



Suggested answers to 2015 COMBINED HUMANITIES (Geography) Paper 2 2204

1a)

53.3%

1b)

The student could have a recording sheet with 3 columns and 200 rows. The columns can be labelled as “country of origin” as well as the “purpose of travelling to Singapore (Visiting Singapore, on a stopover).”

1c)

The guiding question could be; Does the distance from the visitor’s country of origin to Singapore affect the tourists’ decision if they were likely to be on a stop over? Fig 2 shows the geographical distance from the visitor’s country of origin to Singapore. Hence, the students using the data from Fig 1, can observe if there is a correlation between the distance from the visitor’s country of origin and the purpose of travel to Singapore.

1d)

The students could conduct surveys to assist in their investigation. The students could draft a survey encompassing closed ended questions with options such as the Singapore Tourism board, hotels and travel agents, to understand how the tourists had found out about Gardens by the Bay. The students can then position themselves at the entrance of the Gardens by the Bay and use systematic sampling to obtain samples to investigate how the tourists had found out about the place. After conducting the survey, the student can record their data in a pie chart so that it would clearly demonstrate which option the tourist had used to understand more about Gardens by the Bay.



2a)

Day 2 had the highest amount of rainfall with a total of 80mm.

2b)

Both rainfall and humidity could be shown on a comparative bar graph. Two categories can be created with the rainfall and humidity shaded differently to represent rainfall and relative humidity. On both sides of Y axis of the graph (left and right side), rainfall and relative humidity should be labelled with scales that are able to accommodate the largest and the smallest values. The X axis of the graph should be labelled as time.

2c)

A suitable hypothesis would be; Rainfall amounts and relative humidity are positively correlated. Using the data from the table or from other sources, identify if a higher relative humidity would relate to a higher rainfall amounts. If the data reflects this trend, the hypothesis is therefore proven right, otherwise it is proven wrong.

2d)

Another instrument that can be used is a sling psychrometer.

2e)

The student could have ensured that the experiment was conducted an increased number of times over a longer time period. They could then taken the average to ensure that their data was better represented. Whilst using the sling psychrometer, the students should have ensured that it was held far from the body so that it did not pick up their body heat. The students could have swung the sling psychrometer for 1 minute before reading and recording the temperature. When using the data logger, the students needed to have ensured that data was accurately read off.



3a)

Tourism can have a positive economic impact on a country. It can lead to a growth in the GDP of a country. With a higher demand for services in the country due to the influx in tourists, individuals can benefit from an additional income and companies can experience an increase in revenue. This will lead to an overall increase in revenue for the country through taxes collected from the locals and tour companies thus leading to economic development. The large sum of money generated directly from tourism receipts also directly contributes to a growing economy.

3b)

Enhanced greenhouse effect refers to an increase in the concentration of greenhouse gases in the atmosphere which causes a rise in the global temperatures. The enhanced greenhouse effect is mainly caused by human activities, which include rice cultivation, cattle farming as well as the burning of fossil fuels and deforestation.

Rice cultivation and cattle ranching are agricultural activities that lead to an increase in the release of greenhouse gases such as carbon dioxide, nitrous oxide and methane into the atmosphere, thus causing an increase in temperatures. Rice cultivation requires the use of machineries such as tractors which run on fossil fuels, releasing carbon dioxide. In China, the use of inorganic fertilizers increase the amount of nitrous oxide in the soil which is released when the soil is ploughed or when rain flows through the soil. In rice fields, the high level of moisture in the soil leads to rapid decomposition of organic matter such as dead leaves and manure thus releasing the high levels of methane. Cattle ranching contribute to the emissions of greenhouse gases because cattle release methane as a waste gas. Millions of tonnes of methane are released each year from cattle farming. A research in Argentina shows that the methane from cows accounts for more than 30% of the country's total greenhouse gas emissions. As such, with the large amounts of greenhouse gases emitted due to farming activities, rice cultivation and cattle ranching are therefore factors contributing to the enhanced greenhouse effect.

Another factor that leads to the enhanced greenhouse effect is the burning of fossil fuels such as coal, oil and natural gases, which are formed from dead organic matter that has decomposed over many millions of years. Fossil fuels produce a large amount of energy and are mainly used in industries, transportation, domestic and commercial activities. Due to their high amount of carbon content, fossil fuels release large amount of carbon dioxide when burnt. Large consumers of fossil fuels include China, the United States of America, Canada and the United Kingdom. In 2010, global carbon dioxide emissions totaled 30.6 billion tonnes, which was 5.6 per cent increase from 2009. These large carbon dioxide emission releases would prevent large amounts of long wave radiation from escaping from the earth surface hence increasing temperatures and causing the enhanced greenhouse effect.

The last factor that leads to the enhanced greenhouse effect is deforestation. Trees are felled for wood to make products such as paper and building material. In countries such as in South East Asia and in South America, trees are removed to clear the area



for human activities such as mining, agriculture and the construction of infrastructure. As forests absorb billions of tonnes of carbon dioxide every year via photosynthesis, a decline in the number of trees and plants to absorb carbon dioxide would lead to an increase in carbon dioxide gases in the atmosphere. In addition, the exposure of soil due to deforestation also exposes the soil to sunlight. This increases the soil temperature and the rate of carbon oxidation in the soil, further contributing to the carbon dioxide in the atmosphere causing an enhanced greenhouse effect.

In conclusion, although rice cultivation and cattle ranching are important factors causing leading to the enhanced greenhouse effect, it is not the most important factor. The burning of fossil fuel is instead the most important contributor of the release of greenhouse gases as fossil fuels are used on a globally on a daily basis hence accounting for significant amounts of greenhouse gases.



4a)

One factor that that may cause fluctuations in tourism numbers is regional and global recessions. A recession is a period of general slowdown in economic activities and could be caused by problems in the financial markets or a decline in exports. A regional recession affects the economy of region or a group of countries whilst a global recession affects many countries around the world. An example of a regional crisis would be the European Sovereign Debt Crisis while an example of a global crisis is the Global financial crisis. A recession will cause widespread unemployment thus causing a decline in the one's income. This would further lead to a decline in the demand for goods and services hence people are less likely to travel overseas during a recession leading to fewer international tourists.

4b) I agree that the roles of different groups of people may conflict with one another in promoting tourism due to different interests. However, the roles of different groups may also lead to cooperation if goals are similar.

One group of people who promote tourism would be the governments and planning authorities. Governments have direct influence over the number of tourists as they are able to amend laws and policies to allow visitors to the country. They allow the construction and development of infrastructure in the country to attract tourists. For example. In China, Hunan, the longest glass bridge was opened in 2015. However, government efforts may occasionally come into conflict with the Media. Forms of media such as television, newspapers, internet, and radio can potentially report on negative information about a place, hence deterring tourists from visiting a country. Negative reports on the outbreaks of diseases cause fear in tourists to travel to a particular country therefore reducing tourists numbers. Unfavorable reports from travel writers that demean an attraction could also ruin government's efforts in trying to promote tourism. For example, reports on China's longest glass bridge have deterred tourists from going to the attraction in Hunan. Hence, the government's interests of promoting tourism can be in conflict with the interests of the media and travel writers in their attempts to draw awareness.

However, conflicts between government as well as media and travel writers may not always come into conflict. To help promote tourism in the country, governments may have set up agencies. For instance, the Singapore Tourism Board (STB) in Singapore was set up to promote tourism as a tourist destination and develop tourism as an industry, facilitating tourism related business in Singapore. They encourage the development of a few attractions such as the River Safari and the Integrated Resorts (MBS,RWS). The iconic structure of the MBS has therefore drawn the attention of media and travel writers to write positive reports on visits to these attractions in Singapore as they are made more aware of the destinations. Governments of the countries have also largely used media to promote their country as a destination of travel. As such, there may not be conflicts with different groups if the interests of the governments as well as media and travel writers are in common and are both seeking to promote tourism in the country.



International organizations that promote tourism can also come into conflict with governments. International organizations such as the WTO (World Tourism Organization) actively promotes the development of sustainable tourism. Environmental and social guidelines are provided to governments minimize the impacts of tourism. However, often, these guidelines may come into conflict as they could limit the opportunities of development of infrastructure and facilities in the country and are not adhered to in countries whereby promoting tourism development is key to the growing economy.

However, International organizations can also work hand in hand with governmental organizations. For example, international organizations such as the OECD (Organization for Economic Co-operation and Development) tourism committee and the UNWTO can work with governments. The former works primarily with governments as well as international organizations such as the UNWTO and the International Labour Organization to promote tourism as a tool for national growth and job creation. It works with a total of 38 member countries, majority of which are developed countries such as the UK, Japan and South Korea. The latter, however, works primarily with private organizations, which also work with the governments to promote sustainable tourism and development as a tool for poverty reduction, job and business creation and has 138 member countries. Hence, governments and international organizations, can work together to achieve their goals in promoting tourism.

In conclusion, conflicts between groups are inevitable due to different interests of the groups. However, conflicts can be managed and minimized if the groups have a common goal are willing to cooperate to work together to promote tourism.



5ai)

Severe shaking was closer to the epicenter, generally within a range of 20km. It was also concentrated on the main built up area. The pattern of shaking was more evenly distributed outside the main built up area. Shaking could still be observed within 45km of range. Though there was a shaking observed to be as close as 5km to the epicenter, it was not the most severe shaking experienced in Christchurch.

5aii)

Generally, the impact of earthquake on people in the built up area would be higher than those outside the built up area. The built up area, being located nearer to the city center will experience a higher damage due to the greater shaking as compared to the area outside. The higher population in the main built up area could result a greater impact due to the city being densely populated as compared to the sparsely populated area outside the city. In the built up area, structures built on saturated and unconsolidated sediments can be affected by liquefaction hence causing more damage relative to the people living outside the main built up area.

5bi)

The production of grain was not correlated to its use for biofuels. The production of grain was almost consistent with amounts above 400 and increasing or decreasing within the range of between +25 to -10. Its use of biofuels was however always on the rise with about twice the rise every 5 years. The increase in the use of biofuels is expected to be the greatest between year 2010 and 2015, with an increase of 89 million whilst the grain production falls by 10 million from 428 to 418 million. The greatest decrease in the total grain production was between 2000 and 2005 with a decrease of 25 and accompanied by an increase in biofuels of 26 million.

5bii)

The population in the USA was on a constant increase of about 16.5 million people every 5 years. As such, the demand for grains would be greater hence reducing the amount of food consumption available. In years 2000- 2005 and 2010- 2015, there might be a decline in the food supply. With the use of biofuels increasing, more grain would be used up, thus leaving lesser amount of food supply available. The high projected increase for biofuels in 2015 would mean that the government could have stock piled some of the grains to meet the demands of fossil fuels thus causing in the decline in food supply. As more farmland are converted into land for biofuels, the amount of land to grow crops will decrease hence causing a decline in the amount of food supply in the country.



5c)

“Excess food consumption is less important than inadequate food consumption for individuals and countries” How far do you agree? Give evidence to support your answer.

I agree to a large extent that excess food consumption is less important than inadequate food consumption for individuals and countries. Excessive food consumption can lead different health issues such as obesity, whilst inadequate consumption can lead to starvation and malnutrition. Both of which, however, lead to negative economic impacts

Excess food consumption leads to problems such as obesity. Consuming too much of food such as carbohydrates, proteins, minerals, vitamins and surgery snacks results in overweight problem of obesity whereby excess nutrients are stored as body fat. This increases the vulnerability to illnesses such as coronary heart diseases, high blood pressure, and diabetes, specific types of cancer, kidney and liver problems thus reducing the life expectancy of individuals. Obesity is a more common phenomenon in DCs than LDCs. For example, USA has about 45% obese adult population as compared with India 5% due to its affluence to indulge in sweet and fatty foods. Thus, as a result of the over consumption of food, individuals are subjected to degenerative diseases that could eventually lead to death, if not treated. An excess consumption is important as it leads to negative health impacts of the citizens of a country.

However, relative to the overconsumption of food, the inadequate consumption of food is more pressing and could lead to death over a shorter period of time. Consuming insufficient food can lead to major health problems such as starvation and malnutrition. Malnutrition is when the body does not get a balanced amount of nutrients to maintain healthy tissues and organ function. Inadequate nutrients will cause higher mortality rate and risk of adult chronic disease. Starvation is the state of extreme hunger from a severe lack of food. The body becomes skeletally thin and the organs become permanently damaged and may lead to death. According to the United Nations Food and Agriculture Organization (FAO) estimate, nearly 870 million people of the 7.1 billion people in the world, around one in eight, suffer from undernourishment between 2010 – 2012. As such, inadequate consumption is important as it threatens the life of individuals living in the country.

However, both excessive and inadequate consumption of food are equally important as both lead to negative economic impacts on the country. Obese adults are generally slow in movement and not mentally alert and this has led to a fall in work productivity, income and job promotion prospects. For example, obese employees at Duke University, USA fall sick more often and make more medical claims, making them less favorable for promotion to a higher salary scale. A decline in productivity would then hinder the growth and development of the country's economy as the workers are no longer as efficient. Furthermore, obese children also lose school days when they are ill and this hence affects their educational opportunities which leads to a cycle of having ineffective workers in the economy. Likewise, productivity of a country can be adversely impact if inadequate nutrients are consume. A lower efficiency is also



experienced as individuals have low energy level thus leading to more sickness and a decline in productivity and lower income due to inability to work as well as before. The economy of the country is adversely affected when there is low productivity as employees are no longer energetic and mentally alert. As such, too much or too little consumption of food can led to an economic setback of the country.

In conclusion, excess food consumption is less important than inadequate food consumption for individuals and countries. Excessive food consumption affects mainly people living in the DCs and can possibly be prevented with the encouragement of healthy lifestyle. Therefore, the impacts of excessive food consumption can hence be easier to handle with. However, in the inadequate food consumption is often uncontrollable due to ineffective governments in LDCs whereby poverty is rampant hence more difficult to deal with. The number of people facing the problem of malnutrition and starvation are high with impacts being pressing and life threatening causing long lasting impacts on individuals and the economy. As such, excess consumption, being less severe comparatively to inadequate food consumption, is therefore less important.



6ai)

- A: Rift valley
- B: Block mountain
- C: Fault line

6aii)

Features A,B and C were formed from the divergence of 2 continental plates. As the plates pull apart due to tensional forces, they are stretched, causing fractures and Feature C(fault line) to be formed. Feature A (Rift Valley) is a linear depression and is formed as the central block of land between the two continental crusts subsidies between the two parallel faults. The sections which are left standing beside Feature A (Rift Valley) is Feature B (block mountain).

6b(i)

Mount Mayon has a concave profile with steeper sides and gentle base as compared to Prestahnukur which has gentle sloping sides and a broad summit. Mount Mayon is of a greater height relative to Prestahnukur. Mount Mayon has alternating layers of lava and rock fragments as compared to Prestahnukur which is made of mainly lava. Mount Mayon also has a slightly concave profile. Vegetation is present on Mount Mayon but not present on Prestahnukur.

6bii)

Mount Mayon is a stratovolcano whilst Prestahnukur is a shield volcano.
Mount Mayon is formed at a destructive plate boundary with the convergence of the Eurasian plate and the Philippine plate. It is formed from successive eruptions of high silica lava and ash. After an initial eruption, the subsequent eruption ejects lava which covers the soft ash and prevents it from being eroded away. Over time, successive eruptions build a high volcano with a slightly concave profile.
Prestahnukur is however formed at a constructive plate boundary with the Eurasian plate diverging from the North American plate. The volcano is formed where low silica lava was ejected. As the lava flows out and spreads out over a large area before solidifying, the base of the volcano increases in side as lava acuminate and therefore is shorter in height.

6c)

The statement that Tsunami monitoring and warning systems have greatly reduced the impacts from tsunamis is true to a small extent. Though successful in reducing the impacts of tsunamis, these systems also have their limitations and its successes are also dependent on other factors such as the time of occurrence and the level of preparedness.

Tsunami monitoring devices help predict tsunamis. They are often linked to warning systems which are activated to warn people about the occurrence of a tsunami, allowing more time for people evacuate thus reducing the loss of life. For example, a



network of pressure sensors, seismographs and deep ocean tsunami detectors are located in Hawaii, USA to monitor and forecast the path of tsunamis. These devices are usually located in various parts in the world, near to plate boundaries which are vulnerable to tsunamis due to the movement of plates. As a result of the lead time created by these tsunami monitoring and warning systems, governments are therefore able to forewarn its citizens before the impact hence providing them with some time to get to a safer location thus directly reducing the fatalities and hence reducing the impact of the Tsunami.

However, Tsunami monitoring and warning systems have their limitations and hence might not be able to reduce the impact of the tsunami. Deep ocean tsunami detectors are prone to giving false alarms when the waves are high. For example, since 1948, 3 out of 4 tsunami alarms were false. This will hence make evacuation challenging as relevant authorities have to take time to certify the information prior to evacuating citizens, reducing precious evacuation time. A false evacuation could result in high costs, for example in Hawaii, an evacuation could cost up to \$68 million loss in profits and revenues. In addition, there is often little time to evacuate as tsunamis approach the coast at alarming speeds. Thus, even if tsunami monitoring and warning systems are in place, they might not be able to reduce the impact as they could provide inaccurate information, thus leading in an increased time taken and cost taken to evacuate people from the coasts to higher and safer grounds.

Although useful, Tsunami monitoring and warning systems might not be able to reduce the impacts of the earthquake as there are other factors affecting the damage caused. If Tsunamis were to occur at night, an evacuation would not be as effective as people would be less alert, hence leading to a greater damage even if the disaster could be predicted. An example would be the Chile magnitude 8.8 Earthquake that resulted in a tsunami in 2010 that resulted in the deaths of 500. Even with warning systems in place, authorities and people might be unprepared for a high magnitude tsunami, for example the Japan 2011 earthquake, thus leading to extensive damage. Hence, even with warning systems in place, the time of occurrence, which is uncontrollable and the level of preparedness in the country also largely affects the impact of the earthquake.

In conclusion, Tsunami monitoring and warning systems although can greatly reduce the impact of the tsunami, it has limitations and might not always be the best method to reduce impacts due to other factors that cannot be controlled. As tsunamis are formed from offshore earthquakes, it may therefore also be crucial to use with earthquake monitoring and warning systems to reduce the damages caused.