

Examiners' Report
June 2016

GCE Geography 1 6GE01 01

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Introduction

The paper was successfully completed by most candidates; although there were a few responses where either the essays were very short or where there were incomplete questions 5 or 6. Those who wrote extensively beyond the provided lines tended to run out of time elsewhere in the paper, so this was not a good use of exam time. Some had already scored all 4 or 5 marks available so did not gain any additional marks.

Time management was an issue for many on the essays. Quite a large number of candidates wrote 3-4 pages for part (a) of their essay questions, but only wrote a page or so for part (b). This disproportionate use of time is very unlikely to achieve the best marks possible.

Candidates who had sketched brief plans tended to perform better (especially in the essay questions).

Question 7 was by far the most popular question (49%) followed by Question 8 (24%), Question 9 (17%) and Question 10 (10%).

Question 1 (a) (i) and (a) (ii)

(a)(i) A number of Advanced Subsidiary candidates could not identify east and west correctly.

(a)(ii) The vast majority of candidates gained the mark here, with "Drought" and "Wildfire" being the most common answers.

Question 1 (b)

Some candidates rephrased the wording of the question as their response, this approach did not score any marks. However, most candidates answered by explaining that increased frequency meant more people were affected and it also resulted in a shorter recovery time, and that greater magnitude resulted in damage to infrastructure or loss of life. Merely stating "more damage" was not sufficient. Some wrote very similar answers to both parts of the question, suggesting a lack of understanding of the concepts.

A number of candidates saw this as a continuation of the previous question on droughts, which was possible if they were able to explain why a more frequent or longer term (i.e. higher magnitude) drought was more likely to become a disaster. Earthquakes were probably easier to use as illustrative material, particularly for magnitude and the Haiti or Tohoku earthquakes were a useful example. Many only scored 1-2 marks on this question.

Candidates are advised to consider using examples on "explain" questions as the context often helps clarify the thinking and produce more focused answers.

Full marks were scored here.

(b) Explain how the risk of disaster can increase as a result of:

(4)

the frequency of the hazard

If a hazard occurs more frequently it is more likely to ~~cause~~^{be a} repeated risk to the population and will probably cause more losses. Populations from countries like the Philippines won't have time or money to rebuild after one hazard before experiencing the next.

the magnitude of the hazard

The bigger the magnitude of the hazard, the more damage it will have on a population. Haiti earthquake 2010 was magnitude 7 and caused 220000 deaths whereas a less strong hazard would not cause as much damage or loss of life.



ResultsPlus Examiner Comments

Marks were awarded for more losses due to the repeated nature of the hazard, and insufficient time/money for rebuilding.

In the second part of the response, marks were awarded for the idea of greater magnitude resulting in more human costs, with useful detail provided on the Haiti example.



ResultsPlus Examiner Tip

Examples need a detail or a specific link to the question. Here, both are included.

Question 1 (c)

Many candidates answered this question well. Most compared the groups: rich/poor or developed/developing or California/Philippines and focused on wealth, education, preparedness and infrastructure. This was acceptable, but better answers used a variety of case studies. Young, old and disabled people were only rarely referred to as groups. A useful approach was to consider how different groups within one country or city experienced a hazard. Mirror points were not double-credited both here and on other questions.

Full marks were awarded for this answer.

(c) Explain why some groups of people have a greater capacity to cope with disasters than others.

(5)

Wealth Education

Some groups of people have a greater capacity to cope ~~is~~ because they have a higher wealth. This means that they are more likely to live in well built houses that are able to withstand the effects of disasters. For example, in California ^{some} people live in earthquake ~~proper~~ houses which are less likely to suffer damage. On the other hand, people in the Philippines tend to live in densely populated ~~un~~formal housing that is more susceptible to damage. Some groups have a greater capacity to cope because higher wealth means that there is a good network of communication links. E.g. in California the extensive network of roads means people can be evacuated quickly and receive aid quickly. In richer nations such as California people are more likely to have insured property so it will be easier for them to ~~rebuild~~ houses.

(Total for Question 1 = 11 marks)

Some people have a greater capacity to cope because they are more prepared e.g. disaster bay in Japan means they know what to do in the event of a disaster.



ResultsPlus
Examiner Comments

Marks were awarded for a group defined by its wealth, and for the reasons that flow on from this. This provides communication links, which enable evacuation, insurance and disaster day training. The contrasts provided by the examples of California and the Philippines provide a valuable context for the comments.



ResultsPlus
Examiner Tip

The candidate has used the examples very effectively here to illustrate the contrasts between rich and poor.

Question 2 (a) (i) and (a) (ii)

(a)(i) Almost all candidates identified the correct answer here.

(a)(ii) Most candidates performed well on this question, recognising that darker ocean ice has lower albedo and therefore creates more absorption or less reflection. This enabled many candidates to score 2 out of a possible 3 marks. A number failed to make a third point, and this could have been linked to outlining positive feedback cycles, or release of carbon dioxide (not methane). Some gave accurate percentage figures for changed reflectivity. A small number of candidates missed the point of the question and wrote about rising sea levels as a result of sea ice melting.

This question appears easy, but many candidates lost marks through repetition or lack of clarity over the points made. The mean mark was 1.75 and it had one of the highest standard deviation scores on the paper. This example scored all 3 marks.

(ii) Explain how changes in sea ice extent may accelerate global warming.

(3)

The melting of sea ice results in the release of greenhouse gases such as CO₂, which add to the enhanced greenhouse effect. There is also positive feedback where reduced sea ice means reduced albedo, meaning less radiation is reflected back to space, meaning more is absorbed heating the earth up more and continuing to cause further melting of sea ice.



ResultsPlus Examiner Comments

Marks were awarded for positive feedback, reduced albedo, and the release of CO₂ as sea ice melts.



ResultsPlus Examiner Tip

Read your answer through to ensure you have written three clear points. Here there was only 1 mark available for either stating that open ocean reflects less light (or energy, or radiation) than sea ice, or for stating that more is absorbed.

Question 2 (b)

This was a well-answered question based on a well-understood part of the specification and most candidates scored 2 marks. Those scoring 1 mark tended to confuse glacial retreat with ice melting, which is a seasonal process. Most common answers were tree rings, ice cores and pollen analysis.

Question 2 (c)

Many candidates performed very well on this question; there were many well-revised and clearly expressed responses. A number of candidates missed the focus on "ecological" consequences and tried to explain how increased shipping through the NW passage would be the inevitable result of climate change, and some then went on to argue that this might have an impact on plant species and animals.

The unreliability and very recent nature of this change meant marks were not awarded for these ideas. Better answers highlighted examples of species change, treeline shift, food webs and the impact of invasive species, as well as the inevitable comments about lost habitat for polar bears. Permafrost melt was not credited as it is not linked directly to ecology, but loss of the tundra biome was a possible theme.

5 marks were awarded here.

(c) Describe the possible ecological consequences of continued Arctic warming.

(5)

Temperatures rising globally can cause northward migration of coniferous forests because they can't survive in hotter climates. Also, if temperatures rise by 1°C, the Greenland ice sheet would melt ~~causing due to~~ causing a 7m rise in sea level. This causes species, such as polar bears, to migrate northwards. As species migrate, there is an increase of competition. For example, the Bowhead whale is adapted to live in the North of the Arctic with no fin but as Orca whales migrate north, they survive better with a fin as the sea no longer has ice, causing ~~food~~

(Total for Question 2 = 11 marks)

~~webs~~ to a change in food web. Additionally polar bears need ice to hunt and survive so species start to become endangered. Finally, new intrusive species are created, such as the Spruce Bark ~~beetle~~ beetle, due to rising temperatures



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Examiner Comments

Marks were awarded for northward spread of coniferous forest (better than "trees move north"), migration of species such as polar bear, increased competition between bowhead whale and orca (described in detail for an additional mark) and introduction of a named "intrusive" (credited as invasive or alien) species.



ResultsPlus
Examiner Tip

There was some well-revised information in this response which went beyond the polar bears to which many candidates referred.

Question 3 (a) (i)

Some candidates did not score any marks as they described the fact that this was a recycling strategy which led to more recycling. Most popular answers included a reduced need for landfill sites, lower resultant gases and a smaller need for new resources.

This response was awarded both marks.

3 Study Figure 3.

(a) (i) Suggest **two** possible benefits of the **new** waste collection service.

(2)

- 1 It means not all the waste is just dumped at once onto a landfill site
- 2 Can separate easily and reduce processing time and costs



ResultsPlus Examiner Comments

Marks were awarded for less waste going to landfill sites and for sorting, reducing time and costs.



ResultsPlus Examiner Tip

No marks were available for saying that the service enabled more recycling to take place. The new service is a recycling service.

Question 3 (a) (ii)

Most candidates wrote about variations of time/space/cost and these were often, but not always, developed into too complicated/don't understand/can't be bothered themes.

Few explored the opportunities available via the "green strategies such as recycling" question to consider a wider range of issues. Those who started discussing wind power quickly gained a second or third mark.

This is an excellent answer which scored 3 marks.

(ii) Suggest why some householders and businesses may disagree with green strategies such as recycling.

(3)

Often waste is shipped to countries such as China to be recycled, as China recycle most of our paper and plastic. This means that fossil fuels are burned to provide fuel for the transport and this releases greenhouse gases such as CO₂. The energy required to recycle is still very high, and people may think we should try to reduce our consumption ^{instead,}



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Examiner Comments

Marks were given for the environmental costs involved in shipping waste to China, using fossil fuels. Also, the argument that some think a better solution would be to reduce consumption in the first place.

Question 3 (b) and (c)

(b) Almost all candidates successfully identified Carbon Dioxide. A few may have not read the question correctly and were still thinking about landfill so selected methane.

(c) This question also revealed a lack of understanding of the requirements of an "Explain" question. Many candidates merely asserted that various states / groups had different points of view rather than gave any reasons as to why these different points of view might exist. Many, for example, mentioned lack of agreement at Kyoto/Paris, but did not explain what the issues might have been. Successful answers identified reasons such as differing stages of development, high cost of mitigation strategies and population growth (this last shows the clearest correlation to growth in CO₂ emissions).

This response was awarded 4 marks.

(c) Explain why global agreement on actions to reduce greenhouse gas emissions is difficult to achieve.

(5)

it can be difficult to achieve as not everyone wants to participate. for example ^{180 countries joined} the Kyoto protocol in 1992 in order for developed countries to reduce emissions by 5%. However, the USA and Australia did not commit because they believed it would have an impact on ~~their~~ their economics. Furthermore, ^{they believed} newly industrialising economies such as China and India are not taking part because ^{they} ~~it~~ it would halt their economic development ~~but~~ but they are considered to produce 60% of greenhouse gases. USA do not believe it is fair. Additionally, Canada ^{went over the amount} of carbon they could emit so they were ~~the~~ \$14 billion in debt so they opted out. The ^{biggest} producers are not involved so reducing the emissions is difficult.

(Total for Question 3 = 11 marks)



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Examiner Comments

Marks were awarded for lack of agreement linked to economic impacts, resulting in lack of participation linked to Kyoto (1+1); also for the comment about the USA seeing the approach as unfair. There is a final mark for the point about Canada withdrawing because of the imposed fine.

Question 4 (a) (i) and (a) (ii)

(a)(i) Almost all candidates successfully identified Asia as the correct answer.

(a)(ii) The most popular answers were cheap labour and wealthy customers, plus one other point. Many candidates gained 3 marks out of 4, losing a mark perhaps because they had not read through their answers to ensure sufficient points/examples had been made. Best answers made specific points e.g. minimum wages in Europe leading to higher production costs, or Special Economic Zones in China encouraging TNCs to locate factories. Some forgot to cover both sales and production. Preparation for this type of question in class would be helpful, as would underlining or highlighting key words in the question.

4 marks were awarded here.

(ii) Suggest reasons for the location of Samsung's production sites **and** sales sites.

(4)

and outsource
Samsung may choose to locate ~~most~~ of its production sites to regions in Asia e.g. China due to there being less restrictions and laws in terms of manufacturing. Furthermore cheaper labour could attract them to set up factories and facilities. Also China is a growing market and there is more demand for and chance for their products to grow markets causing Asia to have the highest number of sale sites as well. More developed regions in Europe and North America are also large markets for technology. This is probably why there are a lot of sales sites set up there.



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Marks were awarded for production site locations linked to fewer regulations and laws, and availability of cheap labour. For sales sites, credit was given for mention of the growing market in China and the large markets in developed regions for the product.



ResultsPlus Examiner Tip

Use underlining/highlighting to identify the key phrases in the question. Here "and" is emboldened to remind you that both aspects must be covered for full marks.

Question 4 (b)

There were many good answers to this question, and there were many ways to score marks. One or two candidates repeated the question, and others did not begin answering the question straightaway, wasting time. Simply naming a TNC is not exemplification, and merely describing suicide nets or environmental problems did not answer the question. High scoring candidates were able to use these facts to illustrate economic or social disadvantages, for example the health implications of smog/air pollutants or over use of water, and the stress of repeatedly working long hours.

Basic answers used low wages, poor conditions, and often named examples but with limited explanation or extension. Some better scripts included comments about culture, footloose TNCs and water shortages, using Coca Cola as an example. There were few MEDC examples.

A significant minority of candidates covered advantages or did both, though the question clearly stated that disadvantages only were required.

5 marks were awarded here.

(b) Using examples, explain the social and economic disadvantages TNCs bring to the countries they choose to invest in.

(5)

Apple are a TNC that invest most of their manufacturing in China.

Social disadvantages:

Highly unethical to pay people barely anything to work in harsh conditions for many hours. Poor conditions in sweat shops has led to many people becoming unwell or even taking their own lives.

Economic disadvantages:

Workers on very low wages (Total for Question 4 = 10 marks)

means consumer spending is low which slows down local economies.

Large TNCs may take over high street local business, such as McDonalds in India and China, could force small scale food restaurants out of the market.



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Examiner Comments

This candidate has created a structure for the mini-essay, reminding themselves to write about both social and economic disadvantages.

This enabled the candidate to write effectively about relevant ideas, and cover low wages (unethical), poor conditions/hours for work/ pressure leading to suicides, the issue that large companies are outcompeting small stores, exemplified by reference to McDonalds. There is no detail about Apple but this example is clearly helping provide the background to the ideas stated.



ResultsPlus
Examiner Tip

The Point, Evidence, Explain and Link (PEEL) structure worked very well for this question and was used effectively by some other candidates too.

Question 5 (a) (i), (a) (ii) and (a) (iii)

(a)(i) This was generally answered correctly.

(a)(ii) Many candidates did not appear to understand this question as so few were correct. Basic maths skills such as calculating a range (here of fertility scores between two dates) are vital for Geographers and will be required in the new specification. Whole groups from some centres answered this correctly suggesting that some candidates are taught it and some are not. Many seemed to calculate the range from the date at the start of the line graph to the end of the time period rather than between the maximum and the minimum as was required here. This was an understandable mistake but those who remembered their GCSE Maths skills knew what they should be doing.

(a)(iii) There were many correct answers here, a considerable improvement since a similar trend description question was asked in the past. There were many ways marks could be scored, but it is important to remind some candidates that correctly reading data from the graph to support any one point is a good way to earn a third mark. However, repeatedly quoting several pieces of data is not a good idea as only 1 mark was available.

This example of a response to (a)(iii) scored 3 marks.

(iii) Describe the trends in TFR from 1938 to 2012.

(3)

The trend fluctuates throughout the years but it reached its lowest in 1977 at ^{approximately} 1.70. TFR peaked in 1947 after WW2 reaching 2.7 but peaked again in 1964 reaching 2.9. Overall the trend has increased slightly.



ResultsPlus Examiner Comments

1 mark was awarded for each trend identified (lowest point/two peaks, slight rise overall). There is also a mark awarded for use of data to support the answer.



ResultsPlus Examiner Tip

This type of question can be practised at the start of a lesson to summarise previous learning or introduce a new topic.

Question 5 (a) (iv)

This question was one of the most poorly answered on the paper, and many candidates missed or misunderstood the command word "Explain". The previous question had asked for a description of the trend, and a second virtually identical question would not be asked. There were also many who did not take into account the specified date range, writing about the post-war baby boom amongst other things. Those who did answer it properly did well, mentioning the 2004 A8 migrants from fertile age groups, though a third mark was harder for most to obtain. Most common were higher birth rates in migrant families or fertility treatment.

3 marks were awarded for this response.

(iv) Explain the trend in TFR from 2000 to 2012.

(3)

Since 2000 there has been a slowly increasing TFR, this is because there has been a large amount of immigration especially from Poland and other European countries. These migrants have been predominantly young, and so in the reproductive age band and so many of them have had children, additionally they have come from cultures which tend to have larger families, and so they continue to have a large number of children within the UK.



ResultsPlus Examiner Comments

Full marks were given for migration from A8 country (relevant time period) of fertile aged migrants, from cultures where larger families are common.



ResultsPlus Examiner Tip

Check whether a description or explanation is needed.

Question 5 (b)

This straightforward question was not answered well. Many candidates repeated the fact that they could use "family history" without detailing what this could be. Restating the question without amplification or illustration will not score a mark. The most commonly discussed was the census, followed by family trees and speaking to older relatives. The nuance of changing population structure was lost on some candidates, but there were many who were able to identify family size or number of children as being one of the most useful pieces of information. Migration ideas were not relevant here unless linked to changed numbers of children or life expectancy (which was rarely seen).

4 marks were scored here.

(b) Explain how family histories and other records can be used to investigate the changing population structure of the UK.

(4)

Family trees can be investigated. It is clear that post-war "baby booms" means population increased during these periods (e.g. ^{around} 1917). This would mean grandparents would have many siblings, some even 6 or 7. This can be compared to ^{new} generations (average of 1 or 2 siblings). Birth certificate records from hospitals can also be investigated. These would show the birth rate (number of births per 1000 people per year), this can be compared to recent census data / CEF (Cates).

(Total for Question 5 = 12 marks)

grandparents many siblings
(family trees)
birth certificate records
many more births.
demographic
& transition model



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Examiner Comments

This is a strong answer; family trees are linked to grandparents/ siblings scoring 2 marks, and birth rates are linked to census data (a further 2 marks).



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Examiner Tip

Avoid repeating the question in the answer. This one gains 1 mark in the first two words, and stays well focused on the question throughout.

Question 6 (a) (i)

Most candidates successfully identified Italy as the correct answer.

Question 6 (a) (ii)

This apparently straightforward question led many candidates to score fewer marks than might have been expected. A few confused positive and negative net migration, and some wrote very similar points for each part of the question, for example low wages/high wages. "Better wages" and "more job opportunities" were not sufficiently clear for an Advanced Subsidiary exam answer, and as the question examined compulsory case studies (East-European migration and social migration to southern Europe) more precision was required. Good answers covered the following ideas: economic crisis in Greece and elsewhere, high minimum wage in the UK, Syrian/Libyan migrants to Italy, warmer temperatures in southern Europe and A8 migration allowing free movement.

This response scored all 4 marks.

- (ii) Using examples of countries from Figure 6, suggest reasons why they have experienced:

(4)

negative net migration

countries such as Poland & Greece are experiencing negative net migration, due to the lower standard of living and wealth in these countries. E.g. average wages are only £800 a month in Poland & 1 in 5 are unemployed. Countries such as Greece & ^{Spain} ~~Greece~~ are facing debt, so a low standard of living, causing negative net migration

positive net migration

Countries such as Germany and Italy however are experiencing positive net migration as they are much wealthier countries with higher standard of living. They may have also encouraged immigrants to fill labour shortages, eg in the 1950s-1970s in Germany, they accepted turks to fill labour shortages. Now 1.7m turks living in Germany. Many of these countries are also part of EU allowing free movement of people from the EU into their country.



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2 marks were scored in each section.

In the negative net migration section, there were marks for low average wages and high unemployment, with additional point on debt problems in Greece.

Positive net migration was explained by reference to labour shortages, and free EU movement.



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Examiner Tip

This question asked for examples to be used from the graph. Make sure you always read the full instructions in the stem of the question. This candidate makes realistic comments about at least five countries from the graph.

Question 6 (b)

There were a number of candidates who missed the key SOURCE instruction, despite it being in bold, and gave a detailed response for host countries, usually the UK. This question was generally well answered but many candidates failed to achieve full marks because they only included negative consequences. Most candidates sensibly used examples from the compulsory case studies of Poland/Eastern Europe/UK, or UK/Spain. The answer required both positive and negative consequences to be included, though a balance between these was not expected.

5 marks were scored here.

(b) Explain the possible socio-economic consequences of population movements for **source** countries in Europe.

(5)

Countries such as Poland have experienced a shortage of workers, due to out-migration to the UK. Also, birth rate has fallen due to the break-up of families and fewer people of reproductive age. However, in 2006, they received €3.45 billion in remittances ^{from} the UK, ^{contributing} ~~encouraging~~ economic growth. Also, in the UK, there has been a reduction in elderly people, as many have moved to Spain, but sometimes elderly people return for healthcare, increasing pressure on the NHS. Also, construction jobs are created in Spain for new houses being built, so the UK economy loses out.

(Total for Question 6 = 10 marks)

TOTAL FOR SECTION A = 65 MARKS



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Examiner Comments

Marks were awarded for shortage of workers, fall in birth rate, family disintegration, the positive point about remittances and loss of elderly people in the UK.



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Examiner Tip

Remember that both consequences and impacts are likely to be positive as well as negative, so include both unless specifically told not to.

Question 7

Part (a)

Candidates were asked to make sense of a multiple bar-graph showing the impacts of different hazards on different continents around the world. There were two foci in the question: cause and scale. The ability of candidates to derive data from the figure was not particularly strong, and work in class in decoding this type of graph is a valuable skill and a good way to start a lesson.

Candidates were often able to identify the contrasting nature of hazards in Asia and America, offering ideas about plate boundaries or economic development as explanations for the graph. Less able candidates failed to make reference to the graph. More able candidates explicitly quoted data from across Figure 7, wrote about both foci and had clear information about the causes of different hazard types in different parts of world. The very best candidates also used detailed examples to illustrate the contrasting impacts, and some weaker answers mentioned Pinatubo and Northridge.

Knowledge of the continents was variable, with few going beyond California for “the Americas” (ignoring central and south America entirely) and Africa being written about as if it were one country.

While candidates seemed to understand that economic losses are low in Africa because most countries there are LEDCs, many stated that there were no tectonic hazards in Africa, seemingly unaware of the presence of the rift valley and its associated volcanoes. The low level of economic loss from drought in Africa confused many candidates who did not seem to be aware of the sheer scale of social loss this can bring to subsistence farmers, while still experiencing economic losses.

Part (b)

This question is from a familiar part of the specification and allowed use of the compulsory case studies of the Philippines and California. These were not the only case studies possible, and indeed a fuller understanding of global patterns of geophysical hazards was expected for the highest level. Weaker answers were typified by a simple description of California or the Philippines, or by noting that the presence of plate boundaries resulted in geophysical hazards. Others confused hydro-meteorological for geophysical and explained drought and flooding. However, most candidates correctly focused on earthquakes, volcanoes and also expanded their essay to include landslides and sometimes tsunamis. As the question included “risk”, human factors were relevant but some wrote about nothing else, limiting their score.

Better responses contrasted frequency and intensity of earthquakes and volcanoes at different plate boundary types, explicitly referring to processes (e.g. subduction, pressure/release), and in the very best showing how other factors created complex hazard types including secondary hazards (e.g. La Nina bringing heavy rain and creating the kind of saturated land needed for landslides in SE Asia).

Candidates who reached Band 4 tended to explore aspects of increased risk linked to sound geographical location, sometimes establishing patterns across the globe.

Like all 15 mark questions, candidates who had revised specific details of examples tended to perform better.

Part (a) of this response scored 10/10 marks and part (b) scored 14/15 marks.

Chosen question number:

Question 7

Question 8

Question 9

Question 10

(a) Economic losses vary between continents, the most coming from Asia at \approx \$1050 billion, and least coming from Africa with little more than \approx \$10 billion.

The cause of economic losses from natural disasters is because of the distribution of different hazard types. For example the South-east Asia lies on the Pacific 'Ring of fire' which has a series of destructive plate boundaries (i.e. Philippines - Eurasian) which cause earthquakes like in the Philippines 1990: 7.7 (richter scale). African countries lie on very few plate boundaries and so experience less. The same is also true about the economic loss in the USA, mainly from storms as lies in the perfect location (above 5° latitude, no shear winds...) to experience frequent cyclones - i.e. Hurricane Katrina 2005 which cost \$108 billion. Finally the cause of economic loss from flooding varies as Asia suffers from monsoon seasons - which yearly see produce floods, whereas Europe suffers from

depressions created by the Gulf stream - is
Gloucestershire 2007 which cost £3.2 billion.

The scale of economic loss can also vary depending
on human vulnerability, preparedness etc. ~~Asia~~ An
Asian country like the Philippines would be called
a disaster hotspot on the basis of having a low
GDP (\$3500) - and therefore a low capacity to cope
- as well as suffering from a variety of hazards
which repeatedly weaken infrastructure. Although the
buildings may cost less, it can still cost a lot eg.
\$90 million infrastructure damage after Typhoon Haiyan
2013. However, this effect is amplified in on HIC
where land and buildings cost more to replace. In
the 1998 floods for example, California lost \$200
million of agricultural land, equating the total in
the Philippines 2013 Typhoon. The same is true in
Europe, which doesn't suffer from lots of disasters
however is the 3rd most expensive continent in
terms of losses due to harmful weather study and
people.

In Conclusion, the scales and scale of economic loss
varies largely on different continents because of factors
described.

(b) Risk is the probability of a natural hazard happening in combination with the 'exposure to risk', of it becoming a disaster.

Some countries lie on plate boundaries, which means they are more prone to violent earthquakes. For example the Philippines lies on ~~the~~ a destructive plate boundary with the Eurasian plate, and so in 1990 had a 7.7 Richter scale earthquake that killed approx 1600. California lies on the San Andreas transform plate boundary so suffers also. Countries like the UK lie on very minor faults - lines, if at all, so ^{have} ~~are~~ less risk of earthquakes.

Some countries are at risk of volcanic eruptions, some due to lying on plate boundaries like above and others from 'magma plumes' below the earth's lithosphere. On the Juan de Fuca - North American plate boundary are the Cascade Mountains including Lassen Peak in California. Hawaii is a volcanic island chain formed by a volcanic plume, so also naturally suffers from volcanic risk (Mauna Kua) on its main island. However, it is less in these US states (GDP \$60,000 per capita) as the exposure to risk is higher. The risk element means however

vulnerability, i.e. Mt. Pinatubo's eruption in the Philippines that killed 1600 people, as is on LIC with \$3500 GDP per capita.

The risk element can also come from the distribution of the population, i.e. Although Lassen Peak erupted in 1915, no one lived in the area and so there were 0 fatalities. Japan on the other hand has a population of 120 million all on a small set of islands. The sheer number of people living on the coast, combined with living of a fault boundary, gives it a high risk of Tsunamis, evident in the March 2011 Tohoku 9.0 earthquake that sent 40m waves to Japan's eastern coast.

A final geographical hazard is landslides, which when there is an overlap between vulnerability, terrain, weather and geology can pose a risk. i.e. 3000 were killed in Haiti in 2004, as a result of Hurricane Jeanne, but largely due to landslides from excessive deforestation (25% forest to 2%), means it is more likely to occur. Areas with high afforestation levels have greater interception and therefore less likelihood of landslides.

In Conclusion a combination of factors like human vulnerability, location, distribution of people etc can be held responsible for why some locations are at greater risk of geo-physical hazards.



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Examiner Comments

- (a) Level 3 – This is a great answer, although not quoting data it clearly uses ideas from the graph. There are several conceptual comments based on use of Figure 7.
- (b) Level 4 – This excellent essay covers almost all the hazard types but lacks detailed process knowledge; it has good use of appropriate examples.



ResultsPlus
Examiner Tip

Use exemplars you have studied wherever appropriate in these essays, both in part (a) and part (b).

Question 8

Part (a)

On the whole this was answered well but there were very few exceptionally good answers. Most candidates alluded to, or actually referred to, the resource, and most conveyed the idea of "high emissions low impact/low emissions high impact" effectively. In some cases this was well-explained using examples from the resource, and higher achieving candidates referred to specific examples from their own knowledge. Most candidates commented on why the impacts could be seen as unfair with some detailed reasoning, using contrasting examples. There were generally too few reasons given however, and exploration of the contrasting impacts was similarly limited.

In many answers, there were frequent general, descriptive comments holding back marks to 4/5/6 out of 10.

Part (b)

Candidates who selected this question seemed to know their information in depth, and some examiners commented that this was the best answered 15 mark question on the paper. Most were able to provide a fair explanation of the causes and comment on timescales. Candidates' knowledge and recall was very impressive in many cases, especially with regards to the Milankovitch cycles, sunspots and volcanic eruptions.

A few candidates misinterpreted the question and referred to human causes along with natural causes, but they were in the minority.

At the low end the answers were very descriptive, merely a list with a few facts.

ENSO cycles were not frequently used as a cause, and sometimes were not done well at all.

Part (a) scored 9/10 marks and part (b) scored 14/15 marks.

Chosen question number:

Question 7

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8.

which releases 7.9 tonnes of CO₂ per person

(a) OECD ~~countries~~ countries such as the UK and the US contribute most to climate change because our population has a very large average carbon footprint. But because these countries are very rich ~~and~~ ^{they} have the money to afford to adapt to the consequences of global warming such as ^{adapted by the things barrier} sea level rise and increased frequency of storms and flooding. ~~LEDC~~ LEDC countries such as the Philippines contribute ^{0.9 tonnes of CO₂ per person} to the least to climate change because they have a very low GDP so there are little cars or polluting factories. But they are impacted the most by global warming because the ^{frequency} of certain natural hazards such as cyclones and droughts is increasing and they can not afford to adapt to the changes so they suffer from massive economic losses and deaths. The LEDC countries ~~should be better~~ would have a very small impact on global warming if they attempted to mitigate climate change as they produce very little greenhouse gases in the first place. But the main polluting countries could spend ~~of~~ 5% of their GDP on mitigating climate change and it would have a profound effect on slowing down global warming, this would benefit the LEDC. But, the rich

Countries do not choose to do this because it would not benefit their economy short term, adapting to climate change may cost 20% of our GDP by 2050. It is therefore seen as unfair because the countries that contribute most to global warming that have poorer countries most can afford to mitigate ~~the~~ the global warming but most do not do because it is not in their economic interests.

b) ~~The~~ The Milankovitch cycles are natural fluctuations in the Earth's orbital eccentricity. Every 98,000 years the ~~sun~~ Earth's orbit will change from being eccentric, to ~~be~~ circular, this changes the amount of radiation we receive from the sun as we get further away, which means we go through cold glacial, and warm interglacial periods. But scientists say that this affect will only change Earth's temperatures by 0.5°C , but glacial periods can be as much as 5°C colder, so this indicates that there are positive feedback systems such as ~~melting~~ ^{melting} ~~ice~~ ~~which~~ ~~are~~ or freezing sea ice which also contributes to the cooling in a glacial period. The Earth's axis "wobbles" in its tilt from 21.5° to 24.5° every 44,000 years, this changes the distribution of ~~the~~ solar radiation hitting the ~~Earth~~ Earth and can therefore ~~also~~ change the climate and also attribute to positive feedback systems. This axial tilt also changes the contrast between ~~the~~ winter and summer as they depend on the axis of the Earth as it orbits around the sun. Natural events

Such as volcanoes which release sulphur dioxide and carbon particulates into the atmosphere cause a cooling effect. Such as Tambora, which erupted and caused the "year without a summer" because the amount of particulates in the stratosphere from the eruption ^{be-ment} meant less solar radiation could reach the Earth as it was reflected back into space. The eruption of Pinatubo in the 19th century cooled Earth's temperatures by ~~up to~~ $1^{\circ}\text{C} - 2^{\circ}\text{C}$ for ~~3~~ up to 3 years after the eruption through the same process. Meteorite impacts can also cause global cooling through extra particulates being spewed into the stratosphere from the impact. A meteorite impact is ~~also~~ thought to be the cause of the extinction of the dinosaurs 65 million years ago because of the impact the meteorite had on the climate. Sunspot cycles happen every 11 years and change the solar output of the sun which means less or more radiation can hit Earth and affect our climate. The sun went through an especially active period between the 1400s and the 1700s which is often thought to be the cause of the medieval warm period. It also went through a very inactive period where there were many sunspots, this is also thought to be the cause of the little ice age.



ResultsPlus Examiner Comments

(a) This is a Level 3 answer, with a wide range of ideas, including a clear understanding of the concept of "un-fair". There is a good use of terminology but the use of the figure is restricted, hence 9 marks not 10.

(b) This is a Level 4 answer, with a wide range of detailed causes given, covering different timescales. However, a couple of errors restricted the mark to 14/15 (e.g. dating of Medieval Warm Period).



ResultsPlus Examiner Tip

Choose your essay question carefully. It is often best to look at the (b) sections and make your choice based on these.

Question 9

Part (a)

The resource for this part of the question was clearly quite challenging for some candidates. Most took a general approach to the source and identified an increase in flows between major regions of the world. Many candidates simply sought to explain these changed flows by explaining that they were associated with globalisation, but did not necessarily explain the underlying processes or the social, economic or political changes across the world that might have led to this. The growth of the Chinese market was mentioned by many.

Part (b)

This essay was approached in different ways, and most answers did look at both "on and off" and had some structure. Higher scores were obtained through examining specific countries rather than a simple LEDC/MEDC contrast. Focus tended to be on the same examples, with Gambia, Ghana and North Korea dominating the "off" and China the "on", though knowledge about each of these varied in depth and accuracy. Gambia, for instance, is not landlocked. Some over-generalisations were made in relation to Africa (e.g. all switched "off"). Depth of explanation/ exemplification, as always, was the key to success with some candidates doing well by focusing on a narrower range of reasons but explaining them well.

Part (a) of this response was awarded 8/10 marks and part (b) 13/15 marks.

Chosen question number:

Question 7

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a) Globalisation is the process where countries trade more and sell / exchange more products. It involves air and transport, TNCs and various other factors.

Trade between Asia, particularly India, and the USA have dramatically increased (0.10-0.26 GDP, to >1.00), this is due to the birth of a Transnational corporations and the process of outsourcing. This is due to lower transport costs and the birth of containerisation. Containerisation allows more efficient trade between countries. Furthermore the rise of Asia and its development has caused TNC's to be encouraged to invest into these markets. Countries and benefit due to lower production costs.

The rise of the BRIC nations has allowed more trade flows to occur also such as Brazil ^{Brazil} ~~America~~ and USA. This is most likely due to car manufacturing in Brazil and the fact that severely isolated have moved abroad as more developed nations such as the UK have moved into

The quantity increased the tertiary industry.

Moreover globalisation has in a very reduced the development gap, more trade flows between Africa and China since 1980. This is due to neo colonialism and the need for China to become more resourceful and does this by investing in the sector petrol industry in Africa.

Furthermore the birth of low cost airline travel has allowed people to travel to various places and share knowledge and business can do more global deals as accessibility has increased rapidly since 1980. We see this with the "Daily World" effect and Australia truly with more centres in the northern hemisphere as journey times have decreased and costs.

The middle east and the demand for energy has also resulted in more trade flows as they are selling oil to developed nations and the rapid development of offshore and cities e.g. Mumbai is a shining series.

Overall we trade due to the increased globalisation catalysed by MNCs.

b)

Tuned off or tuned on is dictated by many different facts from politics to security, it is a consistency of many different facts.

Privacy can maybe switched off due to censorship this is apparent with China and social media as well as North Korea and its total disengagement to internet and trade. It can be argued that China is tuned on due to it being a "Global Workshop" but that the Foreign direct investment is not solely determined whether its switched on or off. North Korea, population of an estimated 50 million (not allowed to know) is totally switched off as it has no exposure to other countries and the internet lacks basis such as electricity.

Locate can also be essential in the switching on/off of a country e.g. Rwanda is landlocked and therefore does not have a lot of trade with many other countries such as the UK, whereas India on the other hand is by the coast and therefore can trade with other countries it is estimated that India uses 8% of its GDP to trade with Abu Dhabi in

the middle East keeps as switched on along with many other nations.

On the other hand, countries can also have switches on a country along with other e.g. The 'Tubi's and 'Hubs' in Russia. Switched during TWC's formation within the nation keeps being it switched off, because will not work if the country doesn't have the capacity to cope or won't be productive. In this case our deputy does look this.

Further governmental includes via trade also determine on or off. E.g. the joining of trade blocs such as the E.U. which free trade and migrate benefits all. Other national countries included such as the UK which has been switched on due to this. Further exclude in ^{products} ~~countries~~ will switch on a nation such as Lithuania and Volkswagen who now is being a car hub in Europe.

Lastly the development of a country, MEDCs can expand across strips / airports and

Kenya can become travel hub by Gatauke
airport or landway. Further investment is needed
for MNCs to enter as well as business
as usual.

Overall I feel politics and relations the
most important reason for a country being situated
on or off an the other level in a older era
location may have been more important but now
accessibility to the internet is better and the
sharing of knowledge and ideas occurs regardless.



ResultsPlus Examiner Comments

(a) This is a Level 3 answer because it identifies 3 flows, and goes on to identify complex factors (e.g. neo-colonialism). Although the reasons are quite wide ranging, they lack detailed explanation for a higher mark.

(b) This is a Level 4 response, with a wide range of factors (albeit they are mainly political!). These are considered with detailed reference to examples and a brief concluding sentence that examines the one they think is most important, taking the answer into Level 4.



ResultsPlus Examiner Tip

Study the resource carefully and use data from it to structure and illustrate your answer.

Question 10

Part (a)

This produced some very good answers that explained a range of "pull" factors, though for weaker answers "push" tended to be ignored or dealt with in a superficial way. The best responses linked these to globalisation processes as well as to the struggle to survive in rural areas. Only a few candidates considered natural increase, which has long been recognised as a key driver in megacity growth. Overall, there was limited use of the graph and even less use of the image to support answers, and few made comparisons between cities, or considered developed world megacities.

Part (b)

"Challenges" could be approached in different ways. One successful structure was to consider the economic, social, political and environmental challenges in making cities more sustainable. Another option was to focus on the issues/problems facing the cities such as housing or water provision, or pollution/poverty/transport against a backdrop of continued growth and low government investment. Good answers dealt with the "challenge" element well, and were often based on in-depth studies of one or two cities. Weaker answers tended to discuss the problems/actions rather than address the concept of challenge and sustainability. Mumbai was most often used as a case study. Too many weak answers were generic without even a mention of a named city.

In this example, part (a) scored 7/10 marks and part (b) scored full marks, 15/15.

Chosen question number:

Question 7

Question 8

Question 9

Question 10

Firstly a megacity is a city with more than 10 million inhabitants. The growth of megacities such as Karachi can be seen in many pull factors.

Mumbai, for example, has seen huge growth in the last 30 years. The city has one of the largest slums in Asia (Dharavi) which is a home to 1 million people in a square kilometre. Many people have migrated to Mumbai from rural areas as there is more job opportunities in Mumbai and the jobs pay higher wages than rural jobs. This is known as rural-urban migration.

Furthermore the reputation of Mumbai - through films such as Slumdog Millionaire and the huge Bollywood industry, means many people migrate looking for wealth and fame.

Furthermore cities in China such as Chong-Ching have experienced huge rural to urban

migration. This is because many TNC's such as Nike have moved their manufacturing into the city meaning there are more jobs available. These attract many young & workers who often have children who are left behind with their grand parents. These are known as 'China's forgotten children'.

From the graph, Karachi has experienced huge megacity growth from 5 million people in 1980 to 6.26 million in 2014. Looking at the source I can see many crowded vehicles with lots of people in them which increases megacity growth as huge numbers of migrants arrive each day. Mumbai currently experiences 800 migrants a day. Furthermore the infrastructure and buildings (housing) look well maintained which could be another reason why people are moving to Karachi.

In conclusion many megacities in the developing world have experienced rapid development because people migrate there looking for better jobs and opportunities in their lives. Sometimes there is so little space, huge slums are set up such as Dharavi in Mumbai.

b) Sustainable means ~~it~~ making something last for a long time or having something which is easily maintained and has low costs, for example low environmental costs.

LA faces several challenges in making the city megacity more sustainable. The PLAN (LA's sustainability plan) features some solutions to problems that LA has. Firstly the average car ownership to person ratio is a staggering 1.7 which means that rounded up, on average each person in LA owns 2 cars. This creates huge environmental problems and contributes to the horrendous smog that LA suffers from. Due to the geographical location ~~on~~ (trapped between the ocean and the Santa Ana mountains) and the horrendous air pollution a large ~~town~~ smog has engulfed LA and makes the city's environment incredibly unsustainable. Furthermore LA has highways with six lanes in, which heavily increase air pollution as the lanes allow for a greater number of cars to be in use at once.

Economically, LA has suffered from being a 'donut city'. This is where a large manufacturing industry in the city center has died and the workforce

have moved to the outskirts off the city looking for work. This leaves a huge hole in industry in the city center, hence the donut element. This problem has tried to be solved by the introduction of TNC's into the city center, which have caused some economic growth.

Socially, Los Angeles faces huge sustainability problems. Firstly LA has a huge number of homeless people in the city, which causes social problems as they have no home or are out of work. However, charities in LA such as OFF the streets have helped get homeless people into work and OFF the streets in LA. There are also huge housing problems in LA. LA has experienced a huge growth in its "Bourgeois" such as Riverside and Beverly Hills and the area of LA and its bourgeois now covers 55 times the area of London. Such huge influxes of people to its suburbs lead to housing shortages which make the city socially unsustainable. Finally LA is not culturally sustainable. There is a large racial tension between African Americans in areas such as Watts and Compton and the Los Angeles Police. Frequent riots (such as in 1954 over the beating of a black African American by police) has led to huge cultural splits between African Americans

and Police. ~~Re~~ Rifts between the two groups and general unity of races and cultures has been helped by huge popularity of black ~~A~~ Basketball stars in LA such as Magic Johnson, Shaquille O'Neal and Kobe Bryant. Many areas in LA have huge foreign populations such as Little China (Chinese) Compton (African American) and San Maria (Latin American). This causes challenges as conflict can occur ~~from~~ between the different cultures and races.

In conclusion LA has serious problems it needs to address to become more sustainable. The smog is appalling, ~~and~~ there is a lack of housing and there are underlying racial tensions. However with the use of the LA PLAN and understandings between culture and races, LA ~~is~~ in my opinion, can become a thriving megacity.



ResultsPlus Examiner Comments

(a) This is a sound Level 2 answer, which covers pull factors and other megacities (Mumbai) but has a limited range of reasons. There is no consideration of the reasons why people are forced out from rural areas or of the higher fertility patterns often seen in developing world megacities.

(b) This is an excellent top band answer, which scores full marks. It includes a very wide range of challenges, and also has value judgements about the scale of some of these problems. Detailed place knowledge is used to provide evidence in support of the argument. It scores 15 marks despite only using one megacity as there is exceptional analysis of the challenges.



ResultsPlus Examiner Tip

Remember to use contrasting examples as it is then much easier to make meaningful remarks at the end to assess and draw your ideas together.

Paper Summary

Based on their performance on the paper this year, candidates are offered the following advice:

- Read the command words on each question carefully. This year a significant number of candidates confused "describe" and "explain" on Question 5 and lost up to 6 marks.
- Also check any emboldened words on the question as these are there to make sure you focus on particular words (e.g. **source** on Question 6(b)) or two elements (e.g. sales **and** production on Question 4(a)(ii)) that need to be included.
- Curitiba is not a megacity. Current population is approximately 1.8m. Whilst it gives many ideas for improving urban sustainability, it needs to be used carefully in answering questions. For example, you could explain why it might be difficult to apply strategies that were successful in Curitiba in a larger city such as Mumbai or Manila.
- Repeating the words of the question will not score marks. For example in Question 5(b) there were no marks for discussing "family history", as this was the question. You needed to select an example (such as oral history or family photographs), and then suggest what might be learnt from these.
- For part (a) on essay questions, try to think of at least two reasons to explain the resource. Describing the data is useful but you need to go beyond this to suggest reasons for what you have described.
- Many candidates wrote more for the 10 mark question than for the 15 mark essay. This is unlikely to be a good use of exam time.
- To achieve high marks on part (b) essay questions, make sure you add a mini-conclusion, either offering a comment about which factor/criteria is most important, or introducing a new theme to provide a counter-argument to the main theme of the essay.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

<http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx>

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