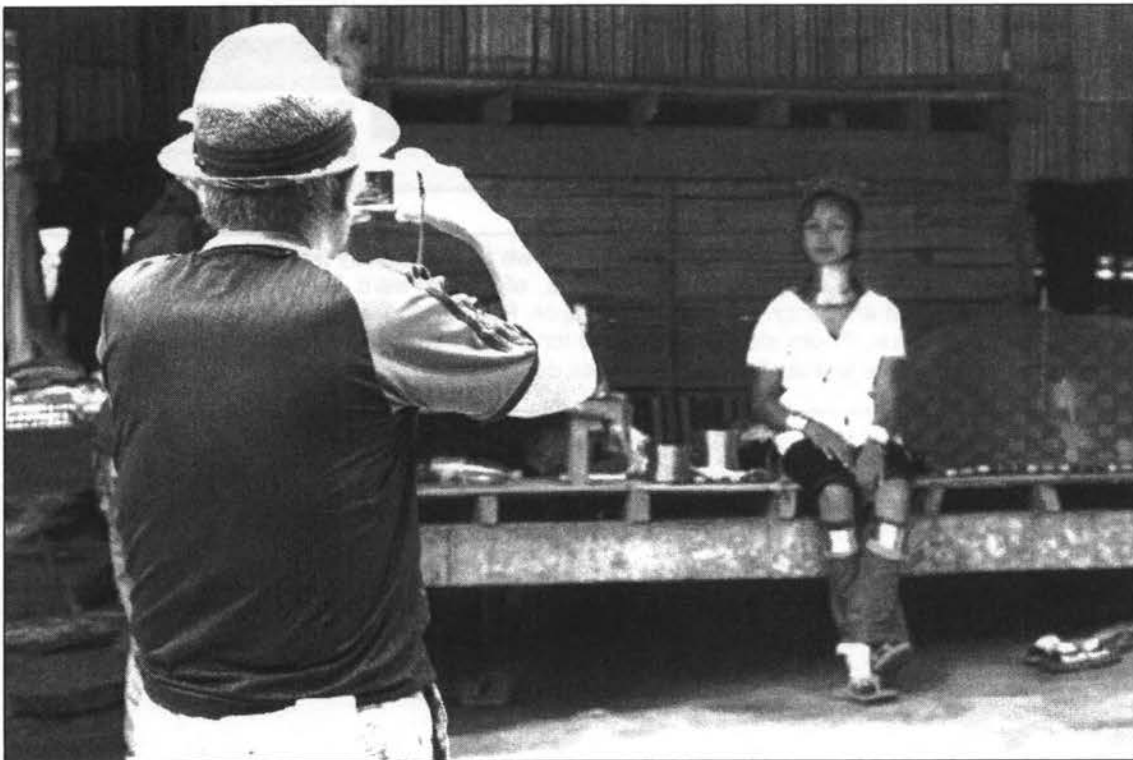
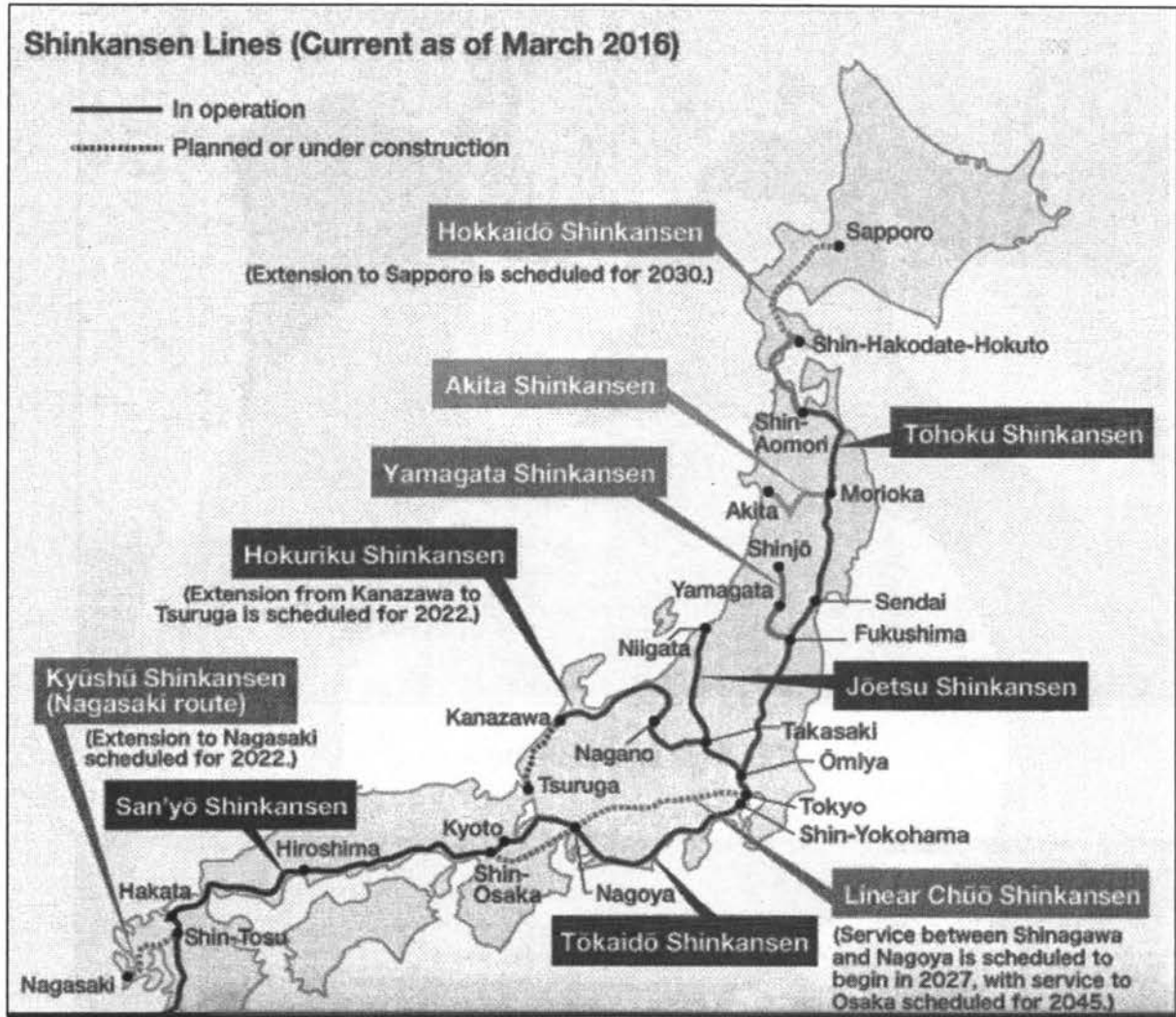


Fig. 6 for Question 2b)



Running at speeds of up to 320 km/h, the shinkansen is known for punctuality (most trains depart on time to the second), comfort (relatively silent cars with spacious, always forward facing seats), safety (no fatal accidents in its history) and efficiency. Thanks to the Japan Rail Pass, the shinkansen can also be a very cost effective means of travel. Prices start at \$450 SGD for a 7 day pass of unlimited travel, and passenger may also choose to buy single journey tickets, with prices depending on distance travelled.

Fig. 7 for Question 2d)



Maharaja's Express can be introduced as one of the most popular luxury trains running on Indian rails. The train was incepted in 2010 with a view to provide unmatched luxury to guests looking for the royal experience. King size beds that were studded with jewels, cabins that would put Five Star hotel suites to shame, hospitality that even the Rajahs of yore would envy. It is all these things and more that makes the Maharaja's Express not just a journey. It is a lifestyle – 7 days of godly bliss, recreating the lifestyle of a princely era. The price for the shortest 8 day 7 nights journey starts from \$8000 SGD.

Fig. 8 for Question 2d)

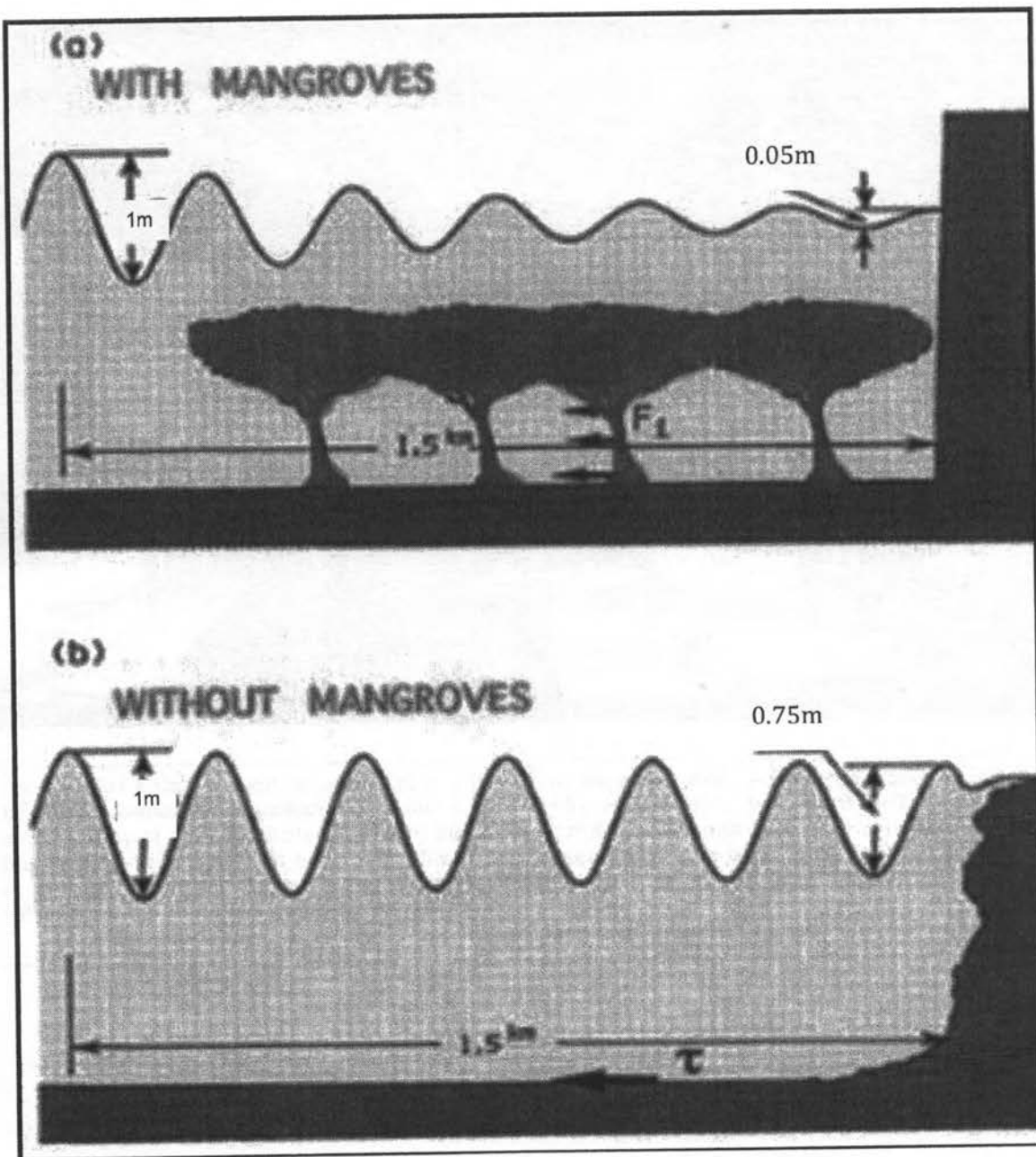


Fig. 9 for Question 3a)



Fig. 10 for Question 3a)

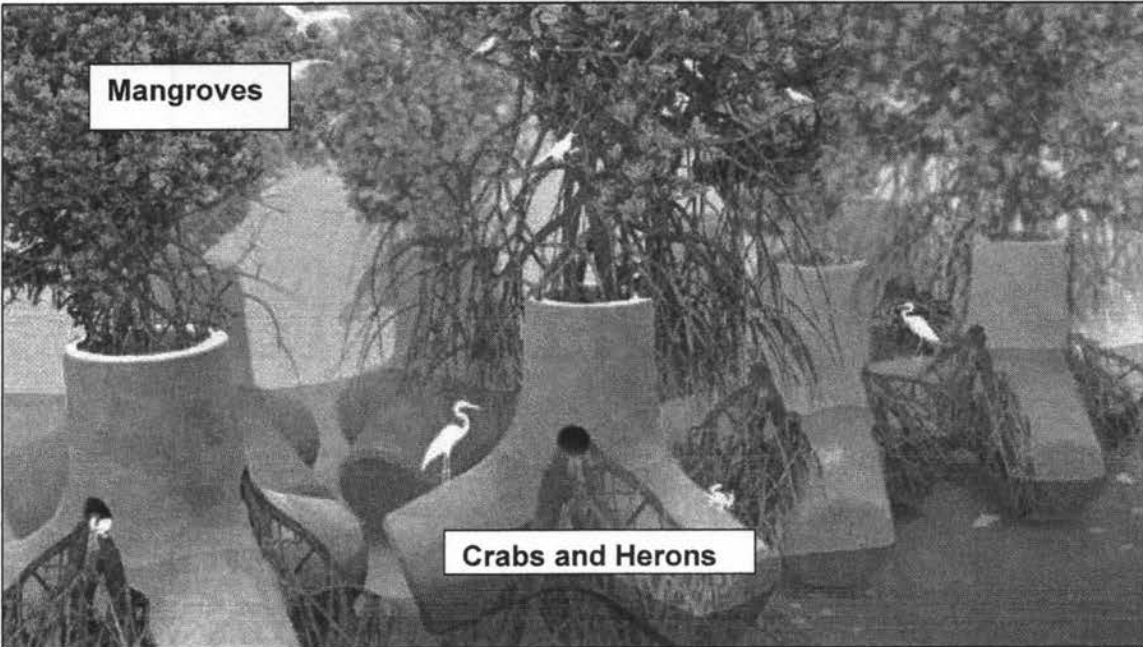


Fig. 11 for Question 3b)

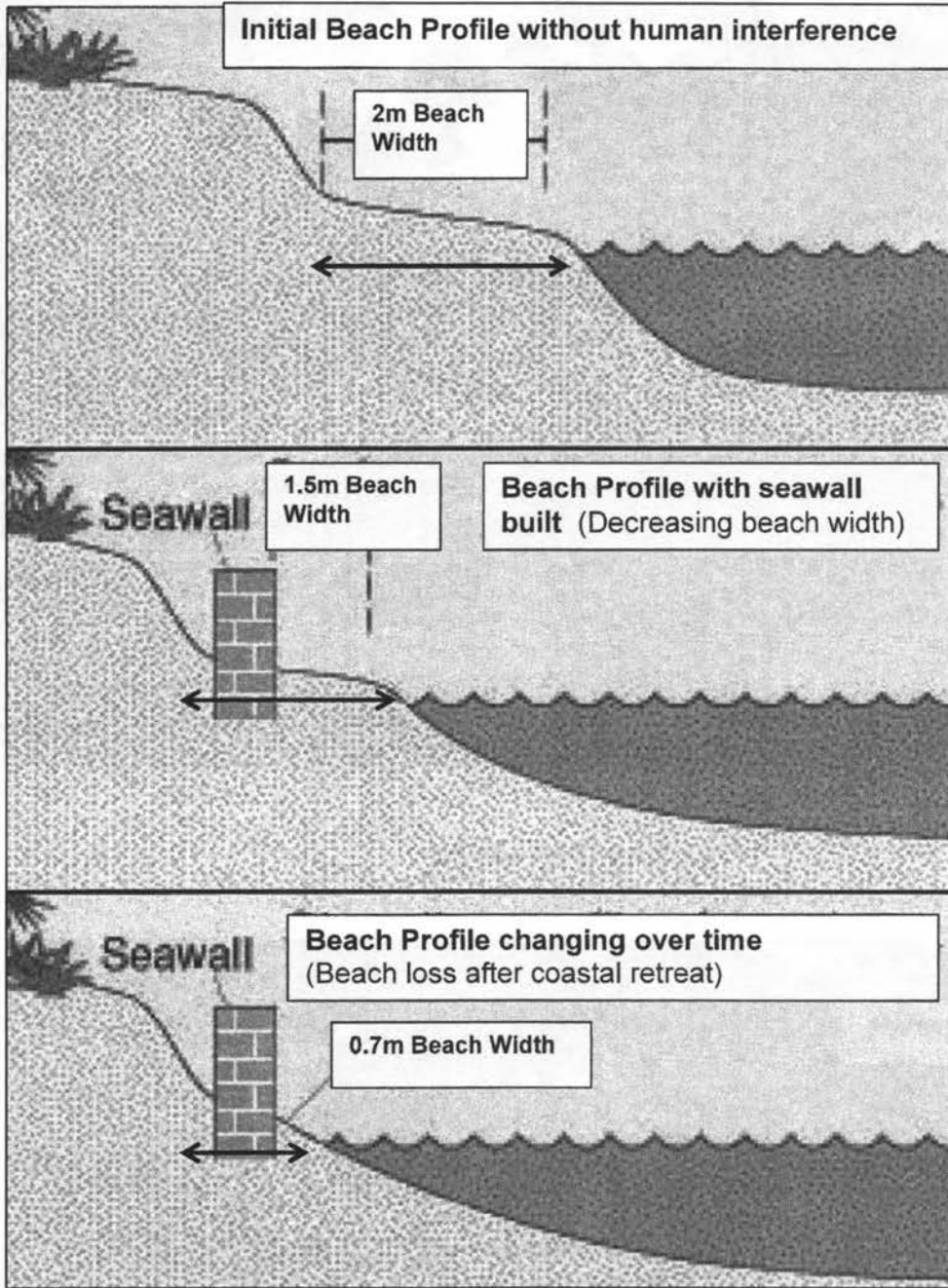


Fig. 12 for Question 3d)

Copyright Acknowledgments:

Fig 1: http://rwsommers.ca/river_sand_marina/

Fig 4: <http://indianexpress.com/article/world/singapore-summit-with-north-koreas-kim-jong-un-on-june-12-donald-trump-5200762/>

<http://japan-forward.com/5-reasons-singapore-is-chosen-to-host-the-u-s-north-korea-summit/>

Fig 5: <https://www.thailandhilltribeholidays.com/visit-long-neck-village/>

Fig 6: <https://www.pri.org/stories/2017-12-06/thailands-long-neck-villages-arent-just-controversial-tourist-attractions-theyre>

Fig 7: <https://www.nippon.com/en/features/h00077/>

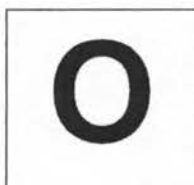
Fig 8: <https://www.connaisseursvoyage.fr/autres-categories/grands-trains-du-monde/fiche/296-l-inde-le-maharaja-s-express-l-indian-panorama.html>

Fig 9: <https://www.omicsonline.org/open-access/mangrove-area-assessment-in-india-implications-of-loss-of-mangroves-2157-7617-1000280.php?aid=54779>

Fig 10: <https://www.youtube.com/watch?v=9jni98YDvf8>

Fig 11: http://orientaldaily.on.cc/cnt/china_world/20161102/mobile/odn-20161102-1102_00180_042.html

Fig 12: <http://www.sunbayerpaper.com/news-around-the-bay/environment/seawalls-mean-death-to-the-beaches>



ANDERSON SECONDARY SCHOOL
Preliminary Examination 2018
Secondary Four Express



CANDIDATE NAME:

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INDEX NUMBER:

GEOGRAPHY**2236/01****29 August 2018****1 hour 40 minutes****1130 – 1310h**

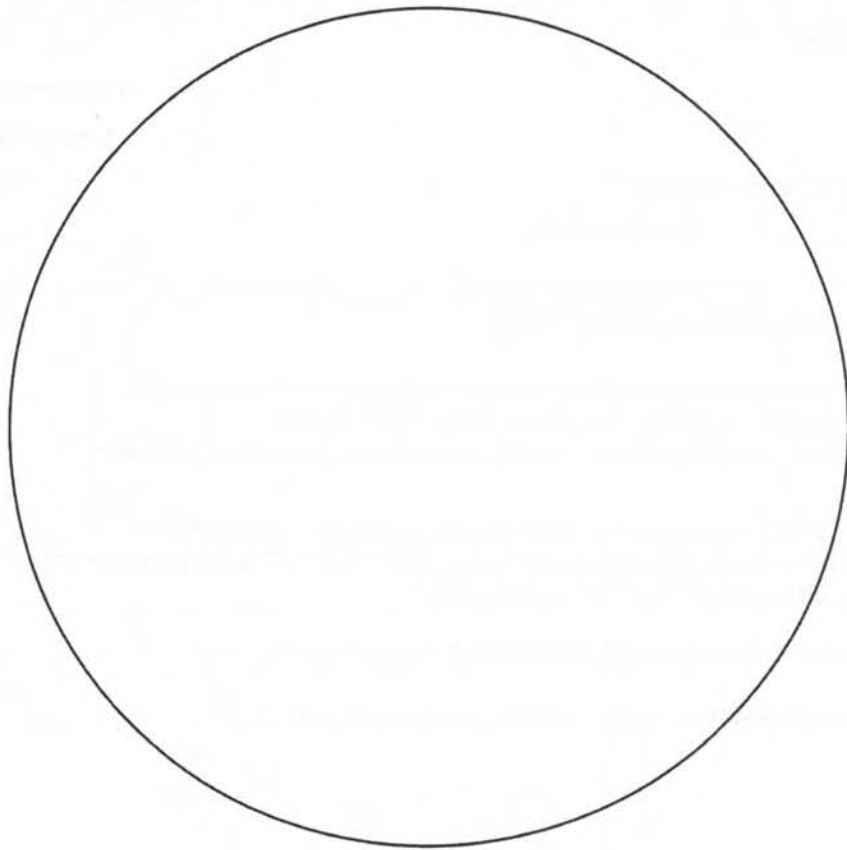
INSERT 2

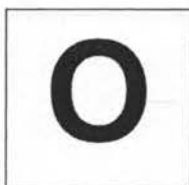
This Insert 2 contains the pie chart for Question 1d(i)

This document consists of 2 printed pages.

Setter: Ms Kwok Shi Min Shermine

Title: _____





ANDERSON SECONDARY SCHOOL
Preliminary Examination 2018
Secondary Four Express



CANDIDATE NAME:

CLASS: / INDEX NUMBER:

GEOGRAPHY

2236/02

11 September 2018

1 hour 30 minutes

Additional Materials: Insert

1045-1215h

Writing Paper

READ THESE INSTRUCTIONS FIRST

Write your name, class and index number on all the work you hand in.
 Write in dark blue or black pen on both sides of the paper.
 Do not use staples, paper clips, highlighters, glue or correction fluid/tape.

At the end of the examination, fasten all your work securely together.
 The number of marks is given in brackets [] at the end of each question or part question.
 Write **ALL** answers on your own writing paper.

Answer either **Question 1 OR Question 2** from Section A.

Answer either **Question 3 OR Question 4** from Section B.

Section A	25
Section B	25
Total Marks	50

This document consists of **4** printed pages and **1** Insert.

Section A

Answer **ONE** Question from this section.

- 1 a)** Study to Fig. 1 (Insert), which shows the formation of the Marianas volcanic islands arc and oceanic trench in the Pacific Ocean.
- With reference to Fig. 1, and the use of the slab-pull theory, account for the formation of the Marianas islands arc and oceanic trench. [5]
- b)** Explain the formation of storm surges during a tropical cyclone. [4]
- c)** Study Fig. 2 (Insert), which shows an early warning system for earthquakes used by the Japanese Meteorological Agency. There are more than 1000 early warning sensors which communicate by radio waves to earthquake early warning centres located in major cities such as Tokyo. The sensors cover almost all of the country.
- Use Fig. 2 and the information above to evaluate the effectiveness of the early warning system used in Japan to manage earthquakes. [4]
- d)** Study Fig.3 (Insert), which describes the climate conditions of an Island located near the equator.
- Use the information in Fig.3, name and account for the climate type of the Island. [4]
- e)** 'The benefits of living near volcanoes are much lesser than perceived.'
- To what extent do you agree with this statement? Use examples to support your answer [8]

- 2 a)** Study Fig. 4 (Insert), which shows information on preparing for a tropical cyclone in the USA.

Evaluate how infrastructure management might reduce the impacts of tropical cyclones. [5]
- b)** Study Fig. 5 (Insert), which shows a volcanic island in the Pacific Ocean.
- (i)** Use the information in Fig. 5 to describe how temperature at X will be different from Y [4]
- (ii)** Account for the lack of rainfall at the dry plains at location Z. [3]
- c)** Compare the formation of local winds and regional monsoon winds. [5]
- d)** 'Impacts of climate change are impossible to manage at a national level by countries.'

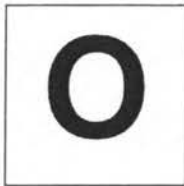
To what extent do you agree with this statement? Use examples to support your answer. [8]

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

- 3**
- a)** Study Fig. 6 (Insert), which shows the percentage of childhood obesity in 5 different countries.
- Compare the percentages of childhood obesity by gender between the countries. [5]
- b)** Study Photograph A (Insert), which shows a type of irrigation system on a farm in New Zealand.
- Describe the advantages of such an irrigation system and its impact on the environment. [4]
- c)** Discuss how poor transport networks and storage facilities can affect food security in a region. [4]
- d)** Fig. 7 (Insert) shows a report on the safety of GM crops by scientists.
- With reference to Fig.7 and the use of examples, discuss why GM crops remain controversial. [4]
- e)** 'The effect of overconsumption of food has a greater impact on the economy of a country than on the health of individuals.'
- To what extent do you agree with the statement? Use examples to support your answers. [8]

- 4 a)** Study Fig. 8 (Insert), which shows data for patients per doctor ratio in different countries.
- (i)** Compare the patients per doctor ratio for the countries shown in Fig. 8. [3]
- (ii)** Suggest the extent to which the countries shown in Fig. 8 are equipped to cope with mosquito borne diseases such as Zika. [5]
- b)** Discuss the relationship between sanitation and life expectancy in countries. [5]
- c)** Study Fig. 9 (Insert), which shows information about poverty, diet and the health of an individual in an impoverished area of a Developed Country (DC).
Using information from Fig.9, discuss the relationship between poverty and health in a DC. [4]
- d)** 'Education is the key to manage the outbreak and spread of infectious disease.'
To what extent do you agree with the statement? Use examples to support your answers. [8]

END OF PAPER



ANDERSON SECONDARY SCHOOL
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Secondary Four Express

CANDIDATE NAME: CLASS:

/

INDEX NUMBER:

GEOGRAPHY**2236/02****11 Sept 2018****1 hour 30 minutes****1045 – 1215h**

INSERT

This Insert contains Fig. 1, 2, 3 for Question 1, Fig. 4, 5, 6 for Question 2 and Fig. 7, 8, 9, 10 for Question 3.

This document consists of 11 printed pages.

Setter: Mrs Merlin Tan-Lim

Fig. 1 for Question 1a

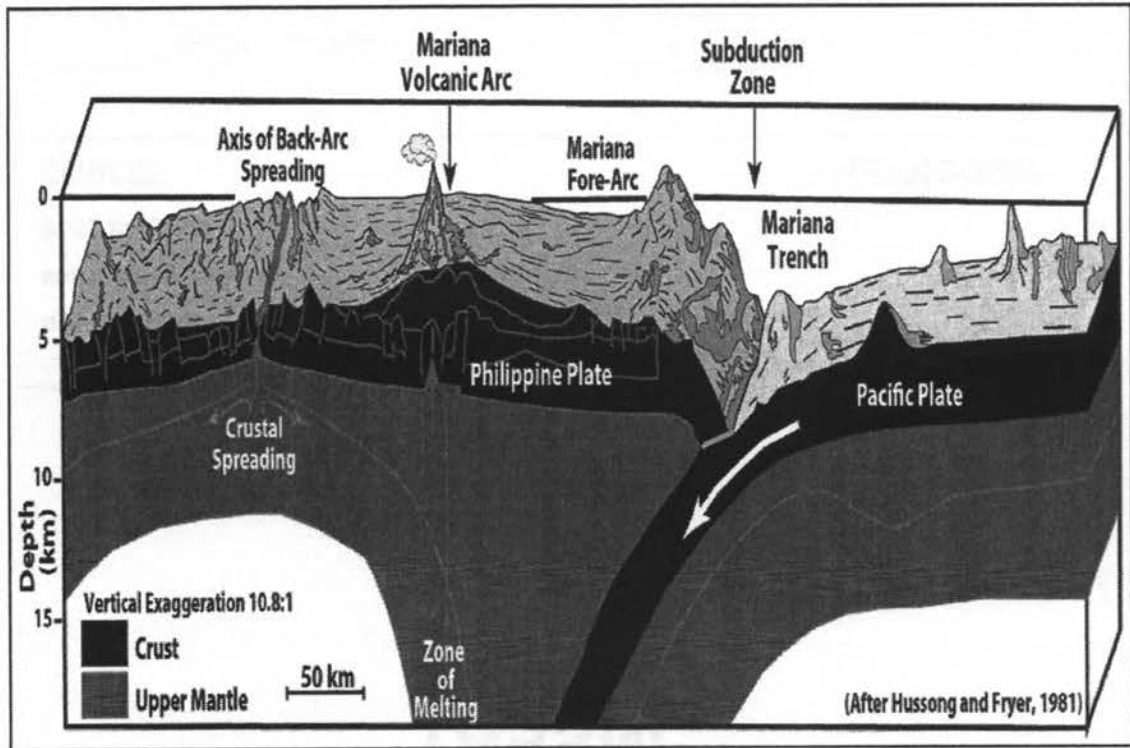


Fig. 2 for Question 1c

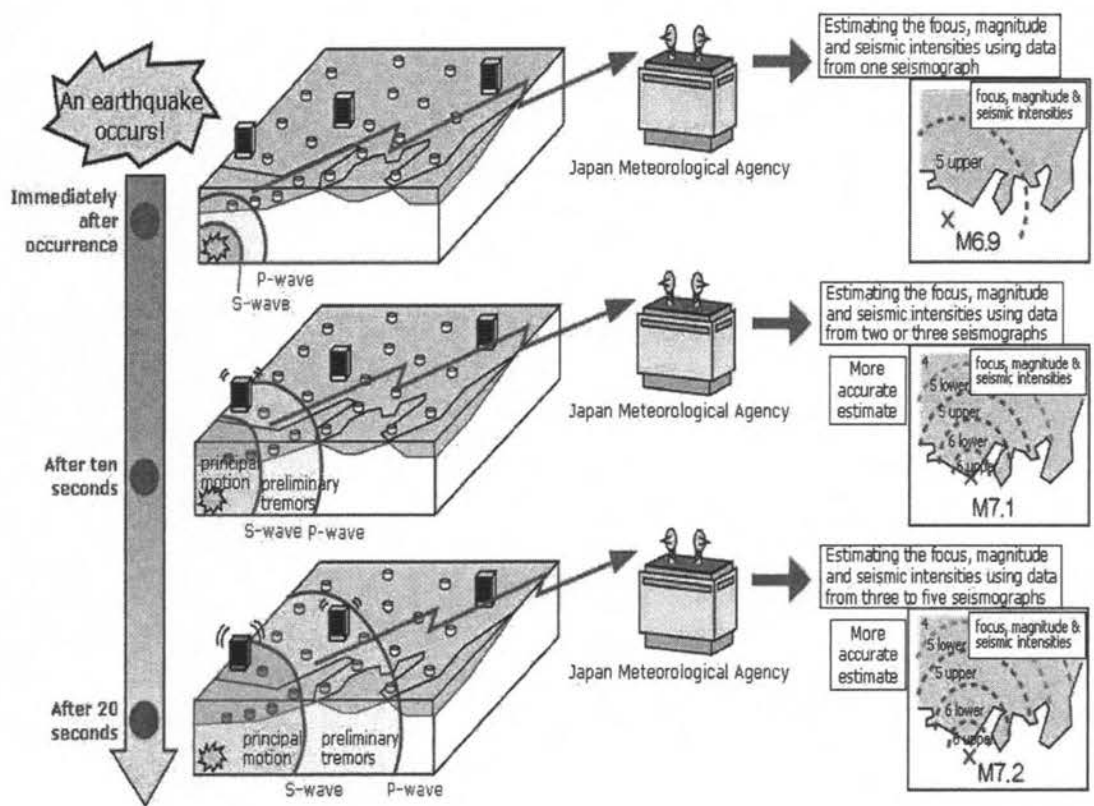


Fig.3 for Question 1d

The island is situated near the equator with abundant rainfall, high and uniform temperatures, and high humidity all year round. The length of its day is relatively constant throughout the year, and so is the amount of sunshine it receives daily. Frequent afternoon and evening thunderstorms are also common due to high relative humidity and temperature.

Fig. 4 for Question 2a

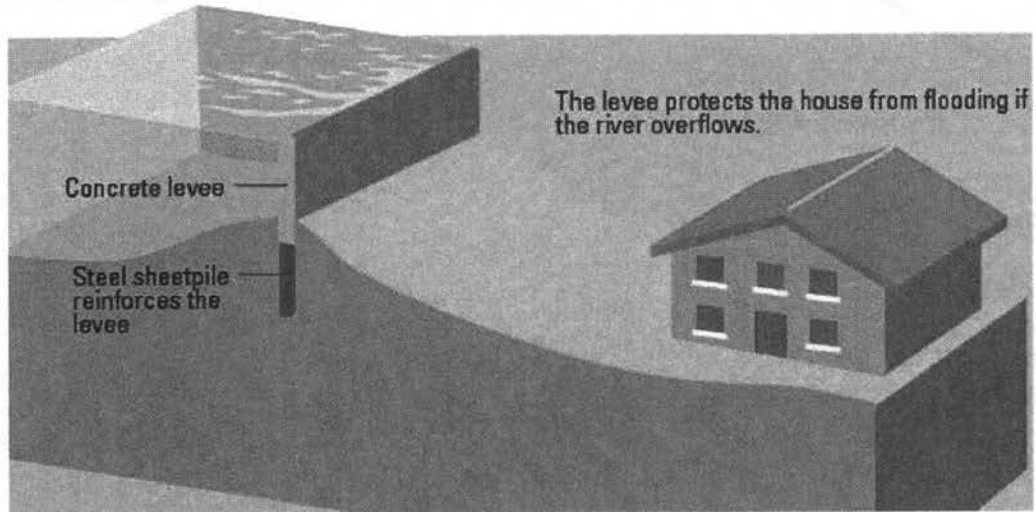
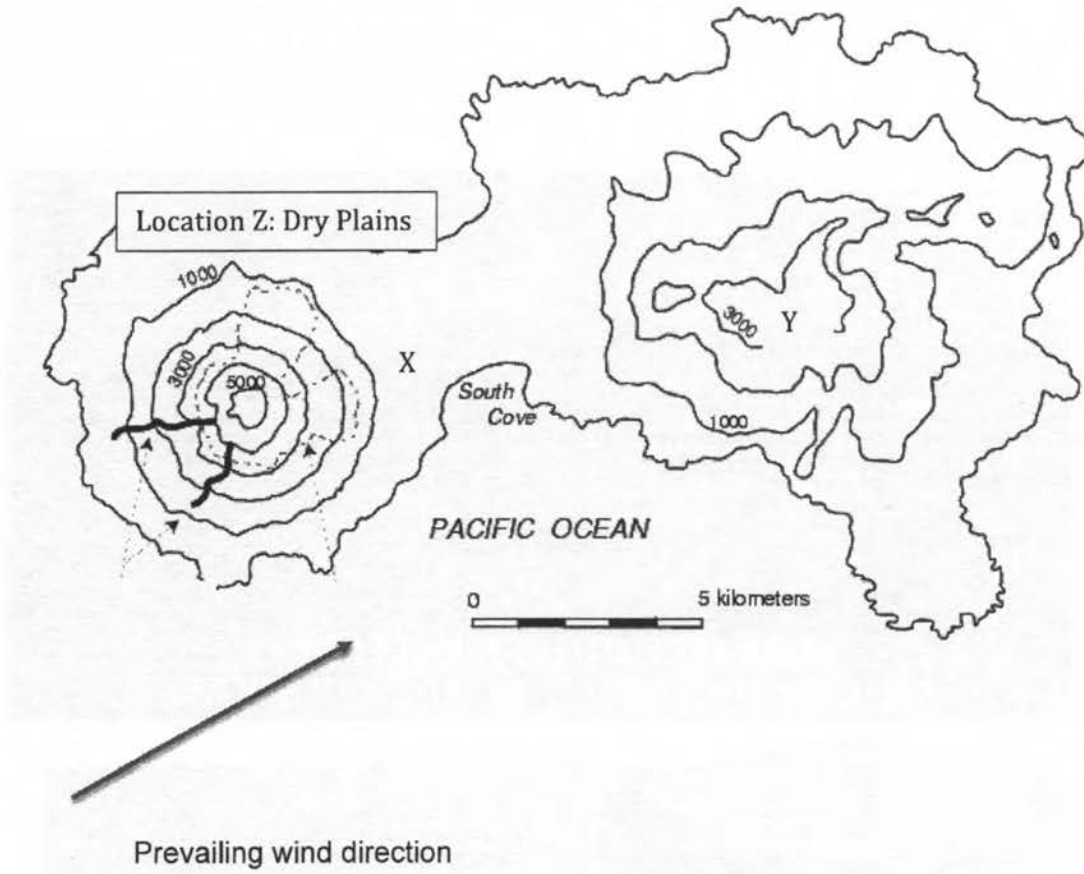


Fig. 5 for Question 2b(i) and (ii)



Key:

contours
lines
(height in
metres)

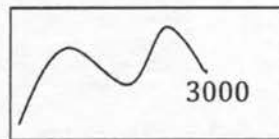
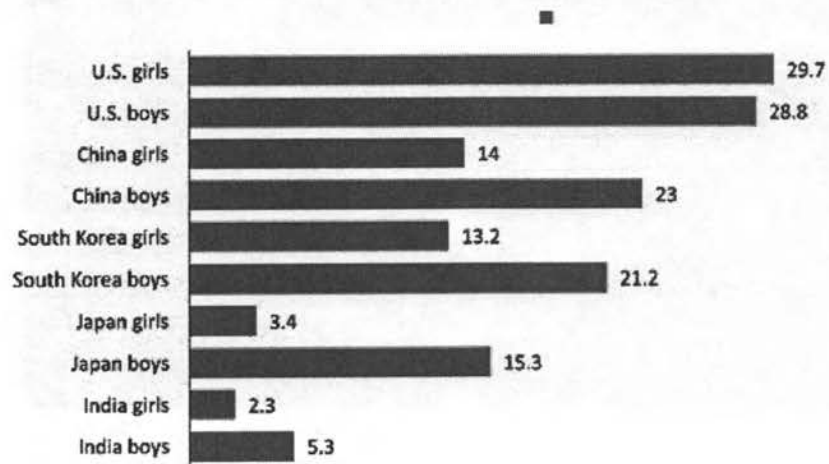


Fig. 6 for Question 3a

Childhood Obesity Rates

Percentage of overweight and obese children under the age of 20 in select countries



Source: Select countries; The Lancet, University of Washington | WSJ.com

Photograph A for Question 3b

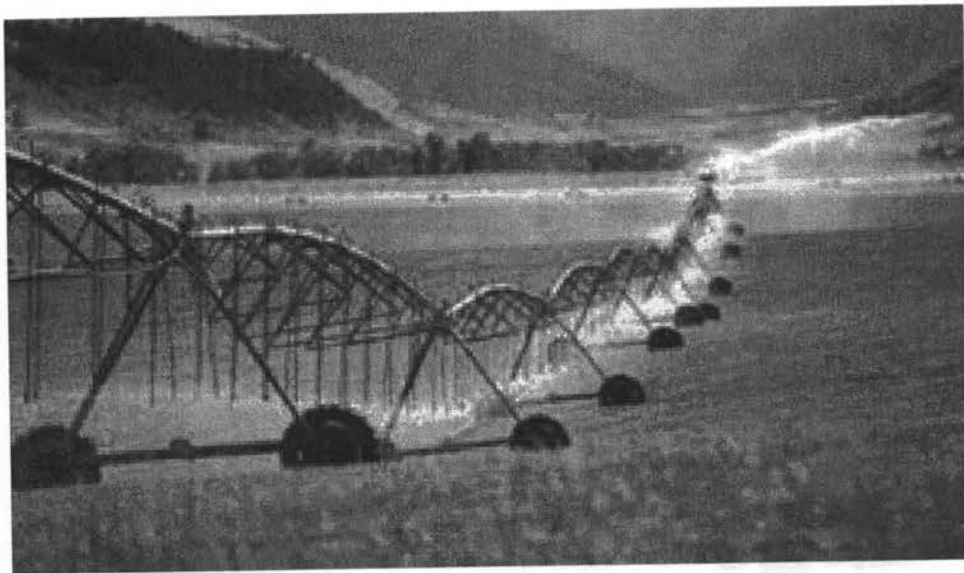


Fig. 7 for Question 3d

Are GMOs SAFE? **YES.** The National Academies of Sciences, Engineering, and Medicine 2016 report reaffirms

Over **900** studies and publications were examined

20+ scientists, researchers and agricultural and industry experts over a 2 year period reviewed animal studies, allergenicity testing, North American and European health data, and more

SAFE.

No substantiated evidence of a difference in risks to human health between current commercially available genetically engineered [GMO] crops and conventionally bred crops.

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Based on **20+** years of data since GMO crops were introduced

Full report available at <http://nas-sites.org/ge-crops/>

gmo answers

Fig. 8 for Question 4a(i) (ii)

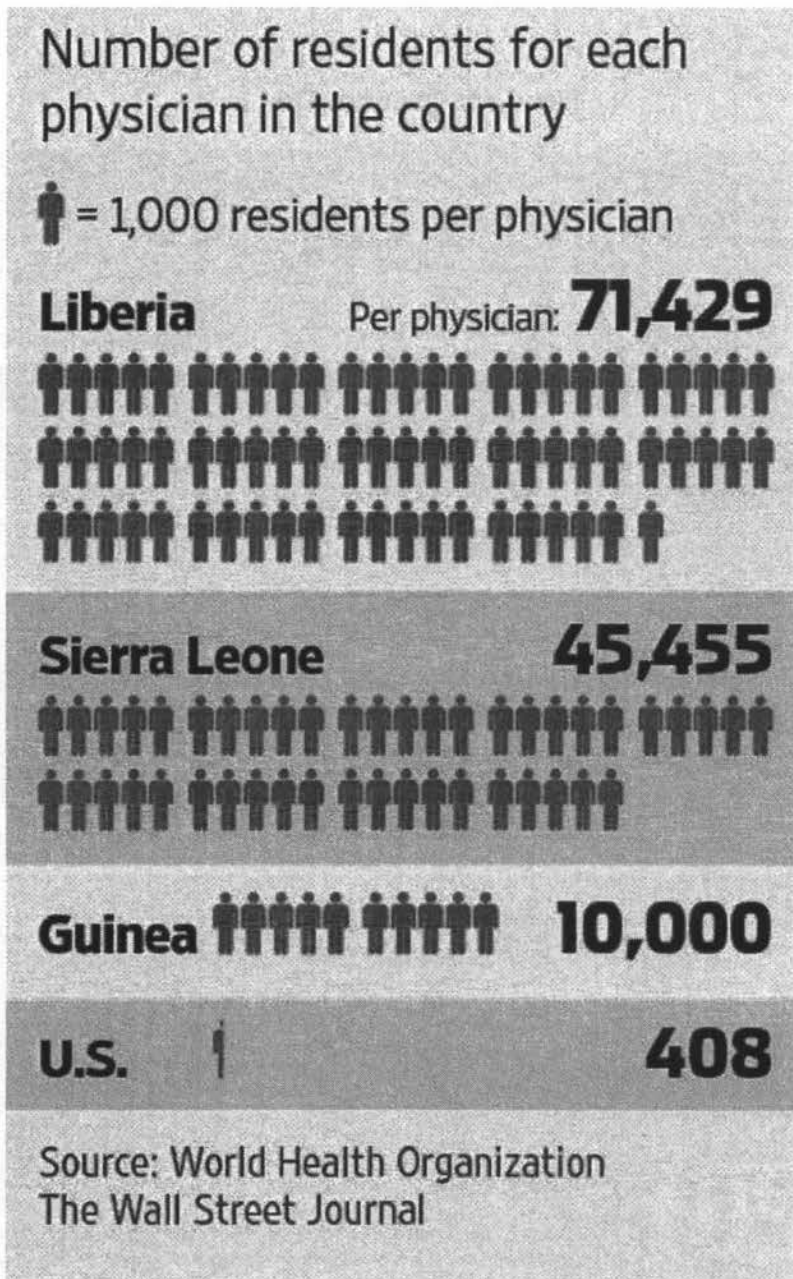


Fig. 9 for Question 4c

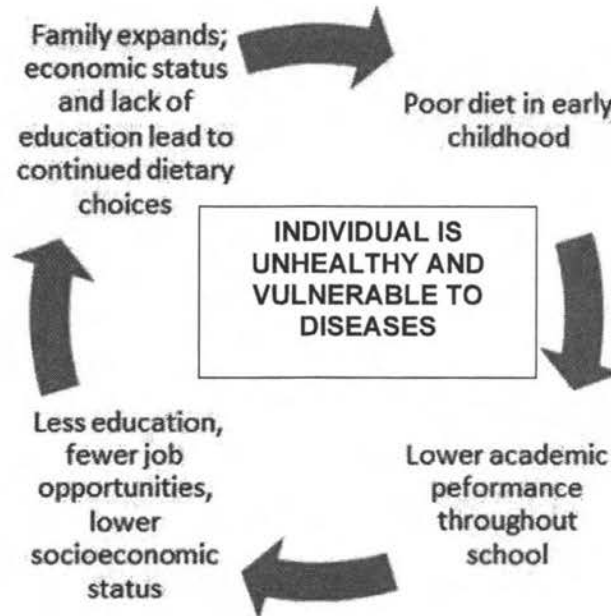
**Copyright Acknowledgments:**

Fig 1 for Question 1(a): <https://oceanexplorer.noaa.gov/explorations/14fire/background/seamounts/media/xsect.html>

Fig 2 for Question 1(c): <http://www.jma.go.jp/jma/en/Activities/image/eew1.png>

Fig.3 for Question 1(d): UCLES 2012

Fig 4 for Question 2(a) : <http://www.raingutterssolution.com/blog/why-you-should-consider-hurricane-shutters-for-next-hurricane-season/>

Fig 5 for Question 2b(i) (ii): <https://pubs.usgs.gov/of/1995/0271/body>.

Fig 6 for Question 3(a): <https://blogs.wsj.com/chinarealtime/2014/05/29/as-obesity-rises-chinese-kids-are-almost-as-fat-as-americans/>

Photograph A for Question 3(c): <https://www.irrigationnorthland.co.nz/services/irrigation/>

Fig 7. for Question 3(d): [https:// nas-sites.org](https://nas-sites.org)

Fig.8 for Question 4(ai) (aii): World Health Organisation via The Wall Street Journal

Fig. 9 for Question 4 (c): <http://www.todaysdietitian.com/newarchives/100614p64.shtml>



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Section A

This question is compulsory.

<p>1</p>	<p>ai)</p>	<p>A group of managers from Berrygood Hotel Group embarked on a coastal investigation at North Bay Waterfront in Ontario, Canada to find out the suitability of building coastal resorts there.</p> <p>Fig. 1 (Insert) shows the aerial view of North Bay Waterfront in Ontario, Canada.</p> <p>They crafted 3 possible hypotheses:</p> <ol style="list-style-type: none"> 1. 'Sediment size becomes smaller in the direction of longshore drift.' 2. 'Sediment size changes in the direction of longshore drift.' 3. 'Sediment sizes becomes smaller when there is longshore drift.' <p>Select the best hypothesis for them to use and justify your answer.</p> <p>Hypothesis 3 is the best as it has an <u>independent and dependent variable</u> and a <u>clear relationship between the variables</u>.</p>	<p>[2]</p>
	<p>ii)</p>	<p>Explain how they can determine the direction of longshore drift along the coast.</p> <ul style="list-style-type: none"> • Use a wind vane to determine prevailing wind direction • Lay a measuring tape along a parallel transect along the coast and mark the start point with a ranging pole • Throw a biodegradable orange into the sea at the start point and time with a stopwatch • After 10 minutes, observe which direction the orange floats to determine the direction of LSD. 	<p>[3]</p>
	<p>bi)</p>	<p>The managers decided to collect sediments at Site A and B (Fig. 1, Insert) to compare the size of the sediment at the two sites.</p> <p>Describe how they can conduct fieldwork to collect sediments at the two sites.</p> <ul style="list-style-type: none"> • Lay a measuring tape along a perpendicular transect • Using ranging poles to mark out points at regular intervals to take measurements from • At each point, lay down a quadrat. Using a number generator, use random sampling to select the squares to take sediments from 	<p>[5]</p>

	<ul style="list-style-type: none"> From each square, use a spoon to scoop the sediments Place each scoop in a labelled Ziplock bag. 																			
ii)	<p>The managers of Berrygood Hotel Group sieved 100g of sample from each point and presented their results in the table below.</p> <table border="1"> <thead> <tr> <th>Size of Sediment</th> <th>Site A</th> <th>Site B</th> </tr> </thead> <tbody> <tr> <td>4mm</td> <td>7g</td> <td>0g</td> </tr> <tr> <td>3mm</td> <td>43g</td> <td>1g</td> </tr> <tr> <td>1mm</td> <td>28g</td> <td>7g</td> </tr> <tr> <td>0.5mm</td> <td>14g</td> <td>14g</td> </tr> <tr> <td>0.1mm</td> <td>8g</td> <td>78g</td> </tr> </tbody> </table> <p style="text-align: center;">Table 2</p> <p>Using Table 2 above, as well as information from Fig. 1 (Insert), discuss the suitability of developing beach resorts at each site. [3]</p> <p>Site A is not suitable as a beach resort whilst Site B is suitable.</p> <p>Site A has a majority % of coarser sediments with 50% of sediment being 3mm and above whilst Site B has majority % of finer sediment with 92% of sediment being under 0.5mm. Finer sediment will be more suitable for recreational activities such as picnics.</p> <p>Site A is also much narrower in width than Site B as seen in Fig. 1, and thus there is less space on the beach to carry out recreational activities, which makes it less suitable for a beach resort. [1]</p>	Size of Sediment	Site A	Site B	4mm	7g	0g	3mm	43g	1g	1mm	28g	7g	0.5mm	14g	14g	0.1mm	8g	78g	
Size of Sediment	Site A	Site B																		
4mm	7g	0g																		
3mm	43g	1g																		
1mm	28g	7g																		
0.5mm	14g	14g																		
0.1mm	8g	78g																		
c)	<p>The managers decided to conduct a questionnaire survey of the local residents living there (Fig 2, Insert) to find out potential challenges they may face in developing the site.</p> <p>Explain how systematic sampling can be used to select 100 respondents to answer the questionnaire survey. [2]</p> <p>The students can situate themselves along the beach (must state a suitable location) [1] and interview every 10th (state any regular interval) local who passes by that point. [1]</p>																			
di)	<p>The results of the questionnaire survey are presented in Table 3 (Insert).</p> <p>With reference to Table 3, represent the responses for Question 5 by completing the pie chart in Insert 2. [3]</p> <p>1m for suitable title 1m for accurate pie chart percentage 1m for suitable label or legend</p>																			

ii)	<p>With reference to Table 3, comment on the feasibility of building budget youth hostels and live concert venues along the coast based on the demographic of residents at North Bay Waterfront.</p> <p>Building youth hostels and live concert venues is not very feasible [1] due to high chances of conflict of interests and values with the locals [1] - Reserve 2 marks.</p> <p><i>Any 3 marks for use of data to substantiate with explanation:</i></p> <p>As the local are mostly elderly (55% above 56 years old), who have lived there for a large portion of their lives (78% more than 15 years), highly likely to retire there [1], which may not make the area suitable for mass youth tourism which will disrupt the environment they are used to and may cause the elderly distress</p> <p>Also the locals there are of generally higher income levels (95% above \$100,000 a year) and enjoy activities such as water sports, yachting [1] which may not be the same activities that youth tourists on a budget may enjoy or be able to afford.</p> <p>Locals are most worried about overcrowding and pollution (60%), which may be likely if live concert venues are built and large volumes of budget tourists visit the area.</p> <p>High noise levels are a significant concern (12%) , which will surely occur if such concert venues are built.</p> <p>The building of hostels and venues may cause sedimentation in the sea, which may destroy natural coastal features, which is a big concern amongst the locals (21%) . [1]</p>	[5]
iii)	<p>Suggest how the managers could improve on the reliability of the questionnaire survey in Fig. 2 (Insert), as well as their sampling method.</p> <p>They should include open-ended questions rather than only close ended questions in order to allow the respondents to put in their own opinions rather than be confined by fixed choices which may not truly represent their opinion [1].</p> <p>They should conduct stratified sampling in order to ensure that they do not miss on collecting data from various groups of locals. This will ensure greater representation of all groups. [1]</p>	[2]

Section B

Answer ONE Question from this section.

2	a)	<p>Fig. 4 (Insert) shows a news clipping about the USA- North Korea Political Summit held on 12 June 2018 in Singapore.</p> <p>With reference to Fig. 4, explain how this event may boost tourism numbers in Singapore.</p> <ul style="list-style-type: none"> • Due to high media coverage from more than 3000 journalists about the country, it serves to advertise Singapore as an ideal and secure tourist destination with excellent facilities and attractions [1] • Advertising about Singapore as a suitable venue for MICE tourism with excellent facilities for meetings and conventions. [1] • Serves to pique the interest of those who are interested in niche tourism and have a great interest in revisiting the sites that the two world leaders visited as well. • During the event itself, tourism numbers would surge due to the high number of media, diplomats and interested onlookers who snapped up hotel rooms in order to attend or cover the summit. 	[4]
	b)	<p>Fig. 5 (Insert) shows a tourist participating in a cultural lesson on the significance of traditional dress of the Long neck Karen Tribe in North Thailand. Fig. 6 (Insert) shows a tourist snapping photographs of a woman from the same tribe.</p> <p>With reference to Fig. 5 and 6, evaluate the impact of tourism on the Long neck Karen Tribe.</p> <p>Cap at 2m if no reference to figure. Accept up to 2m of impacts not related to figure 5 and 6.</p> <ul style="list-style-type: none"> • Exchange of values when the Karen Tribe are able to educate tourists and help them understand the value and uniqueness of their culture, sense of pride about their own cultural traditions • Entry fee and tour guide fee paid by tourists can go towards supporting the local economy and give them a sustainable means of livelihood • Fees paid by tourists can also go towards cultural preservation, and keeping old traditions alive • Cultural exploitation and degradation if not well managed, and locals are treated as exhibits, culture for sale • Dilution of culture when local traditions are watered down and modified for the enjoyment of tourists rather than preserved 	[5]

		<p>in the way they traditionally are.</p> <ul style="list-style-type: none"> • Due to demand from tourists to see locals in this traditional lifestyle, they may intentionally be exploited and kept in poverty to continue fuelling this supply for tourists. 	
	c)	<p>Discuss the factors that could give rise to large destructive waves along a coastline.</p> <ul style="list-style-type: none"> • Waves are generated by wind blowing across the sea, larger the wind energy (higher speed), the larger the waves. • Long fetch which means that waves travel over long distances and can gain more speed which may lead to larger waves • Uneven coastlines may give rise to large destructive waves at the coastline, when the waves converge at headlands resulting in large destructive breakers • Extreme weather events and storm events such as cyclones and tsunami events may cause storm surges that result in large destructive waves. 	[4]
	d)	<p>Fig. 7 (Insert) shows a map of the Japanese Shinkansen (Bullet Train). Fig. 8 (Insert) shows the interior of the Maharaja Express Luxury Train in India.</p> <p>With reference to Fig. 7 and 8, compare the Shinkansen and the Maharaja Express in terms of their appeal to tourists and the profile of tourist that they would appeal to.</p> <p>The Shinkansen would appeal to tourists who value <u>convenience and efficiency</u> as it connects most of the major cities travelling at very high speeds of 320km/h whilst the maharaja express would appeal to tourists who <u>have time</u> to enjoy the sights and sounds of the journey as it passes over a week. [1]</p> <p>The Shinkansen is the <u>quickest mode of transport</u> to various cities in Japan, whilst the maharaja express would appeal to tourists who are looking for <u>an experience on board the train, the luxury train replicating a royal lifestyle.</u> [1]</p> <p>Tourists of <u>most demographics and purpose of travel</u> can use the Shinkansen, as it is a relatively cheap and reliable form of transportation, whilst the Maharaja express would cater to <u>high-income tourists</u> as the cost of a trip starts at a high price of \$8000. [1]</p> <p>The Maharaja express is also <u>a form of niche tourism for travellers who have an interest in experiencing the Maharajah lifestyle and Indian hospitality,</u> whilst the Shinkansen is <u>not a destination in itself.</u> [1]</p>	[4]

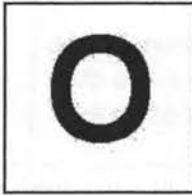
e)	<p>'Developing tourism along the coast does the coastal environment more harm than good.'</p> <p>With reference to examples, to what extent do you agree with the statement?</p> <p>Possible Points:</p> <p>-ve:</p> <ul style="list-style-type: none">• High levels of sedimentation which may destroy coral ecosystems• Deforestation of mangroves to make way for coastal development• Pollution of water through untreated sewage disposal, littering etc• Overcrowding on the beach• Trampling on corals• Boating, yachting, anchor damage on corals <p>+ve:</p> <ul style="list-style-type: none">• More incentive to carry out coastal protection to protect the beach from erosion• Ability to carry out high cost soft engineering such as planting mangroves and beach nourishment to protect aesthetics of the coast• Funds by tourists to conserve the environment and protect coral and mangrove ecosystems and preserve biodiversity <p>Evaluation;</p> <ul style="list-style-type: none">• Level of positive and negative impact depends on management of coastal development• Need to ensure that coastal development is sustainable and benefits the locals and environment through government enforcement and NGO advisories.	[8]
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3	a)	<p>Fig. 9 (Insert) is a graph that charts the presence of mangrove forests along the coast and its effect on wave height. Fig. 10 (Insert) shows two coastal areas, one protected by mangrove forest (Coast M), and one left exposed (Coast N).</p> <p>With reference to Fig. 9 and 10, compare and account for the level of impacts of a tsunami on Coast M versus Coast N.</p> <ul style="list-style-type: none"> • The impact of the tsunami on exposed coast N will be much higher than that on protected coast M • Mangroves have dense root systems which can hold soil together • And they are able to absorb and dissipate wave energy • Which reduces wave heights from the tsunami as seen in Fig 9, where exposed coasts experienced 15 times higher wave heights than protected coasts. • Which prevent inland flooding from occurring at coast M as much as on coast N, and reduces force of the tsunami wave 	[5]
	b)	<p>Fig. 11 (Insert) shows modified tetrapods also known as TetraPOT.</p> <p>With reference to Fig. 11, discuss the benefits of this tetrapod design in protecting the coast.</p> <ul style="list-style-type: none"> • This tetrapod features an interlocking design which dissipates the force of incoming waves • Reducing erosion of the tetrapod by allowing water to flow around rather than against them. • The modified design had mangroves grown within the tetrapod, and the roots can also help to hold soil together to prevent erosion • It also increases the natural look of the coastal protection measure to increase its aesthetic appeal • Also provides habitats to support the biodiversity such as crabs and herons 	[4]
	c)	<p>Evaluate the impacts of fisheries and aquaculture in South East Asia.</p> <p>+ve:</p> <ul style="list-style-type: none"> • Brought about economic benefits to the locals living there who make their livelihood and income from fishing and aquaculture, esp locals in SEA LDCs who may not have other viable sources of income <p>-ve: Ca mau, Vietnam/ Trang Province, Thailand</p> <ul style="list-style-type: none"> • Have to clear mangrove forests to make way for aquaculture prawn ponds which may increase threat of the coast to tsunamis • Prawn effluent and feed, as well as chemicals which may lead to eutrophication and may severely degrade the water 	[4]

	<p>quality such that it is no longer able to support marine life</p> <ul style="list-style-type: none"> • Overfishing and by-catch have significant impacts on biodiversity levels and marine life. • Sediments and waste may settle on the seabed, suffocating corals and organisms that live beneath fishery nets. <p>Accept as long as at least 1 positive, 1 negative impact. Cap at 2m without any named example from South East Asia.</p>	
d)	<p>Fig. 12 (Insert) shows how the beach profile of a coastline may change after seawalls are built along the shore.</p> <p>With the use of Fig. 12, explain how coastal processes and the presence of the seawall have modified the coastline.</p> <ul style="list-style-type: none"> • Erosive processes such as Hydraulic action and abrasion act on the coast. Hydraulic action is when air becomes trapped in joints and cracks on a cliff face. When a wave breaks, the trapped air is compressed which weakens the cliff and causes erosion. • Abrasion is when rock and sand particles are hurled at the rock by waves to scrape away rock fragments on the cliff • The presence of the seawall prevents erosion from the section of the beach behind the seawall. • However, the presence of the seawall concentrates energy on it to create a stronger backwash, increasing erosion in front of the seawall causing loss of beach in front of the seawall that declines in width overtime. 	[4]
e)	<p>'Coastal degradation brings about mainly economic consequences.'</p> <p>With the use of examples, to what extent do you agree with this statement?</p> <p>Economic:</p> <ul style="list-style-type: none"> • Loss of tourism opportunities. • Loss of coastal environment which supports biodiversity, hence lower fish and seafood catch <p>Environmental:</p> <ul style="list-style-type: none"> • Destruction of coastal environment reduces habitat and breeding ground for marine life, reducing biodiversity <p>Social</p> <ul style="list-style-type: none"> • Loss of traditional livelihoods which depend on fishing and the coastal environment <p>Evaluation:</p> <ul style="list-style-type: none"> • The consequences are all interlinked as the health of the 	[8]

		<p>environment is necessary for any economic benefit to arise from it</p> <ul style="list-style-type: none">• Environmental consequences will be of larger consequence in the long run if they are irreversible; will threaten more than just the economy, may threaten our food and water sources	
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END OF PAPER



ANDERSON SECONDARY SCHOOL
Preliminary Examination 2018
Secondary Four Express



CANDIDATE NAME:

CLASS:

INDEX NUMBER:

GEOGRAPHY**2236/02**

11 September 2018

1 hour 30 minutes

Additional Materials: Insert

1045-1215h

Writing Paper

READ THESE INSTRUCTIONS FIRST

Write your name, class and index number on all the work you hand in.
 Write in dark blue or black pen on both sides of the paper.
 Do not use staples, paper clips, highlighters, glue or correction fluid/tape.

At the end of the examination, fasten all your work securely together.
 The number of marks is given in brackets [] at the end of each question or part question.
 Write ALL answers on your own writing paper.

Answer either **Question 1 OR Question 2** from Section A.

Answer either **Question 3 OR Question 4** from Section B.

Section A	25
Section B	25
Total Marks	50

Section A

- 1 a) Study to Fig. 1 (Insert), which shows the formation of the Marianas volcanic islands arc and oceanic trench in the Pacific Ocean.

With reference to Fig. 1, and the use of the slab pull theory, account for the formation of the Marianas islands arc and oceanic trench. [5]

- **Slab pull** occurs when an oceanic plate subducts into the underlying mantle. (1m)
- As the **oceanic plate is denser** than the hotter mantle beneath it, this contrast in density causes the plate **to sink into the mantle**. (1m)
- The process of a tectonic plate descending into the mantle is termed **subduction**, at which an oceanic trench is created. (1m)
- As seen in Fig. 1, the Marianas trench is found at the are where subduction occurs **between 2 oceanic plate**. (1m)
- The oceanic plate that doesnt not subduct gets compressed and fault lines allow rising **magma to form** a chain of volcanic islands as seen in Fig. 1. (1m)

Reserve 1 m if no reference is made to Fig.1.

- b) Explain the formation of storm surges during a tropical cyclone. [4]

A **storm surge** is a rise in sea level that occurs **during tropical cyclones** forming over warm tropical oceans.

It is an abnormal rise of water over predicted tide range generated by the strong winds associated with tropical cyclones.

Tropical cyclones are intense **storms** that produce strong winds, the high wind speed and low-pressure zone will push the water into shore, which can lead to flooding along coastal areas.

Reserve 1 m if high wind speed and low-pressure zone is not mentioned

c)

Study Fig. 2 (Insert), which shows an early warning system for earthquakes used by the Japanese Meteorological Agency. There are more than 1000 early warning sensors which communicate by radio waves to earthquake early warning centres located in major cities such as Tokyo. The sensors cover almost all of the country.

Use Fig. 2 and the information above to evaluate the effectiveness of the early warning system used in Japan to manage earthquakes.

[4]

- The Earthquake Early Warning monitors earth movements with the use of extensively spread out sensors and is able to transmit information aimed at mitigating earthquake-related damage.
- It can help to prevent injuries and death by promptly slowing down trains, controlling elevators to avoid danger and enabling people to quickly protect themselves in various environments such as factories, offices, houses and near cliffs or coastal areas. However despite its benefits, it has limitations:
- **Timing**
The window of time from the announcement of an Earthquake Early Warning until the arrival of the main tremors is very short as seen in Fig.2, i.e. a matter of seconds (or between several seconds and a few tens of seconds) In areas that are close to the focus of the earthquake, the warning may not be transmitted before strong tremors hit
- **False alarms**
When using data from only one seismograph, false Earthquake Early Warnings may occur as a result of noise from accidents, lightning or device failure

- d) Study Fig.3 (Insert), which describes the climate conditions of an Island located near the equator.

Use the information in Fig.3, name and account for the climate type of the Island.

[4]

- The island has a tropical equatorial climate.
- Low latitude location near the equator allows for high amount of sunlight throughout the day and high temperature as seen in Fig. 3.
- High rainfall could be attributed to the high Relative humidity as it is an island.
- In Fig.3, convectional rainfall seems frequent and common, and this is another trait of a warm and wet tropical equatorial climate.

- e) 'The benefits of living near volcanoes are much lesser than perceived.'

To what extent do you agree with this statement? Use examples to support your answer

[8]

Essay should have a clear stand and cover at least 3 benefits and 3 risks of living near volcanoes.

"I agree/disagree that the benefits of living near volcanoes are much lesser than perceived ."

Benefits of living near volcanoes are mainly economic and are long term hence benefits are not lesser than perceived. It is beneficial:

Fertile volcanic soil

- Rich in minerals after volcanic rock has been weathered and broken down for thousands of years. Therefore favourable to plant growth
- *Agriculture as source of income/ without use of fertilizer, lower cost therefore can get more profit*
- Example: Bali, Indonesia can support tea, coffee and rice for many decades and still remain fertile

Precious stones and minerals, building materials

- After millions of years erosion of upper layers of volcanic rocks, such as diamonds from pressurized carbon cooled in magma pipes
- *Diamonds can be sold at high cost as source of income*
- Example: Kimberly, South Africa, is the world's richest source of diamonds

- Production of other daily items *for sale as source of income or provide resources found locally*.
- Example: Sulphur from active volcano in East Java, Indonesia, used to make matches and fertilizers

Tourism

- Activities for tourists, such as hiking and camping to enjoy scenery
- Rich in history for tourists to learn.
- *Locals live near to provide services for the tourists such as tour guides or sale of souvenirs*
- Example: Archaeology of preserved Pompeii, Italy buried under ash due to eruption of Mount Vesuvius in 79CE attract 3 million visitors yearly.

Risks are often ignored as volcanoes can lay dormant for a long time and people might get complacent and forget the risks.

Hazards include:

- Destruction by volcanic materials will cancel out any benefits of living near volcanoes.
- With volcanic bombs being pelted from a violent eruption or the fast flowing lava of a shield volcano such as Kilauea of Hawaii, many homes and infrastructure can be easily destroyed and people need to move away from the area, sometimes permanently. For example, Kilauea which has been quietly erupting since 1982 has recently in May 2018, been erupting more violently spewing out huge amount of lava and ash, destroying properties and farmland.
- Landslides and lahars can occur as the slopes of the volcano can slip and collapse during an eruption. This is seen in the eruption of the Nevado Del Ruiz in the Andes mountain 1981, where an entire villages were buried and many lives were lost.
- Pollution is seen when dust and ash is ejected during a violent eruption can cause traffic disruption and major economic losses for aviation, agriculture and other major commercial sector. For example, the Icelandic volcano that erupted in 2010 caused air traffic disruption costing the airline industry 1.8 billion, with nothing much to be done except to wait out for the eruption.

Marks	Descriptors
1-3m	<ul style="list-style-type: none"> • Generalized answers or with minimal detail on benefits and risks • A basic answer with little development on the details of benefits and risks • Reasoning rather weak and expression may be unclear in organisation of answers. • Only addresses benefits of living near volcanoes with no mentioned of any risks. • No attempt to address the accuracy of the statement. • No named example is given in the entire essay.
4-6m	<ul style="list-style-type: none"> • Answers contain some appropriate detail. Simple details of impacts, able to distinguish between risks and benefits of living near volcanoes. • BUT content lack balance and some relevant detail, i.e. simple description

	<ul style="list-style-type: none">• Support is patchy so argument is not fully substantiated.• At least 1 named example is given but is not fully developed to support points.
7-8m	<ul style="list-style-type: none">• Answers are comprehensive and supported by sound knowledge.• Specific details and elaboration of at least three reasons for each corresponding type of risk and benefit.• Detailed examples is given to highlight risks or benefit of living near volcanoes.• Assessment of the harm and good of living near volcanoes.

- 2 a) Study Fig. 4 (Insert), which shows information on preparing for a tropical cyclone in the USA.

Evaluate how infrastructure management might reduce the impacts of tropical cyclones. [5]

- As seen in Fig. 4, shutters on windows can help to protect against strong winds from damaging glass window and prevent flooding during storm surges.
- Levees built near low lying areas as seen in Fig. 4 may also be useful in protecting communities and homes during storm surges and flooding brought by tropical cyclones.
- Preparedness measures in terms of infrastructure management can help to reduce vulnerabilities to strong winds, torrential rainfall, storm surge and flooding during tropical cyclones.
- It can help to prevent objects from falling and being blown away during a tropical cyclone, thus reducing injuries and damages to properties.
- However, infrastructure management is expensive and richer nations are able to plan ahead and afford these mitigation measures.

reserve 1 mark if no reference to Fig.4

- b) Study Fig. 5 (Insert), which shows a volcanic island in the Pacific Ocean.

- (i) Use the information in Fig. 5 to describe how temperature at X will be different from Y [4]

- Temperature at X will be lower as compared to Y.
- The climate on mountains get progressively colder with increased altitude.
- This happens because as altitude increases, **air becomes thinner** and is **less able to absorb and retain heat**. The cooler the temperature the less evaporation there is, meaning that there is **more moisture in the air**.
- Air pressure decreases with altitude. As a result of the reduced air pressure, rising air expands and cools.

(ii) Account for the lack of rainfall at the dry plains at location Z. [3]

- Z is a rain shadow zone as it is a region having little rainfall because it is sheltered from prevailing rain-bearing winds from the Pacific Ocean that is coming from the south west
- The tall mountains facing the ocean blocks the winds from carrying moisture to the area.
- **The area experiences orographic precipitation**, which are **rain, snow, or other precipitation** produced when moist air is lifted as it moves over a mountain range.
- As the air rises and cools, **orographic** clouds form and serve as the source of the **precipitation**, most of which falls upwind of the mountain ridge as seen in Fig. 5

c) Compare the formation of local winds and regional monsoon winds. [5]

- Unlike regional winds, local winds occur at a **smaller scale**.
- **Both are similar in terms of movement from high pressure to low pressure zone.**
- Local winds are breezes that occur because water and land absorb and lose heat from the sun at different rates.
- During the day, the land heats much more quickly than the sea, causing air over land to rise.
- As the warm air rises, cool air from the sea is blown in underneath, producing a sea breeze blowing inland.
- The situation is reversed at night, with the cool air over land drawn in under the warm air over the sea, producing a generally weaker land breeze.
- On the other hand, regional monsoon winds are large-scale, seasonally changing wind circulations that form due to the temperature differences between land and ocean, like a giant sea breeze.
- Monsoons dominate the climate in the tropical regions of Asia. They are known locally as the Northeast Monsoon and the Southwest Monsoon, and are responsible for much of the variation in rainfall over the regions throughout the year
- The Northeast Monsoon develops during the northern hemisphere winter between December and March, when the land over much of continental Asia is colder than the ocean. This causes sinking cold air over land to blow towards the ocean, replacing the void left by the rising warm air over the ocean.
- The reverse is true of the Southwest monsoon from June to Sept.

- Monsoon winds are influenced by the Coriolis effect such that surface winds are deflected to the right in the northern hemisphere to become northeasterly winds during the Northeast Monsoon and southwestern winds during the Southwest Monsoon.

d) 'Impacts of climate change are impossible to manage.'

To what extent do you agree with this statement? Use examples to support your answer. [8]

Answers should have a clear stand:

Impacts of climate change should be discussed: rising sea level, global warming and unpredictable/extreme weather events.
Crops disruption and food supplies being affected.

eg. Singapore has embarked on measures like setting a minimum height for land reclamation and has diversified food supplies.

International responses like the Kyoto Protocol and national responses such as the Singapore Green Plan may be discussed but must be linked to how it is used to reduce Greenhouse gases emission.

EG: The **Kyoto Protocol [P]** aims to **reduce the levels of greenhouse gases in the atmosphere by having countries reduce their combined greenhouse gas emissions by at least 5% below their 1990 levels [E]**. Many countries like **Finland and Greece have met or exceeded these targets [Eg]**. However, the Protocol has **not been fully successful as some countries like Spain and Denmark did not achieve their targets and international strategies seem useless**.

It is true that impacts of climate change are challenging, and richer countries would be better to cope with it using technology and engineering techniques to mitigate its impacts.

Marks	Descriptors
1-3m	<ul style="list-style-type: none"> • Answers are generalised or with minimal support if any given at all. • Reasoning of why impacts of climate change can or cannot be managed is rather weak and expression may be unclear as to how it can or cannot be managed. • A basic answer that has little development. • Answers lack examples or other evidence or, it is sketchy that it adds little support to the answer.

4-6m	<ul style="list-style-type: none"> Answers contain some appropriate detail. Simple details of impacts, able to explain at least one international and national strategy and how it is successful. BUT content lack balance and some relevant detail, i.e. simple description Support is patchy so argument is not fully substantiated. At least 1 named example is given but is not fully developed to support points.
7-8m	<p>Level 3 (7-8 marks)</p> <ul style="list-style-type: none"> Answers are comprehensive and supported by sound knowledge. Both international and national strategies with another alternative discussed are considered and well-supported. Reasoning is clear and logical with good expression of language. Examples or other evidence to support answers are extensive. <p>For L3 (8 marks), conclusion is well-explained; candidates are able to weigh how richer nations are able to deal with climate change impacts more effectively, though local communities can be proactive in replanting forests like mangroves to protect coastlines.</p>

Section B

Answer either Question 3 or Question 4

- 3 a)** Study Fig. 6 (Insert), which shows the percentage of childhood obesity in 5 different countries.

Compare the percentages of childhood obesity by gender between the countries. [5]

Answers must show comparative words, such as

- The Highest in the USA with 29.7 for girls and 28.8 percent for boys.
- Compared to the rest, India has the lowest rate of obesity, with with 2.3 for girls and 5.5 for boys.
- China is in the middle range, but fast catching up the USA.
- Answers must include data from all 5 countries and comparing percentage.

- b)** Study Photograph A (Insert), which shows a type of irrigation system on a farm in New Zealand.

Describe the advantages of such an irrigation system and its impact on the environment. [4]

- Ensure enough water for crop production
- Water coverage under the centre pivot is very uniform.
- Low maintenance and suitable for flat terrain.

- May cause soil compaction as it is a heavy equipment.
- Water logging and soil salinisation as water could be drawn from the ground for irrigation.

c) Discuss how poor transport networks and storage facilities can affect food security in a region. [4]

- Food security refers to having reliable access to a sufficient quantity of affordable, nutritious food
- Poor transport network will hinder the transport of crops for sale and fresh produce or food will not be able to reach communities.
- For example, many mountainous regions in Nepal often lack access to fresh produce due to poor transport network
- Storage facilities help to ensure that food last longer and help to reduce waste
- In Singapore, food that is imported and stored in refrigerated warehouses ensure good food security.
- Reserved one mark if no regions are provided.

d) Fig. 7 (Insert) shows a report on the safety of GM crops by scientists.

With reference to Fig.7 and the use of examples, discuss why GM crops remain unpopular with consumers. [4]

- Although it has been deemed safe by scientists as seen in Fig.7, people are still unsure of the effects of GM crops.
- Speculation that it may cause allergies, ill health is widely reported in the media.
- People are uncomfortable with tweaking with the nature and from what they read in the media.
- Owned by large agribusiness such as Monsanto, which is seen is profit driven over the concerns of health of consumers.
- Impact on biodiversity is of concerned to many consumers who are not keen to support the consumption of such crops. e.g. the monarch butterflies.

- e) 'The effect of overconsumption of food has a greater impact on the economy of a country than on the health of individuals.'

To what extent do you agree with the statement? Use examples to support your answers.

[8]

Answers should have a clear stand:

I agree/disagree with the statement to a large/small extent...

Answers should include:

- Effect of overconsumption must be discussed clearly: it could be a population that is overweight and obese due to having too much fats/ rich food.
- This could also manifest in terms of degenerative diseases such as diabetes and heart problems due to excessive consumption of sugar and fats.
- Impacts of overconsumption on individual health -- ill health such as diabetes, coronary diseases.
- Impacts on the economy: rising expenditure on health care, high rate of absenteeism from work, low productivity.

Marks	Descriptors
1-3m	<ul style="list-style-type: none"> • Answers are generalised or with minimal support if any given at all. • Impacts on health and the economy caused by obesity and ill health are vaguely described nor considered • A basic answer that has little development. • Answers lack examples or other evidence or, it is sketchy that it adds little support to the answer.
4-6m	<ul style="list-style-type: none"> • Answers contain some appropriate detail. Simple details of impacts, able to explain at least one impact on health and the economy caused by obesity and ill health are discussed are considered but not well-supported • BUT content lack balance and some relevant detail, i.e. simple description • Support is patchy so argument is not fully substantiated. • At least 1 named example is given but is not fully developed to support points.
7-8m	<p>Level 3 (7-8 marks)</p> <ul style="list-style-type: none"> • Answers are comprehensive and supported by sound knowledge. • Both impacts on health and the economy caused by obesity and ill health are discussed are considered and well-supported. • Reasoning is clear and logical with good expression of language. • Examples or other evidence to support answers are extensive.

For L3. (8 marks), conclusion is well-explained; candidates are able to weigh how impacts of obesity and over consumption of food will affect both the individuals and the economy.

- 4 a) Study Fig. 8 (Insert), which shows data for patients per doctor ratio between countries in West Africa and USA.
- (i) Compare the patients per doctor ratio for the countries shown in Fig. 8. [3]
- USA shows the lowest doctor to patient at 408 patients per doctor.
 - In comparison, Liberia has the highest of patients per doctor at 71429 patients to a doctor.
 - Sierra Leone has the second highest as compared to the rest at 45,455 patients per doctor and Guinea shows a moderate patients per doctor as compared to the rest at 10000 patients per doctor.
- (ii) Suggest the extent to which the countries shown in Fig. 8 are equipped to cope with mosquito borne diseases such as Zika. [5]
- Based on the data shown in Fig. 8, USA should be able to cope with mosquito borne diseases the best as its lower doctor to patients ratio suggest better quality healthy care.
 - This could mean that patients in the USA are able to access testing and seek treatment for screening for infectious diseases earlier, hence reducing fatalities and other impacts on unborn children.
 - Liberia and Sierra Leone would also probably struggle the most to cope with infectious diseases as its high patients to doctor ratio suggests poor access to health care facilities.
 - For an infectious and mosquito disease like Zika, it could struggle to contain the spread and patients could delay treatment as they can't get access to a doctor for treatment.
 - Guinea might be able to cope better as compared to Liberia and Sierra Leone as its patients to doctor ratio is much lesser.
 - Reserve 1 mark if no reference is made to data in Fig.8.

b) Discuss the relationship between sanitation and life expectancy in countries. [5]

- Sanitation refers to the conditions relating to public health, especially the provision of clean drinking water and adequate sewage disposal.
- Life expectancy is a social development indicator that refers to the average period that a person may expect to live in an area.
- There is a clear link between sanitation and life expectancy in many developed countries such as Singapore, USA, the UK as compared to areas without access to sanitation in the slums areas of LDCs such as the Philippines.
- Access to clean drinking water will prevent water borne diseases such as cholera and is essential for good public health. Eg. Yemen had cholera outbreak in 2018 due to improper sewage disposal due to civil war .
- With clean and adequate disposal of sewage and waste, contamination of drinking of water is reduced and this will help improve health and life expectancy.
- Sanitation also affects living environment and with good living environment in place, life expectancy can be greatly extended.
- Reserve 2 marks for definition and reserve 1 mark if no reference made to any specific countries.

c) Study Fig. 9 (Insert), which shows information about poverty, diet and the health of an individual in an impoverished area of a Developed Country (DC).

Using information from Fig.9, discuss the relationship between poverty and health in a DC. [4]

- There is a cyclical relationship between social economic status and health.
- Without enough disposal income, diet is limited for the poor, this could result in malnutrition or nutrient deficiency in the diet of the individual
- For example, many of the poor in inner cities of the USA are obese due to limited diet of fast food which are high in fats and sugar.

- Due to ill health brought about by poor nutrition, many of the children underperform in school, resulting in limited employment opportunities.
- This in turns perpetuate the poverty cycle and poor nutrition leading to poor health for the individual.
- Reserved 1 m for naming a DC.

e) 'Education is the key to manage the outbreak and spread of infectious disease.'

To what extent do you agree with the statement? Use examples to support your answers. [8]

Answers should have a clear stand:

I agree/disagree with the statement to a large/small extent...

Answers should include:

- Education can help to reduce the outbreak and spread of infectious diseases such as Malaria, HIV/AIDS, Dengue etc.
- Explain how population can take preventive measures to prevent outbreak of diseases and spread through the use of clear examples
- But it might be hard to carry out if population is uneducated and literacy rate is low-- other agencies must come in to educate the population through economic incentives and governments play central role in disease management through border controls and laws.

Marks	Descriptors
1-3m	<ul style="list-style-type: none"> • Answers are generalised or with minimal support if any given at all. • A basic answer that has little development on how education can help to prevent infectious diseases. • Answers lack examples or other evidence or, it is sketchy that it adds little support to the answer. • Use of wrong examples such as degenerative diseases to explain answers.
4-6m	<ul style="list-style-type: none"> • Answers contain some appropriate detail. Simple details how education can be used to manage infectious disease and evaluate its limitations., • BUT content lack balance and some relevant detail, i.e. simple description instead of in depth evaluation. • Support is patchy so argument is not fully substantiated. • At least 1 named example is given but is not fully developed to support points.
7-8m	

	<p>Level 3 (7–8 marks)</p> <ul style="list-style-type: none"> • Answers are comprehensive and supported by sound knowledge. • Answers contain detailed explanation of how education can be used to manage infectious disease and evaluate its limitations in relation to another 2 factors such as government and economic reasons. • Reasoning is clear and logical with good expression of language. • Examples or other evidence to support answers are extensive. <p>For L3 (8 marks), conclusion is well-explained; candidates are able to weigh how all stakeholders play equal roles in the manage of infectious diseases.</p>
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TABLE OF SPECIFICATIONS (TOS)

AO1: Knowledge

- Demonstrate relevant factual knowledge – geographical facts, concepts, processes, interactions and trends
- Demonstrate knowledge of relevant fieldwork techniques – identification of geographical question, sequence of fieldwork inquiry, primary and secondary data collection methods

AO2: Critical Understanding and Constructing Explanation

- Select, organise and apply concepts, terms and facts learnt
- Make judgements, recommendations and decisions
- Evaluate data collection methods and suggest improvements

AO3: Interpreting and Evaluating Geographical Data

- Comprehend and extract relevant information from geographical data (numerical, diagrammatic, pictorial and graphical forms)
- Use and apply geographical knowledge and understanding to interpret geographical data – Recognise patterns in geographical data and deduce relationships – Compare and contrast different views – Present geographical data in an appropriate form and in an effective manner – Draw conclusions based on a reasoned consideration of evidence
- Evaluate the validity and limitations of fieldwork evidence and of the conclusions reached

Table of Specification for Geography 2236/2

	Question	Max Mark	AO1+2	AO1+3
Section A:	1 (a)			5
	(b)		4	
	(c)			4
	(d)			4
	(e)		8	
Weather and Climate	Total	25	12	13
Weather and Climate	2 (ai)			5
	(aii)			4
	(b)			3
	(c)		5	
	(d)		8	
	Total	25	13	12
Section B:				

Food	3	(a)			5
		(b)			4
		(c)		4	
		(d)			4
		(e)		8	
		Total		25	12
Health and Disease	4	(ai)			3
		(aii)			5
		(b)		5	
		(c)			4
		(d)		8	
	Total		25	13	12