Geylang Methodist School (Secondary)
Preliminary Examination 2021

HUMANITIES **2272/02**

Paper 2 Geography Elective **4 Express / 5 Normal Academic**

Insert **1 hour 40 minutes**
30 August 2021

READ THESE INSTRUCTIONS

The insert contains Fig. 2, for Question 1, Fig. 3 for Question 2, Fig. 4A and 4B for Question 5.

This document consists of 4 printed pages.

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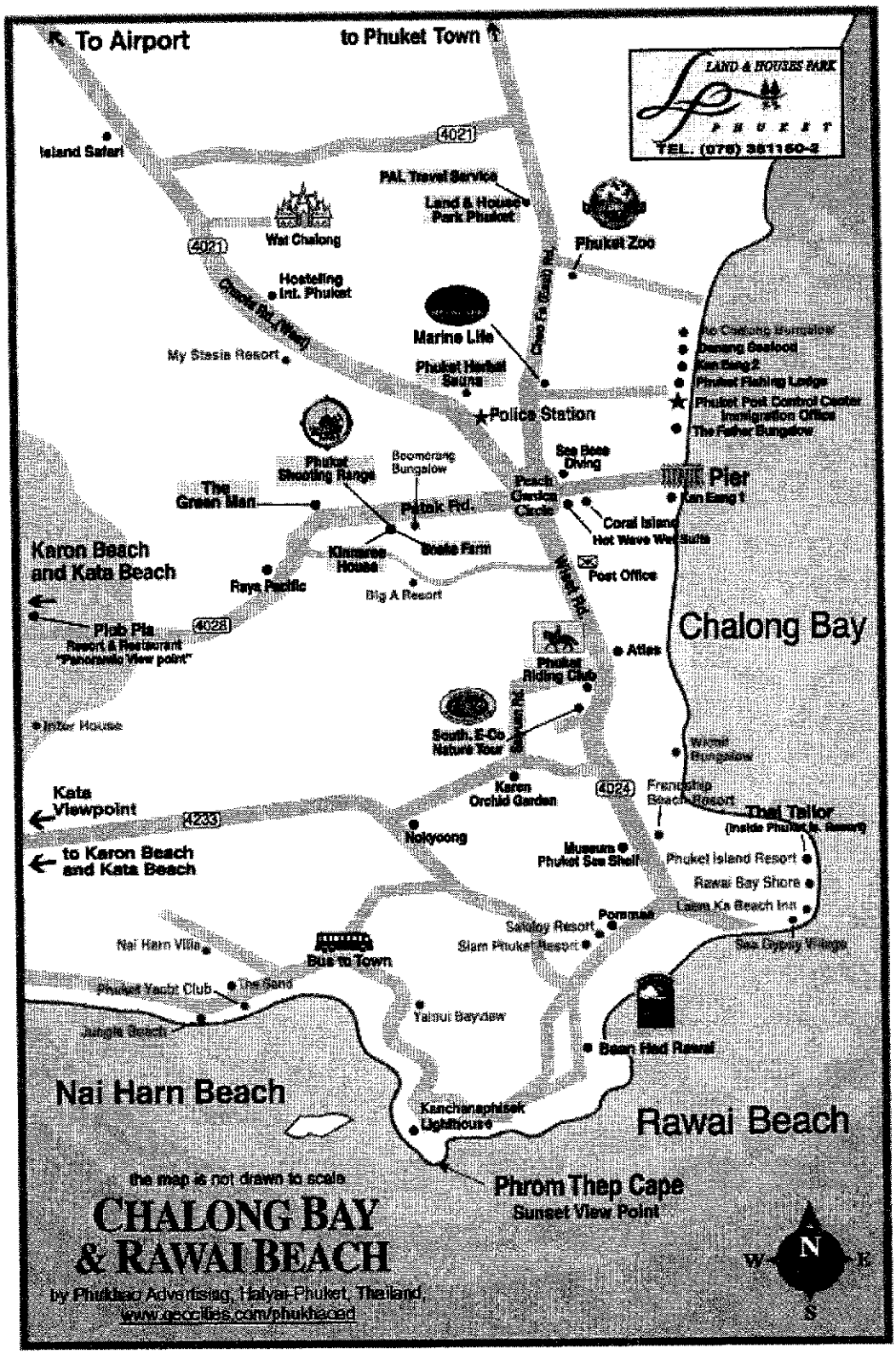
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Insert

Fig. 2 for Question 1

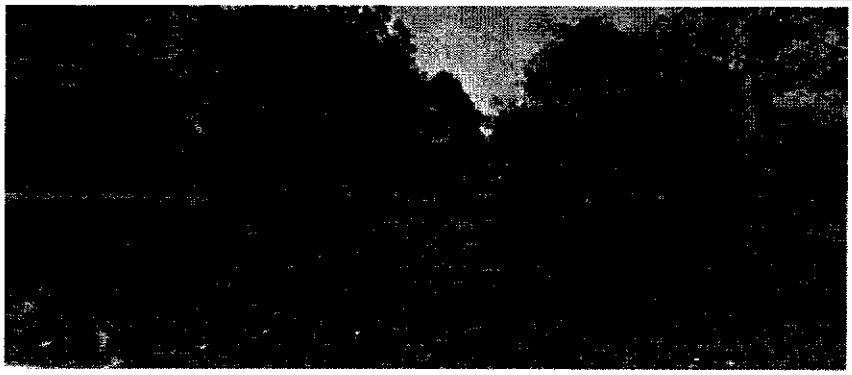
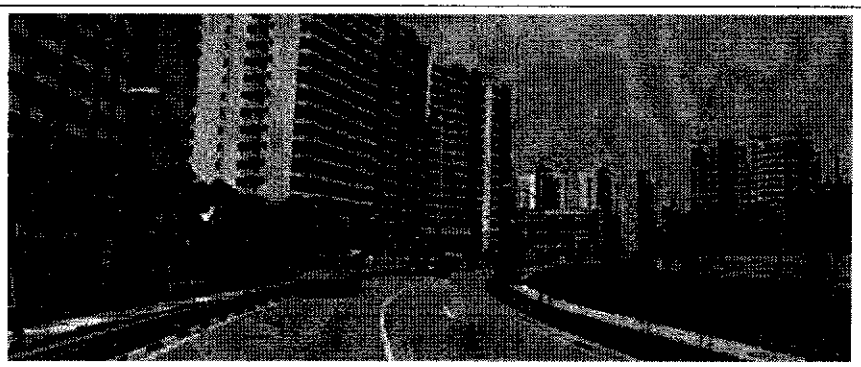
The Map of Chalong Bay



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Fig. 3 for Question 2

Photographs of sites around Punggol Park

Site	Photographs
A	
B	
C	

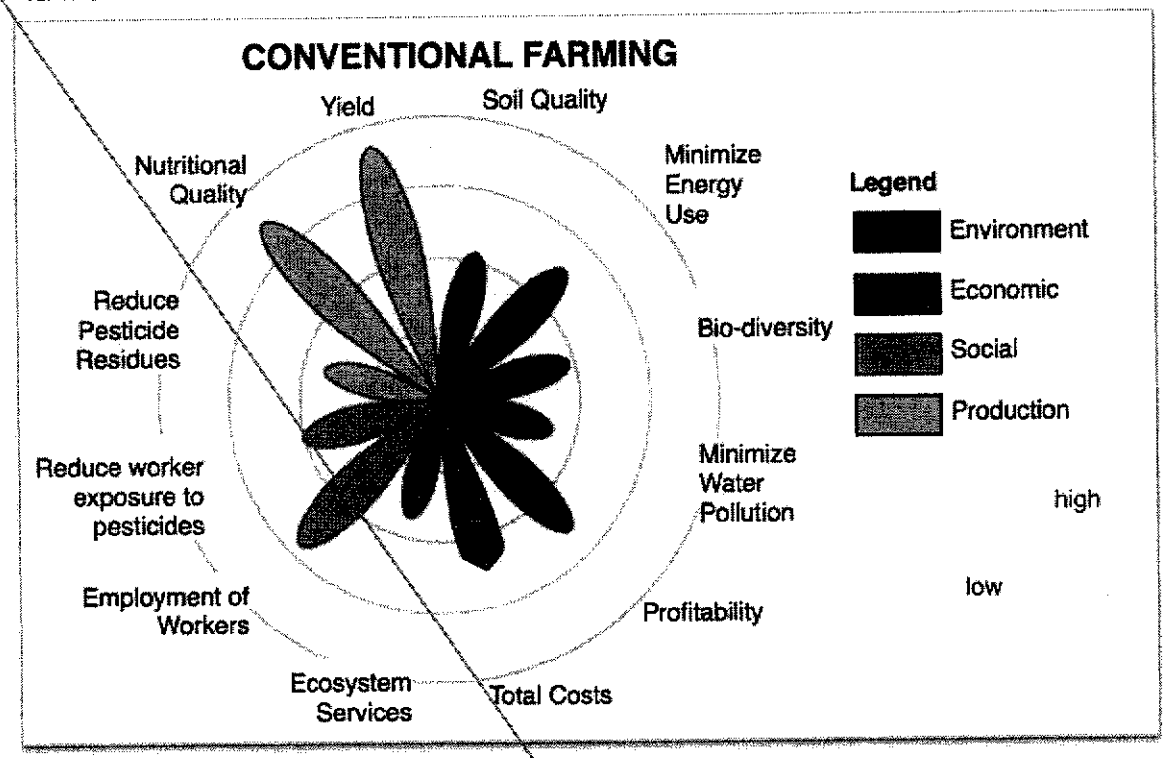
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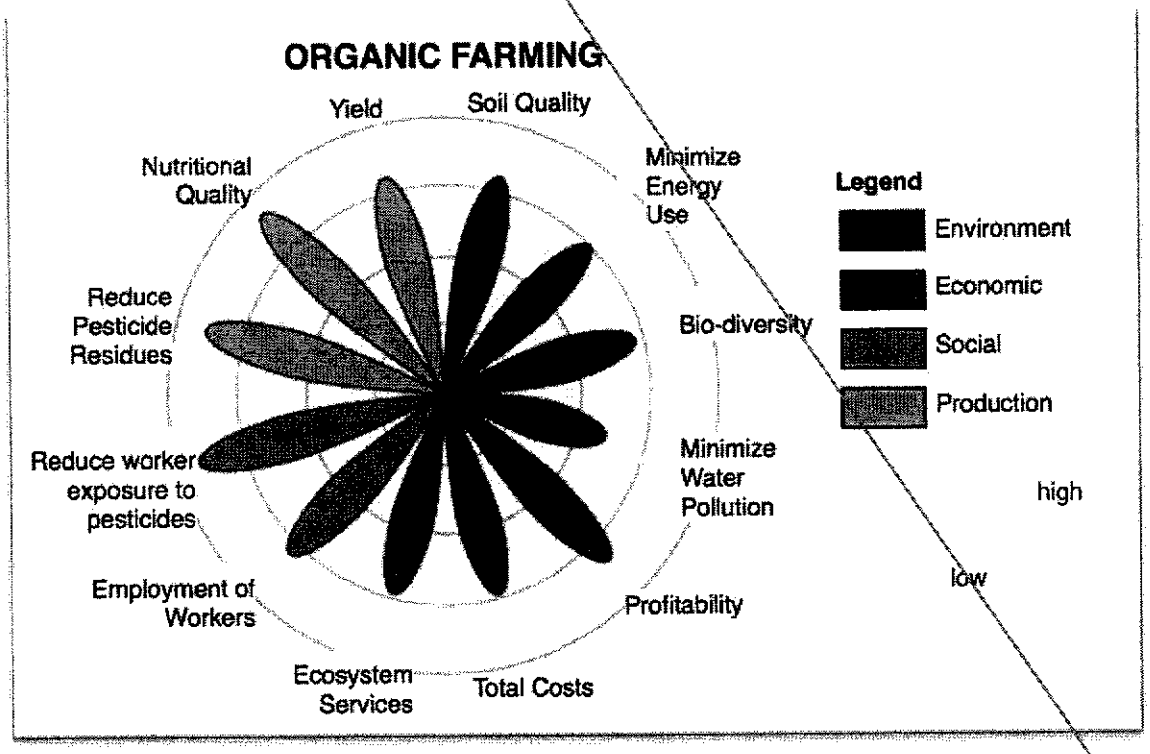
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Figs. 4A and 4B for Question 5

Figs. 4A and 4B shows the farming practices involved in conventional and organic farms.





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Geylang Methodist School (Secondary)
Preliminary Examination 2021

HUMANITIES **2272/02**

Paper 2 Geography Elective

4 Express
5 Normal Academic

Additional materials: Writing paper
Insert
Graph paper

1 hour 40 minutes
30 August 2021

READ THESE INSTRUCTIONS FIRST

Write in dark blue or black pen.
Do not use staples, paper clips, highlighters, glue or correction fluid.

Section A
Answer **one** question.

Section B
Answer **one** question.

Section C
Answer **one** question.

Candidates should support answers with the use of relevant examples.
Sketch maps and diagrams should be drawn whenever they serve to illustrate an answer.
The insert contains Fig. 2, for Question 1, Fig. 3 for Question 2, Fig. 4A and 4B for Question 5.

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.

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Section A

Answer **one** question from this section.

1 A group of students carried out an online research on tourist arrivals to Phuket, Thailand. Information related to their research is shown in Fig. 1. They wanted to find out if the changes in tourist arrivals to Phuket, Thailand would have affected the locals working in the tourism industry. They decided to conduct interviews with the local employees along Chalong Bay in Phuket. The map of Chalong Bay is shown in Fig. 2 (Insert).

Yearly Tourist Arrivals to Phuket from 2002 to 2016

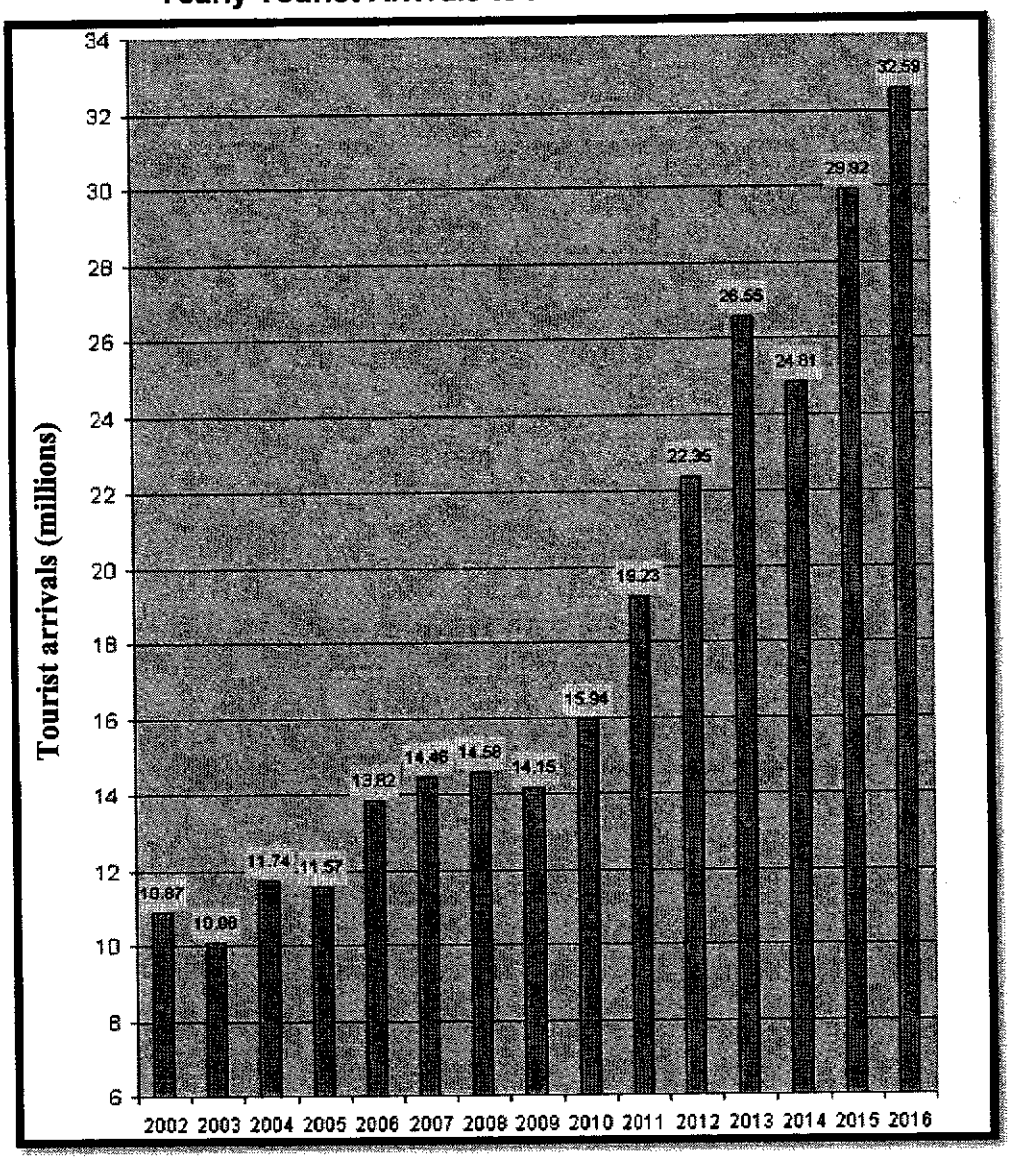


Fig. 1

(a) Use Fig. 1 to calculate the change in tourist arrivals from 2014 to 2015. [1]

(b) Explain why the students had decided to conduct an interview and outline the factors that the students would have to consider when they were crafting their questionnaire. [3]

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(c) Another group of students thought that the increase in tourist arrivals over the years would have a negative impact on the coastal environment along Chalong beach. They stationed themselves along Chalong Bay and carried out an environmental perception survey. They interviewed a total of 30 tourists at 5pm on a weekend.

The results of their survey are shown in Table 1.

Environmental perception survey

Negative aspect	-2	-1	0	1	2	Positive aspect
Heavily littered	12	10	3	5	0	No obvious litter
Noisy	20	8	0	2	0	Quiet
Buildings in poor state of repair	8	10	2	10	0	Well-tended and cared for buildings
Unpleasant surroundings	0	8	14	8	0	Pleasant surroundings

Table 1

(i) On the graph paper provided, plot a bipolar graph to represent the data collected in Table 1. What conclusion can be made from Table 1 and the graph drawn? [5]

(ii) Explain how the data collection method carried out by the students can be improved for greater reliability. Justify your answer. [2]

(iii) Suggest another set of data that can be collected by the students and explain how it can be used to support their findings. [2]

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2 A group of students from Coney Island Secondary School conducted a weather study of Punggol Park and its surroundings. Fig. 3 (Insert) and Table 2 shows the three locations at which the study was conducted. The students recorded the relative humidity and precipitation at 8am and 4pm for three consecutive days. The data collected is shown in Table 2 below.

(a) With reference to Fig. 3 (insert) and Table 2, craft a possible hypothesis that can be tested. [1]

Data of Relative Humidity and Precipitation collected over a period of 3 days

Weather element	Day	Monday		Tuesday		Wednesday	
	Time/Site	8am	4pm	8am	4pm	8am	4pm
Relative Humidity (%)	A	84	86	90	83	83	65
	B	84	88	92	84	83	65
	C	81	85	89	80	80	62
Precipitation (mm)	A	0	9	12	10	3	0
	B	0	10	13	11	3	0
	C	0	6	10	7	1	0

Table 2

(b) Identify the instrument used and describe the steps taken to measure precipitation recorded in Table 2. [4]

(c) The students are curious to know why the level of precipitation recorded at Site C is lower than that at Sites A and B. Give a reason to explain why this might be so. [2]

(d) With reference to Table 2, plot a line graph on the graph paper provided to represent the relative humidity and precipitation data recorded at Site B. [3]

(e) The students observe a relationship between precipitation and relative humidity. With reference to Table 2, describe if this relationship is observed at Site B. [3]

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Section B

Answer **one** question from this section.

3 **(a)** Explain how pressure differences can result in sea breezes along coastal areas. [4]

(b) 'Political instability is the main reason tourists avoid visiting a country.'

How far do you agree with this statement? Use evidence to support your answer. [8]

4 **(a)** Evaluate if the Singapore Green Mark Scheme is an effective national policy to combat the effects of climate change. [4]

(b) 'Urbanisation is the leading factor that contributes to enhanced greenhouse effect.'

How far do you agree with this statement? Use evidence to support your answer. [8]

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Section C

Answer **one** question from this section.

5 **(a)** Study Figs. 4A and 4B (Insert) which show the farming practices involved in conventional and organic farms.

Using Figs. 4A and 4B, compare the differences between conventional and organic farming practices and account for the differences in both farming practices. [4]

(b) With relevant examples, describe and explain how physical factors can contribute to food shortages. [6]

Fig. 5 below shows the production of cotton since 1960.

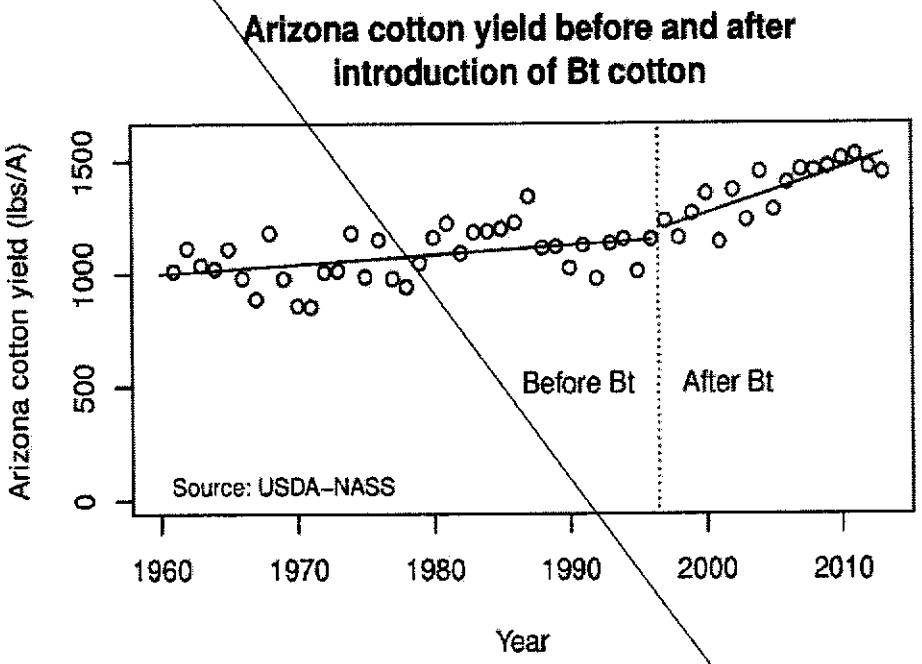


Fig. 5

(c) Based on Fig. 5, describe and account for the trend of Bt cotton since 1960. [5]

(d) Explain how climate change may impact food supply. [2]

(e) 'Government policies play the greatest role in determining the intensity of food production.'

How far do you agree with this statement? Give evidence to support your answer. [8]

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6 (a) Study Fig. 6, which shows the plate boundaries in South America and also the exact locations where 2 major earthquakes occurred in Haiti and Chile in 2010.

Diagram showing the location of earthquakes in Haiti and Chile

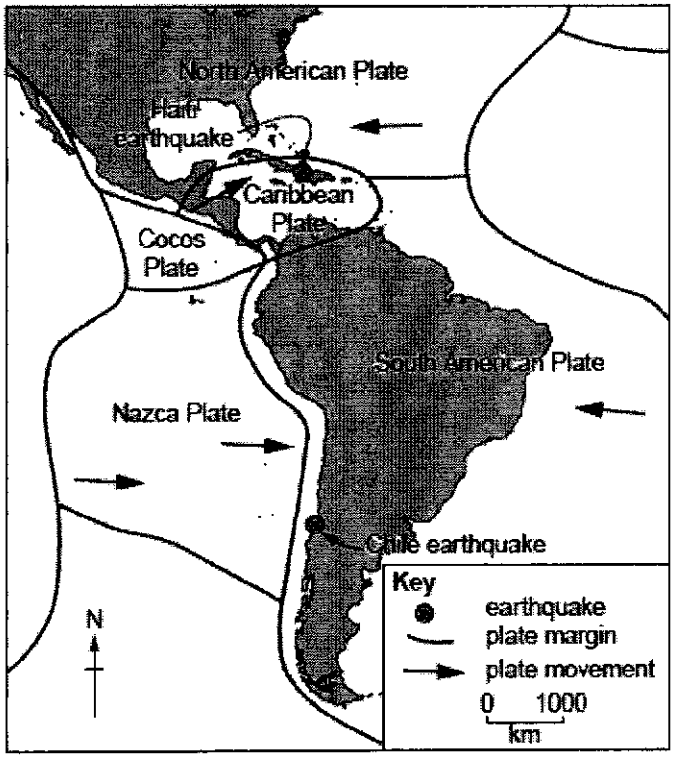


Fig. 6

Using Fig. 6, explain how the earthquake in Chile occurred. [4]

(b) Study Fig. 7, which shows the obesity data for England in 2016.

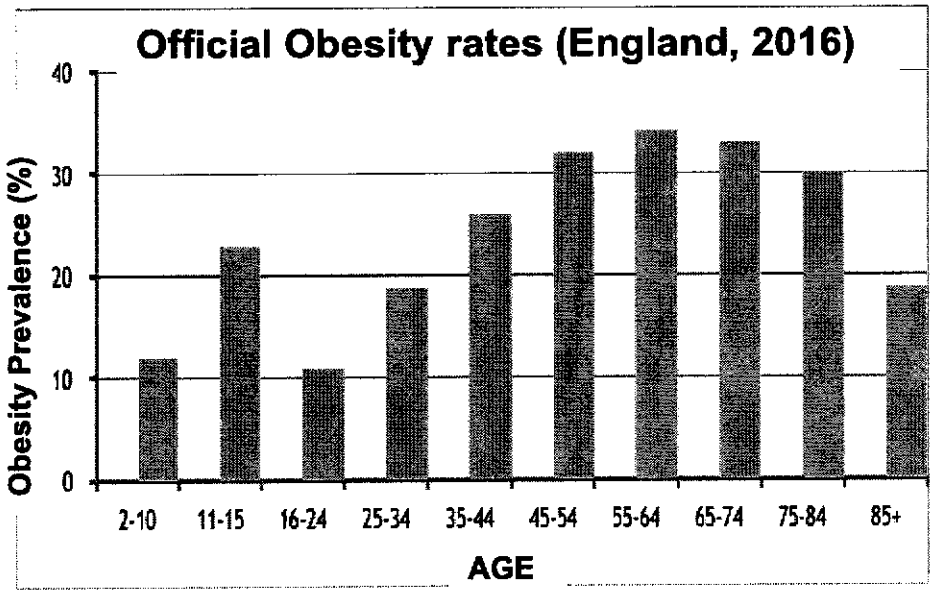


Fig. 7

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With reference to Fig. 7, suggest a relationship and describe the obesity rates for England in 2016. [4]

(c) Using an example, explain how obesity can impact a country's economic development. [4]

(d) Study Fig. 8, which shows the anatomy of a tsunami.

Tsunami formation

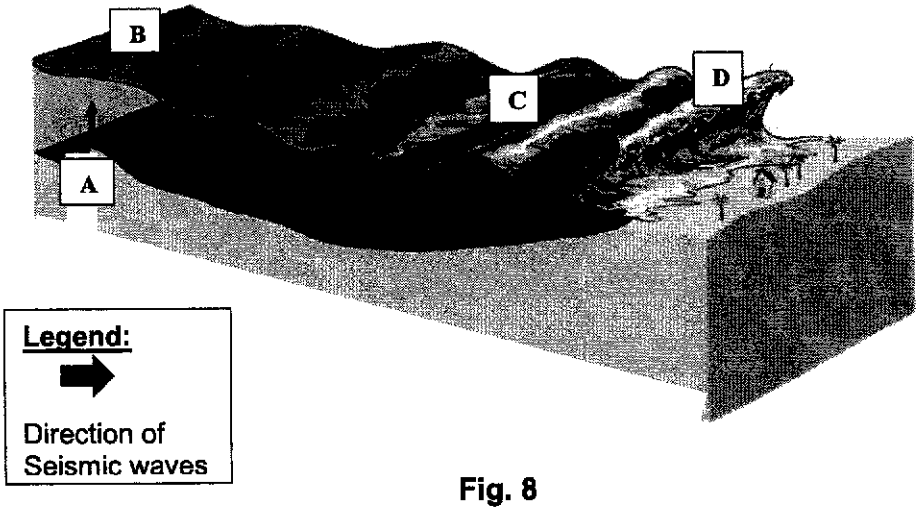


Fig. 8

Use the information in Fig. 8 to explain the formation of a tsunami. Refer to points A – D to help in your explanation. [5]

(e) 'Distance from the epicentre is the most important factor affecting the extent of damage of an earthquake.'

Do you consider this statement to be true? Explain your answer. [8]

END OF PAPER

Copyright acknowledgments

Question 5 Fig. 7 © *Image: https://www.shutterstock.com/image-vector/tsunami-series-huge-waves-580423369*

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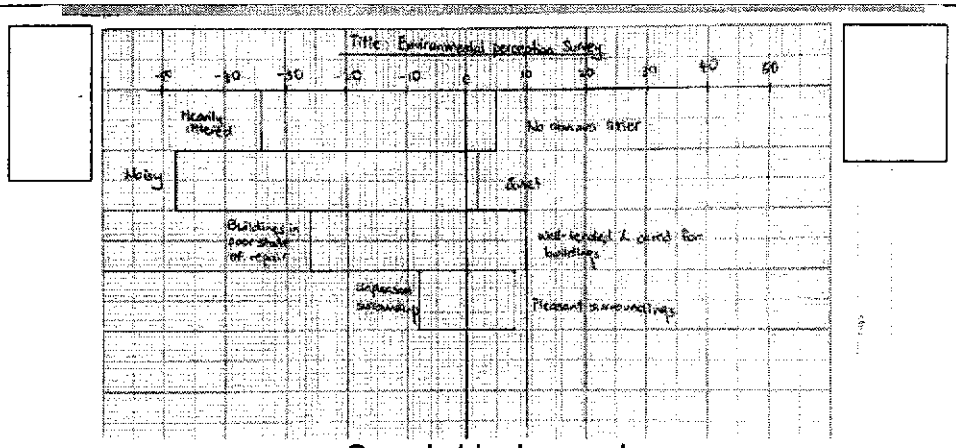
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2021 4E5NA EGY PRELIM MARKING SCHEME

1	**(a)**	Use Fig. 1 to calculate the change in tourist arrivals from 2014 to 2015.	[1]
		• Tourist arrivals increased by 5.11 million from 2014 to 2015. *No units, no marks*	
	(b)	Explain why the students had decided to conduct an interview and outline the factors that the students would have to consider when they were crafting their questionnaire.	[3]
		• The students decided to conduct an interview as this would allow students to collect first hand data on how tourism would have affected the locals. [1] • Considerations will include: o Question type – The questions posed must be relevant to the investigation in helping them to answer to their guiding question. o Length of the questionnaire – The questionnaire should not take the respondents too much time to complete; it must be kept within 10 or less as a general rule. o Language – Students must ensure that they make use of simple and clear language with clear instructions of what the respondents need to do. o Questions to avoid – Students must consider whether if the questions posed are offensive or if the question requires respondents a long time to respond to? (accept any 2 as the considerations)	
(c)	**(i)**	On the graph paper provided, plot a bipolar graph to represent the data collected in Table 1. What conclusion can be made from Table 1 and the graph drawn?	[5]
		• 3m for the graph o 1m for accurate title, labelling of axis (negative aspect Vs positive aspect) o 2m for accuracy • 2m for conclusion o The conclusion that can be made from Table 1 is that there is an overall negative environmental impact / negative impact on the environment based on Table 1. o Based on graph the total score is -91 which is largely negative for all aspects with the noise and amount of litter being the highest concern with a score of -34 and -28 respectively.	

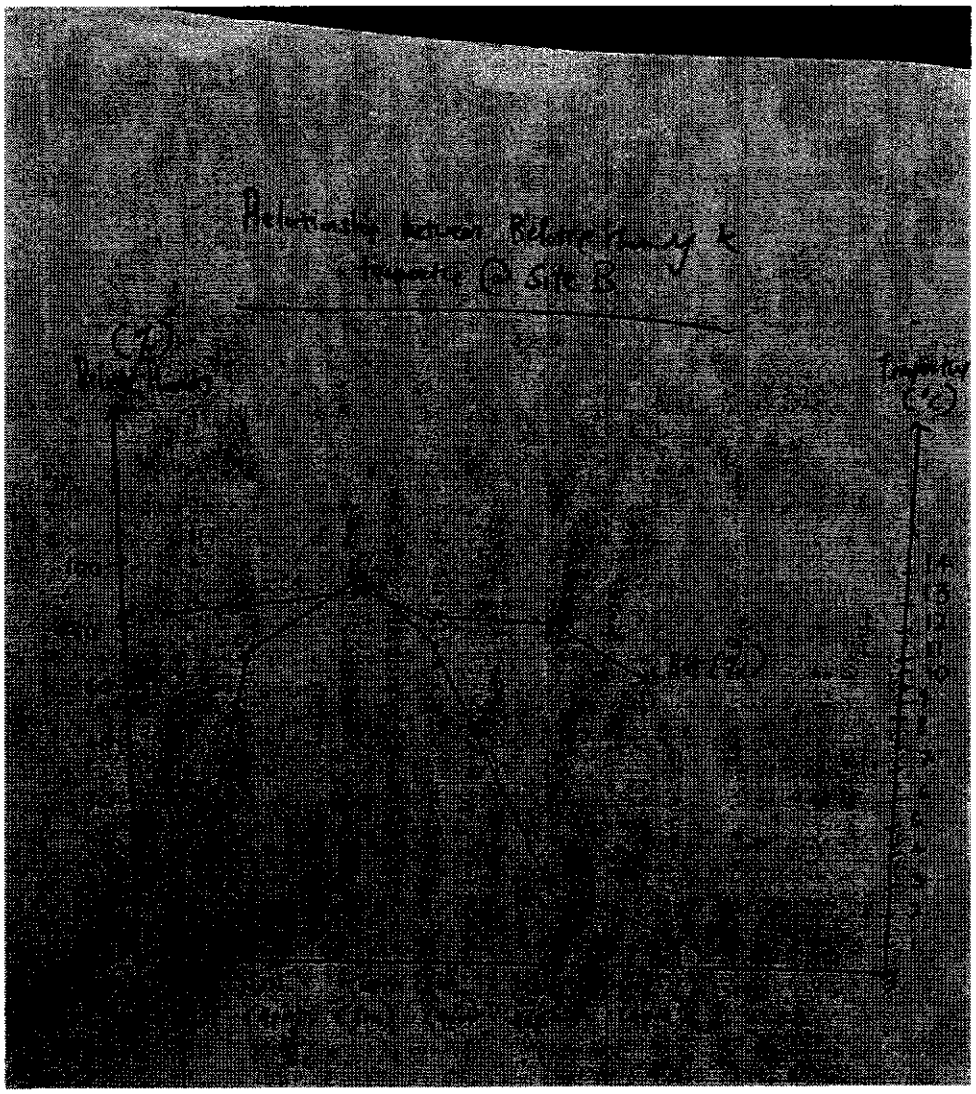
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		 Sample bipolar graph	
	(ii)	Explain how the data collection method carried out by the students can be improved for greater reliability. Justify your answer.	[2]
		1st Way: Describe: Students can increase the sample size to at least 50; Justify: As currently at 30, this sample size is too small for an accurate analysis to be carried out to answer investigation. **2nd Way:** Describe: Students can conduct the perception survey on different days such as on weekdays or carry out the survey at different times of the day. Justify: This will thus allow for comparison to be made; weekend/evening is generally more crowded, and they would also have other factors that may affect the visitor's perception such as more traffic or more litter.	
	(iii)	Suggest another set of data that can be collected by the students and explain how it can be used to support their findings.	[2]
		• Students can take photographs of the surrounding environment as pictorial evidence. This will thus provide an accurate record of the environment that they had conducted their investigation. • As such this allows the students to establish a relationship between the perception survey and the actual environment. • Students can also survey locals to get a better understanding of the changes in the environment. • Students may also conduct water-testing along the bay to determine the quality of water and link it back to the amount of litter and pollution that takes place.	
2	**(a)**	With reference to Fig. 3 (insert) and Table 2, craft a possible hypothesis that can be tested.	[1]
		• One possible hypothesis is, the higher the precipitation, the higher the relative humidity at the Sites.	

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		OR • The further a location is away from the trees in Punggol Park, the lower the relative humidity.	
	(b)	Identify the instrument used and describe the steps taken to the measure precipitation recorded in Table 2.	[4]
		• Students can use a rain gauge (1m) Steps: • Students will need to select a suitable location, preferably one with no buildings, trees or any other obstructions. [1] • The students will sink the rain gauge into the ground with about 30cm protruding above the ground to avoid any excessive water droplets from entering the instrument and to prevent it from toppling. [1] • They will record the timing when the rain starts and stops. • After the rain stops, they will pour the water collected into a measuring cylinder and at eye-level read off the amount of precipitation and record it on a recording sheet. [1] • Repeat the steps to collect more sets of data for accuracy. [1] Accept any 3 steps	
	(c)	The students are curious to know why the level of precipitation recorded at Site C is lower than that at Sites A and B. Give a reason to explain why this might be so.	[2]
		• At location C, the area is surrounded with buildings. These can act as obstructions as they prevent precipitation from being collected accurately. Thus the precipitation recorded may be lower. [1] • In contrast, at locations A and B, there are lesser obstructions such as buildings and trees which result in more rainfall being collected [1] • No water body at site C may mean lesser evaporation and hence a lower relative humidity and thus a lower precipitation level. [1] • More vegetation at other sites than C will also suggest a higher rate of transpiration and thus increasing the humidity levels. Thus increasing the precipitation levels	
	(d)	With reference to Table 2, plot a line graph on the graph paper provided to represent the relative humidity and precipitation data recorded at Site B.	[3]
		Students need to draw a comparative line graph Title: Relative humidity and precipitation at site B (Need to have the words Site B) Legend + accurate plotting of graph Axes – 3 axes. (X-axis is day/time), (Y-axis is precipitation (mm) and RH (%))	

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	(e)	The students observe a relationship between precipitation and relative humidity. With reference to Table 2, describe if this relationship is observed at Site B.	[3]
		• The relationship observed at site B shows that when the relative humidity increase/is higher, the precipitation also increases/is higher. (1m) • This can be seen when the RH increased from 84% to 88% on Monday 8am to 4pm, the precipitation also increased from 0mm to 10mm in the same duration. (2m for a complete set of evidence) Or	

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		• RH and precipitation are lower at 8am on Monday at 84% and 0mm respectively, while RH and precipitation are higher on Monday 4pm at 88% and 10mm respectively. (2m for a complete set of evidence) *Yes + 2 evidence* *state rs + 2 evidence*	
3	(a)	Explain how pressure differences can result in sea breezes along coastal areas.	[4]
		• Sea breeze occurs during the day [1] along the coastal areas. • In the day, the land heats up faster than the sea due to the differential heating and cooling of the land surface and water body. [1] • Thus, the air temperature above the land is higher and this results in a lower air pressure. [1] At the sea, the temperature is lower and hence, it will have a higher air pressure. • Wind moves from an area of high pressure to an area of low pressure. Thus air will move from the sea to the land thus forming the sea breeze along the coastal area. [1]	
	(b)	'Political instability is the main reason tourists avoid visiting a country.' How far do you agree with this statement? Use evidence to support your answer.	[8]
		Tourism is a volatile industry. This means that the changes in tourist numbers and receipts can occur suddenly and greatly. This is due to factors that may deter tourists from visiting a country. Political instability is one deterrent to tourists visiting a country. **Political Instability** Political instability may discourage tourists from visiting a country. One such situation is that of political conflicts. Political conflict refers to a state of disagreement between different groups of people that may result in wars. Political conflicts can pose dangers to tourists as they may disrupt services and cause damage to infrastructure. As a result, tourists may postpone or cancel their travel plans to the country. Due to these dangers, the governments of most countries may also issue travel advisories to discourage citizens from visiting the country. For example, in 2011, governments of most countries banned their citizens from visiting Libya due to the civil war in Libya. Between March and October 2011, there were no commercial flights into Libya and hence, there was no tourist arrivals by air. **Outbreak of diseases** Other than political instability, the outbreak of diseases is another factor that deters tourists from visiting a country. An outbreak of disease refers	

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to the sudden and widespread occurrence of disease in an area. It can cause a huge drop in tourist arrivals. This is because tourists do not want to risk getting infected with a contagious disease. Government agencies may also advise travelers to avoid areas with disease outbreaks. Outbreaks of diseases, such as H1N1 influenza or SARs can have strong negative impact on tourism. For example, in the SARS outbreak in 2003, Singapore's tourism sector was badly affected, with tourist arrivals down nearly 70% in April 2003.

Disaster
Disasters are events that cause great damage to properties, lead to injuries or cause great loss of life. A disaster can discourage tourists from visiting a destination as it may pose greater risks to safety of the tourist and may disrupt essential tourist infrastructure. For example, the earthquake and tsunami that struck Tohoku, Japan led to 28% drop in tourist arrivals in 2011.

Recession
A recession is a period of general slowdown in economic activities. In a recession, many people experience a loss of income or jobs. The decline in income causes people to cut back on spending. This leads to a decline in demand for goods and services leading to people being less willing to travel overseas. For example, the Global Financial crisis in 2008 saw France being hit by a fall in tourist numbers by 15.5% as travelers from Britain and Germany who were top travelers in the region cut back on travel plans due to the global recession.

Conclusion
Having considered the various factors that deter tourists from travelling, I feel that political instability is the main deterrent factor as tourists would not dare to risk their lives to travel to a politically unstable place as they may end up not returning back to their country if they are caught in the political conflict of another country. Hence, political instability is the leading deterrent to tourists visiting a country.

- Students who mention other factors besides the 4 factors that can cause fluctuation of tourism levels with sound logic will only be able to hit a max of L2 / 5m → E.G increase crime rates and negative media influence

Marks	Level of Description
Level 1 (0 – 3 marks)	At this level answers will be generalised or with minimal support if given any at all. Reasoning rather weak and expression may be unclear. A basic answer that has little

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			development. Answers lack examples or other evidence, or it is so sketchy that it adds little support to the answer.	
		Level 2 (4 – 6 marks)	Disagreement or agreement will be supported by appropriate detail. Or, both agreement and disagreement are considered, but support is patchy so that the answer is not full. Good reasoning and logic in parts of the answer with good expression in places. Some examples or other evidences will be presented to support answers in at least one place in the answer.	
		Level 3 (7 – 8 marks)	At this level answers will be comprehensive (at least 3 supporting causes) and supported by sound knowledge. Both agreement and disagreement are considered and well supported. Reasoning is clear and logical with good expression of language. Examples or other evidence to support answers will be extensive.	
4	**(a)**	Evaluate if the Singapore Green Mark Scheme is an effective national policy to combat the effects of climate change.		[4]
		The Singapore Green Mark Scheme involves constructing 'green' buildings. It was launched by the Building Construction Authority (BCA) in 2005. [1] • The scheme allows buildings to be evaluated and certified according to how energy-efficient and environmentally friendly they are. It is successful as it aims to encourage more new 'green' buildings, which are more energy-efficient. [1] • For example, Plaza by the Park and the National Library Building have reported energy savings of 15% to 35% compared to conventional buildings. This cuts down greenhouse gas emissions by reducing the use of fossil fuels to generate electricity. • **However,** construction companies and developers in Singapore tend to be conservative about adopting new ideas and materials to build 'green' buildings. It also costs more to build because 'green' materials may be more expensive. [1] • Thus although the Singapore Green Mark scheme is effective as we are focusing on how to reduce wastage, however due to the financial issues this may not be a feasible approach for every building. [1] Students need to provide 1 Pro and 1 Con and evaluate which is better		

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		Examples not necessary	
	(b)	'Urbanisation is the leading factor that contributes to enhanced greenhouse effect.' How far do you agree with this statement? Use evidence to support your answer.	[8]
		I agree that urbanization is the leading factor that contributes to enhanced greenhouse effect. The concentration of greenhouse gases in the atmosphere has increased mainly due to anthropogenic factors. Anthropogenic factors such as urbanisation, agriculture, industries and deforestation contribute to enhance greenhouse effect. However besides Urbanisation, there are also other factors that will contribute to the enhanced greenhouse effect such as deforestation and agricultural activities **<u>Urbanisation</u>** Urbanisation is the process of increasing build-up areas such as towns and cities for people to live in and work in. Large areas of forested land need to be removed to develop into cities. In the process, large amount of energy is needed for activities like heating, cooking, and lighting. More fossil fuels have to be burnt to provide the energy. These increase greenhouse emissions which lead to an increase in global temperature. Large amounts of fossil fuels are burnt to provide energy for household activities in urban areas resulting in emission of greenhouse gases such as carbon dioxide, sulphur dioxide and nitrous oxide. These greenhouse gases have the ability to trap heat thereby increasing the global temperature resulting in the enhanced greenhouse effect. For example, some activities due to urbanization include heating, cooling, cooking and lighting. Furthermore, the high concentration of cars, buses and other forms of transportation in urban areas also contributes to the amount of greenhouse gases emitted in these areas. In addition, constructing infrastructure and producing construction materials also releases greenhouse gases into the atmosphere, thereby contributing to the enhanced greenhouse effect. However, there are other important human activities for this temperature increase. Deforestation is one of them. **<u>Deforestation</u>** Deforestation is the loss of forest due to the removal of trees in forested land. Trees are chopped down for raw materials and are removed to clear land for development, mining, housing, and agriculture purposes. Forests	

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are "the Green Lungs" which help to absorb carbon dioxide which is a greenhouse gas.

Deforestation reduces carbon dioxide absorbed. Deforestation is 2nd largest contributor of carbon dioxide to the atmosphere. With the increase in carbon dioxide, greenhouse gases emission is increased and this leads to an increase in global temperature. An example of deforestation taking place on a large scale is in the Amazon Forest in Brazil.

Industries

Industries refers to the production of goods and services within a country. Secondary industries which carry out industrial economic activities such as manufacturing, involve the burning of fossil fuels that result in greenhouse gas emissions.

In the past, most carbon dioxide emissions from industrial processes were found in Europe, North and Central America. This is because countries in these regions were heavily involved in manufacturing activities. However, in recent years, countries such as China and India are also contributing more to global carbon dioxide emissions due to their rapid industrialization.

Agriculture

Agriculture is the practice of cultivating land, producing crops and raising livestock. Agriculture is one of the highest contributors of greenhouse gases. In farms, tractors run on fossil fuels which release carbon dioxide which traps heat and raise the global temperature. Besides, the use of inorganic fertilisers also increases the amount of nitrous oxide, a greenhouse gas. Organic matter in paddy fields also releases methane during decomposition. Furthermore, cattle farming also contributes to greenhouse gas emission because cattle release methane as a waste gas. Millions of tonnes of methane are released each year from cattle farming and these emissions contribute to the enhance greenhouse effect.

In my opinion, I believe that agricultural practice, specifically cattle grazing will be the leading factor to causing the enhanced greenhouse effect. This is very much so due to the rise in population growth as well. The amount of greenhouse gasses emitted while grazing cattle far exceeds the burning of fossil fuels alone.

Marks	Level of Description

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		Level 1 (0 – 3 marks)	At this level answers will be generalised or with minimal support if given any at all. Reasoning rather weak and expression may be unclear. A basic answer that has little development. Answers lack examples or other evidence, or it is so sketchy that it adds little support to the answer.	
		Level 2 (4 – 6 marks)	Disagreement or agreement will be supported by appropriate detail. Or, both agreement and disagreement are considered, but support is patchy so that the answer is not full. Good reasoning and logic in parts of the answer with good expression in places. Some examples or other evidences will be presented to support answers in at least one place in the answer.	
		Level 3 (7 – 8 marks)	At this level answers will be comprehensive (at least 3 supporting causes) and supported by sound knowledge. Both agreement and disagreement are considered and well supported. Reasoning is clear and logical with good expression of language. Examples or other evidence to support answers will be extensive.	

6	(a)	Using Fig 6, explain how the earthquake in Chile occurred.	[4]
		• The earthquake took place when the oceanic Nazca plate converges with the continental South American plate.[reserve 1m for using fig. 6] • The denser oceanic Nazca plate subducts underneath the less dense continental South American plate.[1] • The subduction of the 2 plates causes friction and slow build-up of stress on the rock between the plate boundaries. [1] • When the rocks can no longer withstand the increasing stress, they can suddenly slip many metres, releasing energy in the form of seismic waves and causing the earthquakes. [1] Award 1 mark for each point up to a maximum of 4 marks Max of 3 marks to be awarded if Fig. 6 is not used in the answer.	
	(b)	With reference to Fig. 7, suggest a relationship and describe the obesity rates for England in 2016.	[4]

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		Relationship: • Overall, obesity rates in England increase from a younger age to older ages. OR the older you get the higher the obesity rate. **Describe:** • Younger age groups (2 to 10, and 16 to 24) have low obesity prevalence of around 11%. • The numbers increase steadily till reaching a peak of 33% at age of 55-64. • After age 64, the prevalence rates drop steadily to less than 20% at age of 85+. • An anomaly is that the age group of 11 to 15 experience an exceptionally high obesity prevalence of 22%. Accept any 3 points No evidence max 1m.	
	(c)	Use the information in Fig. 8 to explain the formation of a tsunami. Refer to points A – D to help in your explanation.	[5]
		• At point A, seismic energy from an offshore earthquake forces a mass of sea water upwards as seen at point B causing a Tsunami to start. [1] • The tsunami waves then moves across the ocean, starting with height of less than 1 m and speeds of 800 km/h, and may pass undetected. [1] • At point C, upon reaching shallower water, greater friction slows the waves and forces them to increase in height. This is also known as wave shoaling. [1] • At the point of impact on the coast as seen at point D the tsunami could be travelling at 30-50 km/h and may reach heights of 15 m as the waves slow down and the subsequent waves crash into the waves and thus increase its height. [1] • Sometimes, the sea recedes from the coast before advancing onshore because water rushes to fill the void caused by the movement of the sea floor. Water is forced out afterwards, resulting in a tsunami. [1] [Any 5 of the above points]	
	(d)	Using an example, explain how obesity can impact a country's economic development.	[4]
		<u>Economic impact of obesity</u>	

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		• Workers who are obese may be absent from work and taking more days of leave due to obesity-related health issues, thus leading to lower productivity. [1] • Employees who are absent from work due to sickness may cost companies millions in productivity and insurance costs. [1] • The social impact of obesity is that people may choose to go on a diet in order to loose weight. Dieting provides employment and value to an economy. [1] • Increase in diversion of funds from other aspects of growth in a country since more money will be directed to the healthcare industries this gives lesser investment for other areas of development. • For example, in the US, the weight loss industry was valued at US$20 billion. This includes diet books, medication and medical procedures for losing weight, which can create jobs in the health sector. [1] *Examples are required, reserve 1m for examples* Max of 3m to be awarded without example.	
	(e)	'Distance from the epicentre is the most important factor affecting the extent of damage of an earthquake.' Do you consider this statement to be true? Explain your answer.	[8]
		I do not agree with the statement 'Distance from the epicentre is the most important factor affecting the extent of damage of an earthquake'. Earthquake refers the vibration in the earth's crust caused by the sudden release of stored energy in the rocks found along the fault lines. Other factors include the time of occurrence of the earthquake and the population density of the location of the earthquake. **Distance from the epicentre** refers to the distance from the point on earth's surface directly above the focus. The damage caused by an earthquake is more severe when an area is closer to the epicentre of the earthquake as the impact to the area is direct. For example, the 2011 earthquake that occurred in Christchurch, New Zealand. The epicentre was in a town a few kilometres away. This lead to more damages than areas further away from the city. A death toll of 185 poeple and infrastructures damaged worth $40 billion was lost. Therefore, the distance of epicentre is one factor affecting the extent of damage of an earthquake since the nearer an area is to the epicentre of an earthquake, the higher the damage.	

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The time of occurrence refers to the time of day during which an earthquake occurs which determines where people are and what they are doing. This will affect people's chances of survival in during an earthquake. For instance, if people are sleeping when the earthquake occur, people will take a longer time to react than people who are working or are active. This is because they will be less prepared, thus increasing the number of deaths or people being trapped in their houses. For example, the earthquake which occurred in the Sun Moon Lake Region, in Taiwan, in 1999 which occurred a couple hours past midnight resulted in a death toll of 2415 people and 11,305 injured and NT$300 billion worth of damage done. Therefore, the time of occurrence is one factor affecting the extent of damage of an earthquake since the more active people are during the occurrence of the earthquake like during the day, people are more prepared and they will react fast when a earthquake is to occur.

Population density refers to **the number of individuals per unit geographic area**, for example, number per square meter, per hectare, or per square kilometer. An area with a higher population density means that more people will suffer from the damage caused by the earthquake and thus adding to the extent of damage caused by the earthquake.
For example, the earthquake which occurred in Sichuan, China, in 2008 which occurred in the mountainous central region of Sichuan province where the majority of the population of the Sichuan work and live at and which resulted in 90,000 counted as dead, missing or presumed dead and 375,000 injured by the falling debris and building collapses. Therefore, population density is one factor affecting the extent of damage of an earthquake since earthquake in sparsely
populated areas are likely to affect fewer people than in densely populated people thus lesser people will be affected damage caused will be lower.

In conclusion, the population density is the most important factor affecting the extent of damage of an earthquake even though there are also other factors affecting the extent of damage of an earthquake. In my opinion, regardless of the distance from the epicenter and the time of occurrence, if the population density is low there would be lesser people who would be affected. Thus statistically when there are more people there would be more houses, roads, electrical lines which will then increase the extent of damage caused.

Marks	Level of Description

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		Level 1 (0 – 3 marks)	At this level answers will be generalised or with minimal support if given any at all. Reasoning rather weak and expression may be unclear. A basic answer that has little development. Answers lack examples or other evidence, or it is so sketchy that it adds little support to the answer.	
		Level 2 (4 – 6 marks)	Disagreement or agreement will be supported by appropriate detail. Or, both agreement and disagreement are considered, but support is patchy so that the answer is not full. Good reasoning and logic in parts of the answer with good expression in places. Some examples or other evidences will be presented to support answers in at least one place in the answer.	
		Level 3 (7 – 8 marks)	At this level answers will be comprehensive (at least 3 supporting causes) and supported by sound knowledge. Both agreement and disagreement are considered and well supported. Reasoning is clear and logical with good expression of language. Examples or other evidence to support answers will be extensive.	

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