

Examiners' Report
June 2013

GCE Geography 6GE03 01

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June 2013

Publications Code UA036003

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Introduction

The Unit 3 Contested Planet examination used the topic Superpower Geographies as the basis for the Section B issues analysis, and the regional setting of East Asia. This being the case, there was no Superpower Geographies question in Section A. In January 2013 the Section A Superpower Geographies question was answered by 28% of candidates (the most popular Section A choice). This time Section A question popularity was approximately as follows:

Question 1: Energy Security = 30%

Question 2: Water Conflicts = 26%

Question 3: Biodiversity under Threat = 17%

Question 4: Bridging the Development Gap = 15%

Question 5: The Technological Fix? = 12%

This is in many ways the 'normal' pattern, where question popularity seems to correlate with numerical order. As in the past, answer quality varies little between questions although Bridging the Development Gap often yields some very cerebral answers and The Technological Fix? is often polarised between weak and strong performance with little 'middle ground'. Candidates seem to make a positive choice to do the Biodiversity under Threat question on the basis that they are relatively confident with physical process terminology. Overall the quality of answers was good, and most candidates seemed prepared for the exam in terms of content and conceptual knowledge and understanding. Most candidates finished the exam paper and timing issues were rare. When they were an issue it tended to be Question 6(c) which suffered. There is evidence that many candidates complete Section B first. Pleasingly, there were very few scripts containing rubric errors. The number of candidates scoring very low marks (Level 1) was low.

Specific comments on Section A

It is perhaps worth considering why candidates achieve Level 2 marks in Section A rather than Level 3 or Level 4.

In the 10 mark data stimulus questions there are a number of possible reasons why candidates might achieve 6 marks, but not 8 marks:

- Spending too much time describing rather than explaining / suggesting reasons. An obvious example is describing the changes in energy 'mix' on Figure 1, rather than suggesting why the changes have occurred.
- Missing a key part of the Figure. Examples include explaining only two of the three parts of Figures 3 and 5 or omitting to mention the change per capita energy use in Figure 1.
- Over-reliance on case studies; this was most often seen in relation to Figure 2 where some candidates were determined to describe in detail the Three Gorges Dam, the Aral Sea or California's water issues whereas the question demanded an explanation on a global pattern ie a world overview not a locally specific answer.

- Not moving beyond the figure; while detailed case studies rarely help in these 10 mark questions, examples, facts, figures and concepts do – candidates could have considered another type of trade in Question 4(a) eg cotton or coffee, or another type of technology in Question 5(a).

In the 15 mark '(b)' questions, some of the reasons candidates achieve 8 marks rather than marks in the 9-15 range (Level 3 and Level 4) include:

- Answers only consider part, not all of the question; examples include 'local' but not 'global' in Question 3(b) or 'environmental' but not 'social and economic' in Question 5(b).
- This error has a knock-on consequence, as by considering only part of the question it becomes very difficult to evaluate or assess ie by comparing, contrasting and moving towards a judgment.
- Some key words are misinterpreted ('domestic' in Question 1(b)) or their meaning is not known ('unforeseen' in Question 5(b)) despite being in the specification.
- Very detailed case study knowledge is provided but this is unselective and poorly applied to the question; this afflicted Question 2(b) where candidates often left it up to the examiner to decide what was relevant rather than doing the job themselves.
- Only presenting one side of the argument eg that domestic energy resources are important in Question 1(b) (but not why they might be less important) or stating that megacity migration does not help rural poverty in Question 4(b) (but not considering how migration or rural development might alleviate rural poverty).
- A final evaluation / assessment in the form of a brief conclusion is missing; this is required to return to the question and answer it directly.

Section A

Question 1 Energy Security

Question 1(a)

Figure 1 illustrated the 'energy transition', a conceptual diagram of how total energy use, and the mix of energy sources, might change as countries develop economically. Candidates were asked to explain the changes shown.

Crucial to a successful answer was to recognise that Figure 1 has two components to it:

- A shift from biomass fuels, through fossil fuels and eventually to renewable energy sources.
- A rapid increase in total energy use per person, followed by a decrease at very high levels of economic development.

Many candidates explained one or other of these changes (usually energy 'mix') but not both. Very few candidates provided an explanation of why total energy use per person 'dips' at high levels of development. Explanations for changing energy mix were generally sound. Many candidates explained that pre-industrial economies were likely to be agricultural and lacked any need for fossil fuels, or if the need existed the grid systems to distribute energy did not. Rising demand for fossil fuels was usually explained in relation to industrialisation with the example of China often cited, along with the UK's experience in the 19th Century. Increasing levels of capital and technology were used to explain the shift towards nuclear power. Most candidates explained the increasing desire to be 'green' in post-industrial society and often linked this to the Kyoto Protocol or similar targets. Uncommonly seen were explanations of the 'dip' – when this was seen it was most often explained by a shift to tertiary and quaternary industry due to deindustrialisation and a move towards energy conservation and highly efficient buildings. Many explanations of the changes focussed rather narrowly on costs only ie as countries develop they can afford more advanced forms of energy generation.

The overall message from this question is that candidates must look at all of the information they have been given, not just one part of it; the colours on Figure 1 were only one part of the data that required explanation.

This is the opening part of a Level 3 answer to Question 1(a).

a) when a country is at the pre-industrialisation stage the energy use per person is at its lowest and the diversity of energy sources is limited to just burning biomass and oil. This is because the country has yet to develop, so industry is limited and the main employment sector would be agriculture. This kind of primary employment requires very little energy and the GDP per capita of a country focused on agriculture would be low. A low GDP means the population would have less disposable income, there would be less cars and not all of the population would have access to electricity. Therefore the overall energy usage of a country at this stage of the energy transition is lower than at any other stage. As a country starts industrialising their energy usage starts to increase and the energy sources start to diversify. This is due to an increasing reliance on the manufacturing industry which requires a larger amount of energy than agriculture.



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Examiner Comments

This example wastes no time in getting on with the answer and mentions per person energy use and the mix of sources in the first sentence. A good range of reasons is provided, such as the dominance of primary employment, lack of access to electricity in the pre-industrial stage and increased demand due to growing manufacturing industry.



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Examiner Tip

Always explain all parts of the Figure in full paying particular attention to any changes or anomalies you can identify.

Question 1 (b)

This question focussed on the importance of domestic energy resources in terms of energy security. A significant issue for some candidates was their interpretation of the phrase 'domestic energy resources', this refers to energy resources found within a country, which can be fossil fuel or renewable resources (or potential).

Some candidates interpreted the phrase as meaning only fossil fuels and a minority interpreted it as energy resources used within the home.

'Domestic' energy resources contrast with foreign energy resources. Candidates who went down the 'energy used in the home' route misinterpreted the question, as they focussed on end-use consumption not the energy resources themselves.

Most answers could use examples to illustrate the importance of domestic resources such as in the Middle East, or oil and gas in the UK in the past. Answers which considered the extent to which domestic energy resources are important were rarer. In general there was a lack of assessment in answers to this question. Candidates who did consider this aspect often made some very good points relating to:

- The technology and capital needed to access resources like oil and gas and the fact that in some countries eg Nigeria and Sudan, this was lacking such that these countries failed to gain the full benefit from their domestic energy resources.
- International energy markets mean that countries like the UK, USA and Japan can generally rely on secure supply (although there are risks), especially as they are wealthy countries that can afford to buy energy on international markets.
- Many foreign supply pathways eg between Canada and the USA are politically secure so the risk to supply disruption is minimal.

Some common errors were seen once again. Many answers alluded to the UK's reliance on Russian gas. In reality this is minimal as domestic North Sea and imported Norwegian gas is much more important. Unconventional fossil fuel resources in North America (tar sands, oil shales, fracking, Arctic oil) tend to be confused in terms of locations and whether or not extraction is planned or actually taking place. Many candidates seemed to believe that the global energy market is controlled by nation states. Whilst these do exert significant influence eg through OPEC and state-owned companies, privately owned TNCs are also significant.

This extract is part of a Level 4 answer to Question 1(b).

From the danger of disruption, many countries resort to radical energy alternatives to try and avoid dependency and develop their domestic reserves for a secure future. One such alternative is shale gas. Shale gas is a new form of natural gas fossil fuel, and has been found in reserves in the USA and the North of England. However, the importance of domestic reserves in energy security may be overridden by the environmental impacts, especially in MEDC's such as the UK. The process of 'fracking' is violent, and involves controlled explosions 150 m below ground and letting the gas seep through the fissures. Firstly, locals and organisations such as Greenpeace worry that fracking poisons the water quality, as reserves can be close to aquifers. Secondly they worry about ground stability. This does have the potential to stop shale gas from improving energy security as a domestic source of energy and suggests that environmental factors - currently - take precedence. And therefore, energy security from domestic reserves is not a high priority.



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Examiner Comments

The candidate links the search for energy security to the exploitation of domestic shale gas reserves, but recognises that environmental issues could prevent these resources being used. This extract is evaluative because it considers the pros and cons of using shale gas.



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Examiner Tip

Try to turn questions 'on their head'. In Question 1(b) the focus is on how far domestic energy sources are important to energy security, but this can be turned around to consider reasons why these sources are not important.

Question 2 Water Conflicts

Question 2 (a)

Figure 2 was a world map showing levels of water stress, from regions with low stress to those with extreme stress. The question asked for physical and human reasons that might explain the pattern. While the question was answered reasonably well by many, there were few very good answers for a number of reasons.

- Many candidates ignored the global distribution shown, and instead focussed on a few regions or case study locations within countries eg southern California, the Aral Sea; this generated a rather narrow, case study focussed response.
- Physical reasons usually focussed on the idea of 'heavy rainfall' or 'drought' with no further explanation (eg persistent high or low pressure areas) of why certain areas received more rainfall than other areas.
- Some factors, especially geology, were not related to the distribution shown on the map but rather stated in only general terms.
- Some answers incorrectly explained that areas close to the equator have low levels of precipitation; this error has been seen on this exam paper before.
- Candidates identified a 'north-south divide' pattern or discussed high level of water stress in 'Africa'; neither of these interpretations can be justified on the basis of the actual pattern on Figure 2.
- There was confusion over economic water scarcity; this explanation is a poor one when applied to Sub-Saharan African countries shown to have low water stress levels.

Physical explanations often focussed over-heavily on temporary El Nino / La Nina events rather than the more permanent precipitation patterns dictated by the global circulation. That said, reference to the ITCZ and seasonal / monsoonal shifts were discussed by many and some mentioned the role of Hadley Cells and other features. Human factors were generally dealt with more successfully; however there was a tendency to want to shoe-horn case studies into an answer which required more of an overview explanation of the distribution shown. Overall, answers were a little disappointing as explaining patterns and distributions on world maps should be central to the skill set of an A2 candidate. An obvious structure was to explain, briefly, each (or most) of the stress levels. This was rarely seen. A more random approach was common, to the detriment of a logical explanation.

This is the start of an answer to Question 2(a). The answer gained low Level 3 marks.

a) High water stress seems to be within the areas of the world that are most developing (in the south of the North-South Brandt line).

Areas such as the US and China have medium water issues. In the US, California in particular there are problems over water here due to the physical environment. Areas such as the high plateau experience little rain because of the high pressure systems travelling over America. Also areas such as Death Valley gets very little rain due to the rain shadow effect causing the ~~water~~^{air} to rise at the mountains, cool and condense causing it to rain out over the Sierra Nevada. It is also affected by the El Niño where it brings huge drought and then periods of heavy rain due to the direction and the strength of the wind. The Californian region has human stress on the water too. There is irrigation of 1.4 million hectares of land, increased urbanisation of the desert sunbelt area and also increased transboundary issues as Mexico is polluting the water so badly that some tributaries cannot be used for



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The answer begins to analyse the map, but is a little side-tracked by a supposed north-south divide on Figure 2. Nevertheless some physical reasons are outlined to explain areas of medium water stress, with some detail and the answer also considers some human factors. Note that 'El Niño' should be 'La Niña'.



ResultsPlus Examiner Tip

World map patterns and distributions need to be interpreted carefully and in a structured way; using the map key as a structure is often a good way to proceed. Be careful not to 'see' patterns which don't really exist, such as a north-south divide.

Question 2 (b)

This part of the question focussed on the advantages and disadvantages of different technologies to help ensure water supplies in the developing world. Answers showed that there were a number of potential pitfalls:

- Examples or case studies needed to focus on the developing world, so case studies such as the Hoover Dam and schemes in Israel, Spain or Australia were not acceptable.
- Schemes are not the same as technologies; many candidates named a number of different schemes but never stated what the technology being utilised actually was eg The GAP Project.
- Several commonly seen examples were actually focussed on privatisation of water supplies and its impacts, with no mention made of technology at all.
- Many examples used did not focus on water supply, but rather on energy supply or flood control. The Three Gorges Dam, Akasombo Dam and many other dams are primarily about securing renewable energy not water supply.

In general intermediate and appropriate technology examples were better focussed than the large schemes used, as they tended to focus more closely on water supply eg pumpkin tanks, tube-wells etc. Some answers transferred 'hard and soft engineering' language from Unit 2 into this question; this was usually unsuccessful as it was unclear how a tube-well or similar is an example of 'soft engineering'. Many of the examples / case studies of dams were very much along the lines of 'everything I know about' with very little selection of information relevant to securing water supplies. In addition, many supposedly contrasting technologies showed no contrast at all eg case studies of three different dams. As has happened in the past, the Aral Sea case study was often confused and used in an inappropriate way ie the recent attempted restoration touted as securing a fresh water supply for thousands of people. There was a tendency to describe and explain, but not evaluate ie come to a conclusion about which water supply technologies were the best. Stronger answers argued that successful technologies were likely to be those that were place-specific. Some candidates argued that what was successful in LDCs was likely to be different to that needed in NICs. Answers with a strong contrast eg high-tech, high cost water transfer schemes, desalination and intermediate technology tended to produce stronger evaluations which demonstrates the importance of selecting appropriate examples.

This is part of an answer to Question 2(b) that gained Level 2 marks.

HEP for the region and it also powers the local aluminium industry. Dams are disadvantageous because they have short life spans. Therefore they are unsustainable for the future. Also a lot of money is needed to maintain them. This is an economic ~~is~~ problem for developing countries.

Water harvesting is a good way of securing water supplies in developing countries because it is an intermediate form of technology therefore all individuals are able to use it. and can profit from it. It is also more environmentally friendly than using irrigation for agriculture. Furthermore it is less wasteful than irrigation. An example, is in Uganda where small-scale farmers collect rainfall from their roofs.



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Examiner Comments

This is quite a typical answer. It considers dams, but from the perspective of HEP rather than water supply. Water harvesting is also outlined, but as with the HEP dam example the locational detail is weak. This answer presents a number of technologies but in a rather generalised way in terms of their advantages and disadvantages.



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Examiner Tip

Avoid long-winded introductions; start with a definition of a key word from the question then get down to answering the question directly.

Question 3 Biodiversity under Threat

Question 3 (a)

This question, about how various threats impact on the physical processes within ecosystems was competently done by many candidates. Most were able to identify how the three threats (exploitation, nutrient overloading and alien species) might affect ecosystems. Some reference was often made to nutrient cycling in terms of biomass removal (deforestation) and the impact of this on litter production and soil health. Soil erosion and hydrological cycle impacts were often explained. A significant number of candidates provided a good explanation of how eutrophication can negatively affect ecosystems and their food webs – especially in an aquatic context. Examples were most often used with regard to alien species. Many candidates were aware of the impacts suffered on the Galapagos Islands and the red squirrel and Chinese mitten crab were often referred to.

The weakness of many answers was in uncertain and inaccurate use of ecosystem process terminology. This was often used partially correctly or correctly in relation to some processes but not others. Weaker answers tended to become confused about the impact of fertilizers, arguing that it was positive or drifting into explanations of farming. An important aspect of this question was the need to explain all three threats in a reasonably balanced way, rather than focussing in detail on one eg alien species and neglecting the other two.

This is part of a Level 3 answer to Question 3(a) that gained Level 3 marks.

One of the main ways in which anthropogenically (human) altered nutrient levels (usually caused by industrial fertilisers and pesticides) can affect physical processes of an ecosystem is by causing eutrophication, a process whereby increased nutrients run-off into water deposits such as rivers and cause an increase in plant growth. The increase in the inorganic ~~egg~~ parts in turn causes an increase in algal growth known as an 'algal bloom' which then infests the surface of the water preventing photosynthesis. This disrupts the whole ~~food web~~ trophic pyramid of the ecosystem, and disrupts ~~support~~ Supporting Services (such as nutrient cycling, which allow life to be supported in the area) which in turn affect Provisioning Services such as availability of fish for fishing.



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Examiner Comments

This answer uses terminology very well, so that a lot is said with relatively few words. The precise use of terminology shows understanding as the processes are clearly explained.



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Examiner Tip

There is no short-cut to learning physical process terminology; it is important in terms of writing precise answers.

Question 3 (b)

On the face of it, this question was relatively straightforward as it asked for a comparison of global and local conservation strategies and a judgment to be made of which is likely to be more successful. In reality though, many candidates struggled to address the global component of the question. A number of candidates slightly turned the question in their own minds to make it a contrast between top-down and bottom-up conservation approaches, which is not the same focus as global versus local.

In many cases, local conservation approaches were outlined in detail and with confidence by many candidates. Detail was often provided and there was a good consideration of strengths and weaknesses of these local approaches. Many examples were used successfully including St Lucia's SMMA, Campfire, Udzwunga, Daintree, the Galapagos and many others. In terms of global schemes these were often mentioned in passing – if at all. Often there was a very generalised discussion of global approaches but no named examples; many candidates failed to even name a global approach such as CITES, Ramsar or the work of the WWF. Some responses did however provide detail on global schemes and this often led to very good evaluations. Global frameworks were argued to be good at awareness and fund raising, and often linked to local schemes as the local provided the 'hands on' conservation required. There were some answers along the lines of 'local good, global bad'. This is a very polarised approach, and to access the upper levels of the mark scheme candidates needed to provide a more balanced argument.

This is the concluding part of a Level 4 answer to Question 3(b).

Other global attempts such as CITES fails as the trade of illegal goods continues to supply the rising demand from the growing Chinese middle class. Also the UNEP aims to double world funding for biodiversity protection by 2015 which can aid the small scale strategies that are more successful at conserving biodiversity.

Small scale conservation schemes are vital to the protection of biodiversity. They are adopted to ~~each~~ each individual ecosystem to ensure that the number one priority (development) can be made sustainable, as seen in Malaysia and Bwindi National Park. However, global action also needs to take place in protection from the impacts of climate change, the impacts of which will be borne disproportionately by the poorest whom are the least equipped to cope. Strong governments and IGO help from the UNEP will ensure small scale strategies ~~success~~ are successful and conservation will ~~come first~~ not be forgotten and the global development.



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This answer mentions CITES and UNEP as examples of global conservation strategies. This is followed by a clear conclusion which judges that both local and global strategies are needed – notice how reference is made to examples used in the main part of the answer as part of the conclusion.



ResultsPlus Examiner Tip

Read questions carefully and look out for 'double' key words like 'global and local' or 'costs and benefits'.

Question 4 Bridging the Development Gap

Question 4 (a)

Figure 4, about world trade in cocoa, has three aspects to it: a focus on the TNC manufacturers of chocolate products, a graph of world cocoa prices and a world map showing cocoa producers and chocolate consumers. All three needed to be referred to in a full answer. There were many good answers:

- Many candidates recognised the possibility of exploitation and dependency in the patterns, often linked to core-periphery and dependency theories.
- Some argued that trade imposed poor terms of trade on the cocoa producers, often as a result of import tariffs and the workings of trade blocs.
- The risks of price fluctuations to developing world cocoa producers were outlined by some.

Candidates' own knowledge was often used to illustrate the 'unfairness' of the trade system, such as the subsidies given to the US cotton farmers which effectively undermine the price received by cotton farmers in Mali. Equally fair-trade was often mentioned as improving the situation shown on Figure 4. Many candidates also recognised the positives in trade, albeit sometimes relatively small positives vulnerable to fluctuations. Many answers did link their thinking to the development gap, although weaker answers tended to omit this aspect. A minority effectively ignored Figure 4 and went in their own direction, often writing interesting things about trade but ignoring the basis of the question.

This is part of a Level 3 answer to Question 4(a), on how trade patterns influence the development gap.

The core regions have the facilities to add value & create high value products from the raw materials supplied by periphery regions but the periphery regions have no choice but to buy back the products at a higher price.

Trade can also be controlled through prices for example as fig 4 shows cocoa prices fluctuate regularly. In order to manage this large TNCs buy 'futures' so they know what price they will be paying. Small producing nations can then end up losing out when prices rise.

Subsidies are another way in which trade patterns can influence the development gap. Subsidies are issued by the WTO which is largely dictated by the USA so therefore subsidies go to ~~the~~ US farmers rather than Mali farmers (cotton) - this then eliminates competition and means the poor countries lose out as they are forced to drop their prices.



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This answer shows good understanding of the relationship between core and periphery regions, as well as the impact of price fluctuations. The candidate's own knowledge is used in terms of commodity futures and subsidies. The answer could use the data from Figure 4 more directly and subsidies are not 'issued by the WTO'; nevertheless this is a good answer.



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A good rule of thumb is that if there are numbers on a Figure eg a graph or data table, then you should quote some of these as part of your answer.

Question 4 (b)

This question, focussing on whether megacities are the best solution to rural poverty in the developing world tended to be answered in one of three ways:

- Megacities are bad; this type of answer tended to focus on the 'slums and squalor' aspects of megacities without any mention of positives, or rural areas. These answers tended to dismiss rural to urban migration out of hand, without consideration of the conditions in rural areas that might force people to migrate to try and achieve a better life.
- Megacities can be both good and bad; this type of answer considered how some megacities can pull people out of poverty but others simply transfer rural poverty to urban areas. Better answers compared different megacities eg immature ones such as Lagos to more mature ones such as Shanghai.
- Megacities can be either good or bad, but rural poverty can also be tackled at source.

The strongest answers took the latter approach. They considered megacities in detail but also made reference to rural areas and often provided examples of how NGOs can improve the lives of the rural poor. Some answers also considered rural areas in relation to remittances sent back to rural families. There were some very good examples of rural development schemes relating to farming cooperatives, health projects and water projects. This allowed some candidates to provide a genuine evaluation of megacities as a solution versus other rural based options. Some candidates should note that Dhaka is a city in Bangladesh, not India. In addition, many could note that not all megacities are the same.

This is part of a Level 4 answer to Question 4(b).

On the other hand however, to further highlight the fact that migration to megacities is not the best ~~to~~ solution to rural poverty is the fact that only 5% of the population of Dhaka in Bangladesh live in permanent housing. Those that have no other choice but to live in temporary accommodation suffer from poor environmental and subsequent living conditions. Recent data shows that 25% of the world's urban population

do not have access to adequate sanitation. Governments are not able to keep up with the fast pace of rural to urban migration and so are not able to quickly enough develop adequate housing or create more employment opportunities.

From the previously mentioned facts it is clear migration to megacities is not the best solution for rural poverty. Firstly it does not solve the issue of poverty in rural areas as those that do not migrate still suffer from inadequate infrastructure, education and employment opportunities. Instead increased bottom-up aid in rural areas could help tackle the issue of rural poverty through programmes such as RYDA which has been established in Uganda's rural districts of Kayunga. Furthermore projects in Tanzania such as a 'Breakfast Club' which have been targeted towards improving ~~nutrition~~ nutrition for school children so their education is more efficient.



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Examiner Comments

This extract considers the costs of migrating to megacities, in terms of poverty and poor environmental conditions, having previously considered the benefits. It then moves on to how rural areas can be improved thus considering the question from at least three different angles.



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Examiner Tip

Try to use words such as 'however' and phrases like 'on the other hand' as this is the language of an evaluative answer which is considering different arguments and perspectives.

Question 5 The Technological Fix?

Question 5 (a)

Figure 5 showed three different types of cooking technology and a 'problem' to provide context ie the reliance on biomass fuel in the developing world and the health problems associated with its use. It was important that answers focussed on this context, and not wider or global issues. Many answers spent far too much time considering the impacts of the three stoves on global warming, which is likely to be of little concern to those in the developing world using basic cooking stove technology. The three technologies were generally understood well, but there were one or two issues:

- Some interpreted the solar stove as being powered by solar PV, despite the information on the Figure, and hence claimed the technology was too expensive and advanced to be useful.
- Gas cylinders were sometimes claimed to be prone to explosion – something few candidates consider a risk when using their own gas-fired barbeques.
- There was a lot of consideration of the 'air miles' associated with gas stoves – again this is likely to be a peripheral issue to the end users.

Nevertheless understanding was generally good, and most answers considered all three types of stove. There were many good evaluations of Upesi stoves in terms of the benefits to the local economy and reduced fuel use in relation to deforestation and other issues. The location specific issues of solar stoves were also considered in detail. Weaker answers were those which 'missed' the contextual problem and / or slavishly copied the text from Figure 5 but added very little to it in terms of explanations of the advantages and disadvantages or their own knowledge of technology. Some answers clearly did not appreciate the level of poverty of people who use Upesi stoves or open fires on a daily basis.

This extract is part of a Level 3 answer to Question 5(a).

Solar stoves use the sun as a fuel source to cook food. This requires high levels of bright, direct sunshine which is not fine during the day as most developing countries have a hot, sunny climate but during the winter when the days are shorter, the possibility of cooking at night is eliminated so people are limited to cook and eat during the day. It is also a slow process, which means people would have to wait longer for food in order for it to cook properly. Increases the hunger whereas gas stoves cook almost immediately. However it is good for the environment as it uses a renewable energy source that doesn't release any emissions.



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Examiner Comments

The extract considers the advantages and disadvantages of solar stoves in a clear and sensible way. It goes a little beyond Figure 5 to discuss how the stoves might not work well in all conditions, but also considers the benefits. It could be more closely tied to the 'problem' shown on Figure 5.



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Examiner Tip

Make sure you consider all parts of the Figure. Figure 5 has three different cooking technologies; only discussing two would restrict your mark to a maximum of 7 out of 10.

Question 5 (b)

Success in this question hinged on a number of issues:

- The extent to which specific examples of technology were chosen, rather than generic processes eg 'industrialisation' or 'burning fossil fuels'.
- The extent to which costs were considered in economic, social or environmental terms or simply lumped together as 'costs'.
- The range of examples used; there were some answers which only referred to GM crops but did consider social, economic and environmental issues – however, these often detailed answers lacked evaluation in many cases.
- The degree to which the costs considered were actually 'unforeseen' in nature.

This last point is perhaps the most important. Whilst the terminology of externalities was often used, many costs that were mentioned were not unforeseen. An example is the Tata Nano. It has not come as a surprise to anyone that the rise of car ownership in India has led to increased pollution, congestion and accidents. These costs were known, and while they are relevant to the question they are not the unforeseen costs required to move into the Level 4 mark band. Stronger examples, with genuinely unforeseen costs included DDT, CFCs, GM crops and to some degree the internet and social media. There was much talk of 'cars' as a very general, unlocated technology although when set in a historical context the rise of CO₂ emissions made for a more convincing argument of unforeseen costs. Mobile phone health risks were often over-egged and some answers did drift into benefits having exhausted costs. Answers were variable, from outstanding to weak and over-generalised. This question also suffered sometimes from the 'and another example of a technology is...' approach; in other words a list with little detail and even less analysis of costs. Some candidates seemed to believe that large-scale reengineering has happened already and the world is dealing with the costs of numerous installed space-mirrors, artificial trees and ocean fertilisation.

This is part of a Level 4 answer to Question 5(b).

The gene revolution has also had economic costs. ^{GM} Genetically modified cotton seeds are 1000% more expensive than indigenous cotton seeds and must be bought each year. ~~The economic~~ This ~~is having~~ is causing farmers to get into debt in Maharashtra state India, there is a 'suicide belt' where over 1000 farmers commit suicide each month. This is a significant social cost of a technology meant to be beneficial, ~~and~~ and is because technology is

not improving the income for farmers.
Then in 1955, WHO introduced DDT
for use in malarial eradication
programme. DDT started being used as a
pesticide, but ~~a~~ This resulted in
biomagnification, with higher and higher
concentrations of DDT being seen
further up the foodchain. This had many
ecological impacts, for example, birds of
prey were no longer able to lay
viable eggs.

The use of chlorofluorocarbons in
appliances such as refrigerators also shows
unforeseen environmental consequences, as it
resulted in ~~the~~ ~~ozone~~ damage to the
ozone layer, and so use was stopped
in 1987 montreal protocol.



ResultsPlus

Examiner Comments

This example gives three well-chosen examples, DDT, CFCs and GM crops. The focus is very much on unforeseen costs and the terminology used is good; the answer could be a little clearer on economic, social and environmental costs although these are implied.



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Examiner Tip

Choose your examples and case studies carefully; this is best done by doing a brief plan before you start writing.

Section B

Specific comments on Section B: Issues Analysis

The issues analysis based in East Asia seemed to interest candidates and there were many very good answers, and some outstanding ones. The challenging topic of geopolitics and international relations was dealt with very satisfactorily by most. There was evidence of research in the pre-release phase, especially relating to the most recent tensions between North and South Korea in 2013. However, candidates did not become side-tracked by these issues as they did in relation to the Arab Spring in 2011. There was some evidence of cross-curricular collaboration as many candidates had a good grasp of the history of the region.

Question 6 (a)

This question asked candidates to explain why there are, and have been, tensions between superpowers and other countries in East Asia. Responses tended to fall into one of two camps: candidates **either** using the resources to explain the tensions presented, with a specific focus (sometimes narrow) on territorial disputes and ideological differences, with tensions not always being linked to superpowers or differentiation made between past and current **or** combining the research into the historical geopolitical issues with the information in the resources, to reach a balanced understanding of how past tensions have influenced the geopolitical alliances and issues evident in the region today.

Generally, candidates used the resource booklet to good effect. There was a marked difference between candidates who had obviously conducted their own research and understood the background to a variety of tensions, and those who simply used the resources that were provided. Generally, candidates were able to explain causes of tensions with reference to ideological differences, territorial disputes and resource conflicts. Most candidates were able to ensure their responses were up-to-date with reference to the recent 'sabre-rattling' from North Korea earlier this year.

There was a noticeable lack of reference to past tensions during the Cold War, with USA and USSR as the key hegemony, and the extension of these alliances in present-day East Asia. Higher level answers tended to incorporate a clear distinction between past and present tensions, with Cold War divisions explained and extrapolated to explain present-day patterns of power. Such answers also tended to include the specific language of superpower geographies, making the distinction between 'hard' and 'soft' power. Weaker answers tended to slavishly list and describe various territorial disputes.

Some answers were overly historical in nature, and essentially a narrative from the late 19th Century until the end of the Cold War, but with little reference made to current and on-going tensions.

This is part of an answer to Question 6(a) that gained maximum marks.

The Korean war of 1950-1955 was a time of violence within the cold war that ended up with North Korea and South Korea being split by the demilitarised zone. The Chinese back North Korea fight for communism however the capitalist backed South Korea by the US fought against this. Since then the South Koreans have tried to give aid and support to the North Koreans through the sunshine policy however this stopped in 2007 when the North Koreans shot down a South Korean boat that strayed into their territory.

Also there is conflict between Japan and China over rights of land in the Senkaku Islands. The Islands were handed over to Japan by the US in 1971 however the Chinese believe they are part of Taiwan that became theirs when they took over at the end of the first world war. This tension has brought in the action of the US, as they now have 27,000 military troops on one of the islands called Senkaku. Also it has caused Japan to form alliances with other countries such as Vietnam and the Philippines who already are in conflict with China over fishing rights due to the pollution from China's industry.



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Examiner Comments

The strengths of this answer are its focus on both past and current tensions and it is synoptic. Details about the sunshine policy and Japan's regional alliances come from research, but information from the resource booklet is also used.



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Examiner Tip

You must do some of your own research during the pre-release phase if you want to access the very top levels of the mark scheme.

Question 6 (b)

Many candidates approached this question successfully. A good number of candidates were able to assess the extent to which each of the four East Asian countries have the characteristics of superpowers, hence were able to access at least Level 3. The best answers tended not to pre-judge the answer ie 'it's China' but instead presented their evidence and gradually moved towards a conclusion. Weaker answers tended to take it as read that China was already a superpower instead of considering that country's status, strengths and weaknesses. Stronger answers tended to structure their answer thematically (military, cultural, economic, political etc) rather than by country. The latter approach tended to produce very long, rather broken up answers.

The data in the resource booklet was, in the most part, used to good effect and candidates identified a key conclusion that China possessed the most characteristics, especially economically and possibly militarily; and that North Korea was an isolated state yet with a focus on militarisation and nuclear weaponry. Some successfully argued that Japan possessed much strength but better answers were able to question Japan's economic credentials on the basis that its economic performance had faltered in recent decades. South Korea was often argued to be strong economically but with little global cultural influence, and perhaps lacking a 'critical mass' in terms of population size and resources. Others argued that Japan and South Korea rely too heavily on US support to be considered candidates in their own right.

It was noticeable that many candidates, having identified China as the key contender, did not identify those characteristics that could preclude it from superpower status – namely the rural-urban divide, GNP per capita, development levels, which are behind those of Japan and South Korea.

Weaker answers tended to rely, unselectively, on the data and thus produced answers which slavishly copied out the data and failed to apply it to the question. These answers lacked a conclusion. In some cases this style of answer was much more about how developed each country was, not the degree to which they had superpower characteristics. There were occasionally some silly errors, such as claiming that Japan has a 'small' population.

Interestingly, in assessing cultural aspects of superpower status, candidates displayed a narrow interpretation of cultural focus – most candidates measured cultural influence through the recognition of global TNCs and brands, ie a consumerist culture, rather than a wider cultural definition of music, literature, food, language, art, media etc (although K-pop and Psy's Gangnam Style made some regular appearances in the evaluation of South Korea's impact on the world).

This is part of a Level 4 answer to Question 6(b).

6) b) None of the East Asian nations can yet be classified as superpowers, but in the future, China looks to have the most potential for Super power status.

Starting with North Korea, this nation has very limited superpower characteristics. It has failed to globalise as the other nations have as shown in figure 8, so remains switched off and isolated from the rest of the world. It cannot hope to adopt Rostow's modernisation development model, due to its human rights abuses and the fact that it pours all of its capital into its military budget. One thing that can be said for North Korea, is that it has some degree of military hegemony and is a force

to be reckoned with. Figure 5 shows that it is East Asia's second largest military force, although this is still nothing when compared to the USA and China. Overall, North Korea is holding itself back with its censorship, isolationist policies and failure to join world organisations. It has a limited sphere of influence.



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Examiner Comments

This is a confident answer. It clearly states its position in the first 3 lines, then sets out to evaluate the credentials of North Korea. Military and economic factors are considered followed by a clear evaluation – note the direct reference made to Figures in the booklet.



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Examiner Tip

Your synopticity can be brief, such as the mention of the Rostow model in this answer; it does not have to consist of long, detailed examples in order to demonstrate that you are making links and thinking broadly.

Question 6 (c)

Answers to this question sometimes suffered from being the last in this section. Successful answers need to have a good understanding of what a sustainable population and resource consumption might look like, in order to be able to make a clear and supported judgment. A number of issues arose:

- China and Japan were sometimes 'lumped together' as if they were facing the same issues.
- There was confusion over ageing populations versus declining populations.
- The idea of 'trends' in the question was often overlooked.
- There was much talk of Japan's 'huge' ecological footprint, whereas it is low for a MEDC and is, in fact, declining.
- Interpretation of the population pyramids was sometimes confused.

Many candidates were able to identify that in terms of population, Japan was experiencing an ageing and declining population currently, and that China would experience this in 30 years. However, once stated, many candidates did not go on to fully explain why this was not a sustainable situation and why this would have economic and social costs in the future.

In terms of resource consumption sustainability, many answers tended to remain quite narrow, taking data from the resource booklet and generally making reasonable judgments. For example, references to Japan's heavy reliance on food and energy imports or China's reliance on oil imports. Often candidates stated useful facts but failed to synthesise information into a discussion of sustainability.

More successful candidates were able to use this question to demonstrate their breadth and depth of understanding, making a wide range of synoptic links. It also gave candidates the opportunity to develop ideas from the data given. For example, some candidates were able to identify the trend in daily protein intake in China, attribute this to an increasing level of meat in the Chinese diet and therefore explain how this trend would affect the demand for arable land and livestock feed.

This is part of a Level 3 answer to Question 6(c).

c) ~~China and Japan~~ Trends in population and resource consumption in China and Japan are very different; however they are both affecting the future sustainability of the countries; meeting the needs of the future without damaging the ability of future generations to meet their own needs.

Figure 14

Population trends 'Show that in both countries they have passed the demographic dividend. In Japan, there is a significantly aging population, with the average age being 44. The fertility rate is 1.27^(CIA factbook), meaning the population is shrinking ~~rapidly. The population is high and~~ In China, there is an enormous population, and due to the one child policy and high life expectancy there is potential for a huge aging population. Currently 160 million are over 60 (eastasia forum). For both countries this means there will be a huge strain on healthcare, and also pension funding crisis. There will also be a strain on the young to support them.



ResultsPlus
Examiner Comments

The answer provides a definition of sustainability and there is an early mention of trends. Good terminology is used eg 'demographic dividend'. The consequences of an ageing population are explained, although there is a tendency to lump China and India together.



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Examiner Tip

Try to identify key words from the question, and use these in your answer, such as the word 'trends' in Question 6(c).

Paper Summary

There were many good answers to the questions on this summer's Unit 3 Contested Planet paper in both Section A and B. Performance was similar to past series. Preparation for Section B was good and there was good evidence of synoptic understanding and research. Based on their performance on this paper, candidates are offered the following advice:

- Planning is important, but a balance needs to be struck between too little and too much planning; very detailed planning can eat into time which would be better spent writing answers.
- It is very important that candidates do not become side-tracked by one of the 10 mark '(a)' questions in Section A and write long, descriptive answers that gain few marks.
- Candidates who go into the exam with a set idea of which Section A questions they will answer can become unstuck by the 15 mark part '(b)'s if they have not read the '(b)' before they start answering the '(a)'; each 25 mark question is a 'package' of (a)+(b). They should ask themselves if they can complete both parts to a good standard; if the answer is 'no' they should consider another question.
- As has been said before, often a brief summative paragraph using evaluative language would be enough to lift some candidates out of Level 2 and into Level 3 in the 15 mark '(b)' questions in Section A. Simply describing case studies will not lift candidates into Level 3 or 4.

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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