

Mark Scheme (Results)

June 2016

Pearson Edexcel GCE in Geography
(6GE03)

Unit 3: Contested Planet

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.

SECTION A

Question Number	Question
1a	Using Figure 1, suggest reasons for the variations in people's attitudes to the different energy sources shown. (10)
	Indicative content
<p>Note that all of the resources shown are renewable/recyclable, not fossil fuels. Reasons for the survey results could include:</p> <ul style="list-style-type: none"> • HEP – viewed as reliable due to constant operation (baseload) although drought could be an issue, e.g. Hoover Dam, positive environmental score due to no emissions/waste, although loss of land could be seen to explain why the score is not higher than 73%; only 64% agreed it is a long term solution possibly due to physical restrictions on wider use, many sites already utilised. • Nuclear – viewed as fairly reliable (lower than might be expected? – impact of accidents possibly) as it is a baseload provider, but scores very low on environmentally friendly, possibly the perception of Chernobyl/Fukushima as wider radioactive waste issues – some might argue the score does not realistically reflect nuclear's low CO2 credentials; low long-term solution score could be explained by high costs, rejection in some countries (Italy, Germany). • Wind – low reliability due to physical constraints and fickle winds; it is seen as the greenest due to no emissions (but some might argue the bird, bats and landscape issues); the most positive long-term solution score due to well-developed technology, widely available and easy to build (more so onshore than offshore); noise issues. • Biofuels – scores are all very similar (might argue respondents were unclear what it is?) but also the food v fuel debate and issues about carbon emissions during production, i.e. it is not as 'green' as it first appears. <p>Credit the idea that since 2010, some types of renewables may have experienced a change in their score, e.g. increased reliability of wind turbines due to better technology. Credit other reasonable suggestions.</p>	

Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> • One or two reasons, limited details, may be unrealistic. • Refers to a narrow range of data, lacks support / descriptive without reasons. • Structure is poor or absent. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-7	<ul style="list-style-type: none"> • Some range of reasons, some with more detail than others. • At least two energy sources and different statements; occasional support. • Structure is satisfactory. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	8-10	<ul style="list-style-type: none"> • Range of reasons in detail: focus is on explaining variations/differences. • At least three energy sources and different statements with some support; may question the data. • Structure is good. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare.

Question Number	Question
1b	Using named examples, assess the costs and benefits of exploiting fossil fuels in technically difficult and environmentally sensitive areas.
	Indicative content

Technically difficult fossil fuels include shale gas/shale oil, tar sands, heavy oil and deep water oil. Environmentally sensitive areas include untouched forests, the oceans and pristine areas such as the Arctic and Antarctic among others. In some cases there is overlap, e.g. the ANWR: for L3 and above some recognition of both must be made.

Note that there is more to say about costs than benefits, but answers should cover both:

	Costs	Benefits
Technically difficult	<ul style="list-style-type: none"> High economic costs, e.g. deep water oil, West of Shetland. Not viable if oil prices are not high, risky for investors/TNCs. Increased risk of spills/accidents, e.g. 2010 BP Deepwater Horizon (also public reaction perception) Long, costly planning process against well-organised opposition, e.g. UK fracking. High energy and water costs to extract tar sands/shale oil/heavy oil – unsustainable carbon footprints. Risks stemming from disputed ownership, e.g. Arctic, South China Sea. 	<ul style="list-style-type: none"> Increased national energy security, e.g. the rise of shale gas in the USA. Increased export earnings, e.g. in Canada most of the Athabasca tar sands oil is exported, buffering the Canadian economy. Possibility of delayed peak oil/plateau oil so wider benefits to the global economy in terms of lower oil prices. Reduced dependency on traditional oil/gas sources especially the unstable Middle East.
Environmentally sensitive	<ul style="list-style-type: none"> Risk of public backlash/criticism from environmental organisations. Possibility of major damage to unique/pristine ecosystems, e.g. tundra, TRF, boreal forests. Loss of land rights by indigenous people, e.g. Arctic peoples, Amerindians. Opencast / strip mining for coal in India and elsewhere. 	

Overall judgment:

- Could argue that the benefits outweigh the costs on the basis that an oil-dependent world economy must be fuelled.
- Perhaps the environmental arguments are over-blown, or that technically difficult is acceptable but environmentally sensitive is too risky.

Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> One or two general costs, poorly supported / not focussed on Tech Diff & Env Sens. Structure is poor or absent. Explanations are over simplified and lack clarity. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-8	<ul style="list-style-type: none"> Limited range - mostly costs; case studies described but lacks application. Technically difficult / environmentally sensitive implied. Structure is satisfactory. Explanations are clear, but there are areas of less clarity. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	9-12	<ul style="list-style-type: none"> Some range of costs and benefits, but unbalanced; more than a detailed list of case studies; some attempt to assess. At top end, recognises technically difficult and environmentally sensitive are not always the same. Structure is good. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare.
Level 4	13-15	<ul style="list-style-type: none"> Genuine assessment with a clear judgement, case study detail supports the costs and benefits considered. Differentiates between technically difficult versus environmentally sensitive. Carefully structured. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are very rare.

Question Number	Question															
2a	Using Figure 2, explain the causes and consequences of the differences in water cost. (10)															
	Indicative content															
<p>Answers need to consider both causes:</p> <ul style="list-style-type: none"> i.e. why the water is the price it is <p>and consequences:</p> <ul style="list-style-type: none"> i.e. the effects / impacts of the water price. <p>Do not expect coverage of all cities, but there should be some balance in stronger answers, which may group the cities.</p>																
	<table border="1"> <thead> <tr> <th></th> <th>Causes</th> <th>Consequences</th> </tr> </thead> <tbody> <tr> <td>Copenhagen (developed world, high)</td> <td>High income country so people can afford to pay, but also may be the 'true' cost of water, i.e. to ensure water is returned clean to the environment; high costs to discourage waste. High demand, wealthy consumers so water companies charge high prices and make profits.</td> <td>Promotes conservation and reducing waste; could be seen to disadvantage the poor (but welfare help likely).</td> </tr> <tr> <td>Nairobi and Lagos (developing world, high)</td> <td>Lack of piped water supply, so people are forced to buy off vendors (middle-men taking a 'cut'), at inflated prices. Cheaper because no tax is paid.</td> <td>Economic water scarcity; lack of water leads to poor health and sanitation; inflated disease risks; less money for other things.</td> </tr> <tr> <td>Las Vegas, London (developed world, low)</td> <td>Legacy from a more water secure past; prices reflect cost of distributing water but perhaps not the true environmental cost. Physical limitations of supply i.e. climate.</td> <td>Promotes wasting water; may recognize this is risky in Las Vegas; water is affordable to most.</td> </tr> <tr> <td>Shanghai and Mumbai (developing world, very low)</td> <td>Prices likely to be subsidized, possibly to encourage use/win votes/keep urban populace happy. Few people have a piped water supply; cost to the poor might be higher from vendors.</td> <td>Improves sanitation and health, but risks becoming unaffordable for city government due to rapid urbanisation.</td> </tr> </tbody> </table>		Causes	Consequences	Copenhagen (developed world, high)	High income country so people can afford to pay, but also may be the 'true' cost of water, i.e. to ensure water is returned clean to the environment; high costs to discourage waste. High demand, wealthy consumers so water companies charge high prices and make profits.	Promotes conservation and reducing waste; could be seen to disadvantage the poor (but welfare help likely).	Nairobi and Lagos (developing world, high)	Lack of piped water supply, so people are forced to buy off vendors (middle-men taking a 'cut'), at inflated prices. Cheaper because no tax is paid.	Economic water scarcity; lack of water leads to poor health and sanitation; inflated disease risks; less money for other things.	Las Vegas, London (developed world, low)	Legacy from a more water secure past; prices reflect cost of distributing water but perhaps not the true environmental cost. Physical limitations of supply i.e. climate.	Promotes wasting water; may recognize this is risky in Las Vegas; water is affordable to most.	Shanghai and Mumbai (developing world, very low)	Prices likely to be subsidized, possibly to encourage use/win votes/keep urban populace happy. Few people have a piped water supply; cost to the poor might be higher from vendors.	Improves sanitation and health, but risks becoming unaffordable for city government due to rapid urbanisation.
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Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> One or two general comments on e.g. costs and their causes / impacts, e.g. on the poor Unclear on causes versus consequence. Structure is poor or absent. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-7	<ul style="list-style-type: none"> Some range of reasons for causes / consequences, but lacking depth/support or one done in depth/supported. Some reference to Figure and some understanding. Structure is satisfactory. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	8-10	<ul style="list-style-type: none"> Range of reasons for both causes and consequences. Reference to Figure and demonstrates understanding of why costs vary. Structure is good. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare.

Question Number	Question
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2b	Using named examples, assess the extent to which future water demand can be met by using sustainable strategies. (15)	
Indicative content		
<p>Expect some details of future water demand – expected by many to be 30-40% higher than today by 2030 (population growth, food demand, industrialisation, etc). Some answers could focus on different aspects of sustainability e.g.:</p> <ul style="list-style-type: none"> • Economic: affordability both to consumers and governments. • Social: equal access for all, especially those who are ‘water poor’ now. • Environmental: sustaining renewable water resources into the future, while at the same time meeting demand and not degrading ecosystems. <p>Others could structure their answer by sector e.g. farming, industry, domestic use. Sustainable strategies could encompass a number of different approaches:</p>		
<ul style="list-style-type: none"> • Intermediate technology schemes in the developing world (tube wells, pumpkin tanks, earth dams, etc) these might be seen to have quite strong sustainability credentials (affordable, maintainable, local control, local materials etc) – but perhaps don't reach enough people, only apply in the rural developing world. 	<ul style="list-style-type: none"> • Water conservation such as grey water recycling, metering, pricing, groundwater recharge schemes– all to try and reduce demand so water resources go further, or ensure supply for future generations. • Singapore perhaps being the most well-known; Las Vegas/Nevada/California have all implemented schemes to make available water go further. 	
<ul style="list-style-type: none"> • Desalination might be seen as the only option in some cases; it is not sustainable. In very water rich areas it could be argued sustainable schemes are just not needed (could be solar powered, therefore more sustainable). 	<ul style="list-style-type: none"> • Large schemes may not be seen as sustainable, but credit arguments that some are more sustainable than others. • Water sharing agreements might be seen as sustainable in terms of equity. • Embedded virtual water as not sustainable (but useful for the importer) 	
<p>Overall judgement</p> <ul style="list-style-type: none"> • Small scale, intermediate schemes are the answer: may be lack unrealistic to meet demand, unless it is tied with the idea of conservation in places where a complex piped system is required (cities). • Climate change means large schemes will be required, or that small local schemes become ever more relevant. • Greater sustainability is needed, but wholesale sustainability is probably unrealistic. • Demand cannot be met by sustainable strategies, i.e. some role must be played by large mega projects. 		
Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> • General comments on some water supply schemes, weakly if at all linked to sustainability and future demand. • Structure is poor or absent. Explanations are over simplified and lack clarity. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-8	<ul style="list-style-type: none"> • Description and explanation largely case study focused, with limited link to the question of sustainable strategies to meet future demand. • Structure is satisfactory. Explanations are clear, but there are areas of less clarity. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	9-12	<ul style="list-style-type: none"> • Some focus on sustainability and how this could be achieved in different ways, linked to future demand • Some support and some assessment. • Structure is good. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare.
Level 4	13-15	<ul style="list-style-type: none"> • Detailed, supported assessment of different strategies and their sustainability. • Support is applied well to the question and there is an overall judgment.

	<ul style="list-style-type: none"> Carefully structured. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are very rare.
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Question Number	Question
3a	Using Figure 3, suggest reasons for the position of different countries on the forest transition curve model. (10)
	Indicative content

Figure 3 shows the forest transition curve for tropical forest countries; the basic idea is that countries begin on the left with large areas of forest, go through a phase of accelerating deforestation and then begin to afforest areas later on; income per capita is also shown.

Reasons could include:

- DRC** – poorest country by far, arguably not developed enough to deforest large areas (it also has a vast forest); some might see the forest being used for small scale farming whose impact is small; inaccessible forests.
- Indonesia** – a low middle income country/early NIC trying to develop rapidly so exploiting its natural resources – tourism, farming, mining, biofuels, urbanisation, timber are all valid explanations of rapid forest loss; could also reflect weak conservation and protection laws etc, rapidly growing population.
- Brazil/Mexico**– slowing, perhaps due to increased awareness of the value of the Amazon, a move towards a more advanced economy which exploits basic natural resources less; rise of green politics and conservation groups, NGOs, a rising, well educated middle class pressing for stronger environmental protection along with more effective policing/fines/enforcement of protected areas.
- Costa Rica** – might be seen as a more mature version of Brazil/Mexico where wealth and awareness have reached levels where the link between ecosystem and human wellbeing is well-known; could also be more pragmatic, i.e. planting trees to reduce erosion, or to harvest in the future, or to sequester carbon due to concerns about global warming.
- India** – an anomaly i.e. low income but beginning to afforest. Indian ‘green strategy’ to show environmental credentials, but the quality of new forest plantation is low; strategy to prevent soil erosion.

Some candidates may point out that replanted (secondary) forest is not as biodiverse as primary forest, so the data are perhaps misleading in terms of the ecological value of forests, and replanting may be more about economic self-interest i.e. plantation forests.

Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> Descriptive answer which is likely to focus on a narrow range of reasons, i.e. why forests are cut down. Structure is poor or absent. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-7	<ul style="list-style-type: none"> Reference to some countries with some range of reasons, but with variable depth and limited support. At the top end covers several positions on the curve. Structure is satisfactory. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	8-10	<ul style="list-style-type: none"> Range of reasons, across the whole curve (high and low deforestation + afforestation) with some detailed support. May refer to the nature of afforestation and its purpose/value. Structure is good. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare

Question Number	Question	
3b	Using named examples, assess the relative importance of different players in biodiversity conservation. (15)	
	Indicative content	
<p>Answers can focus on any number of different players, but there should be some assessment of how important these are:</p> <ul style="list-style-type: none"> • Conservation groups/NGOs – many have a campaigning role, raising awareness of issues and influencing public opinion, but some do play a more direct role in running conservation areas and promoting sustainable resource use (SMMA, GBR management etc). • IGOs – global organisations put in place treaties that protect ecosystems/species, e.g. CITES, or Ramsar, UNESCO; the UN REDD programme seeks to promote conservation of tropical forests; accept arguments about Kyoto/Copenhagen so long as there is recognition that this is indirect. • Governments – national policies often have a system of protected areas, in the UK this includes greenbelt, LNRs, NNRs, SSSIs, NPs and AONB, Biodiversity Action Plans, among others – some are more biodiversity/ecosystem focused than others; local and national government provide much of the funding. Agencies may also be responsible for policing and prosecution. • The public, or indigenous groups – fund many NGOs; organise local campaigns against development. • Zoos – might be seen as a 'last resort', perhaps along with seed banks, when in situ conservation has failed and species need to be protected ex situ; they also carry out key scientific research that increases the wider body of conservation/biodiversity knowledge that is then applied in situ. • TNCs – might be viewed as wholly negative, i.e. exploiters not conservers, although the more sophisticated argument could be that for PR/other reasons some are increasingly involved in 'cutting down one tree and planting three' etc or in global schemes such as REDD e.g. Marriott hotels. • Role of celebrities in raising the profile of issues. <p>Accept other relevant players.</p> <p>Overall judgement</p> <ul style="list-style-type: none"> • There is no 'right' answer in terms of which players are the most important, but stronger answers should make a judgment. • Organisations with a global role might be seen as important given the scale of biodiversity loss/threats e.g. CITES. • Local organisations could be viewed as taking more direct action, and therefore do more to actually help. 		
Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> • Describes how biodiversity is conserved in one or two places, poor linkage to players. • Structure is poor or absent. Explanations are over simplified and lack clarity. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-8	<ul style="list-style-type: none"> • Some reference to players in an account which is case study focused and explains how areas are conserved; lacks assessment. • Structure is satisfactory. Explanations are clear, but there are areas of less clarity. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	9-12	<ul style="list-style-type: none"> • Reference to a range of players, with some details and support. • Begins to assess importance of some players. • Structure is good. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare.
Level 4	13-15	<ul style="list-style-type: none"> • Genuine assessment of the importance of a range of players with detailed support. • Makes a clear judgment in terms of importance e.g. degree of success, impact, scale local v global. • Carefully structured. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are very rare.

Question Number	Question
4a	Using Figure 4, comment on the value of the four indicators shown as measures of level of development. (10)
	Indicative content

Figure 4 shows four indicators, with data for three developing countries. Answers should comment on the value of the indicators, which involves identifying their strengths and weaknesses.

	Strengths	Weaknesses
GDP per person (US\$)	Well known, even universal, indicator using \$ as international comparator; gives a rough and ready indicator of income/wealth and is often used to rank order countries. Easy to measure.	Does not indicate inequality/regional variations; PPP measures might be better as they take account of local cost of living; economic wellbeing only. Single indicator problem: some will argue that index is stronger, e.g. HDI.
Electricity consumption	Could indicate industrial development, and how widespread infrastructure is.	It is rather similar to income (an income proxy); electricity is only one energy source, e.g. fuelwood use in Rwanda?
Proportion of GDP spent on education	Social indicator; higher figures could suggest more open access to education/government commitment to development.	Perhaps a better indicator of future development potential, as the money spent now benefits the workforce of tomorrow.
Proportion of seat in national parliament held by women	Indicates the position of women in society, and a rough measure of gender equality; possible indicator of social progress and opportunity.	Could be a quota system for women MPs; it's a narrow measure, e.g. high in Rwanda but other indicators suggest low quality of life. Other gender indices may be mentioned.

NB: detailed reference to the three countries is not a requirement; the focus is on the indicators. Credit reference to other indicators, within a commentary on the four shown.

Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> One of two descriptive comments, on a narrow range of indicators/data May focus more on the rank order than the value of the indicator Structure is poor or absent. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-7	<ul style="list-style-type: none"> Some explanation and comments on some of the indicators and their use as measure of development. Variable detail and unbalanced in relation to Figure 4. Structure is satisfactory. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	8-10	<ul style="list-style-type: none"> Detailed commentary focusing on the value of all 4 indicators as measures of development; refers to weaknesses. Likely to be well supported e.g. alternative measures / comment on specific countries Structure is good. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare.

Question Number	Question
4b	Using named examples, assess the costs and benefits of using aid strategies to help bridge the development gap. (15)
	Indicative content

Answers should focus on foreign aid (overseas development assistance) of which there are several types:

<p>NGO Aid – is often viewed in positive terms, being small-scale in many cases, local and often seen as sustainable; it often addresses basic deficiencies in health, education, food and water supply directly at local level; on the other hand it relies on donations (many large NGOs do get large funds from governments), may only help small numbers of people and in reality might not actually narrow the development gap.</p>	<p>Bi-lateral aid – from one government to another, via a government agency such as USAid or DFID; frequently criticised for being tied (strings attached) and politically motivated, i.e. given to ‘friendly’ countries, even if this has shored-up corrupt regimes; some argue it is not needed, e.g. UK aid to India; on the other hand there may be strong bi-lateral relationships between countries.</p>
<p>Multilateral aid – this includes grants, loans and structural adjustment (HIPC) as well as global programmes (WHO immunisation might be seen as a global success story); loans may lead to debt but in some cases have led to development; HIPC can be argued both ways but there are some success stories. This sort of aid is often associated with ‘big projects’ which are often viewed negatively – but they may narrow the gap.</p>	<p>Emergency aid/relief – its role is not to narrow the gap, but prevent disaster, but its value as part of the whole business of aid giving could be considered.</p>

Some answers might note that China’s recent activity in Africa blurs the boundary between aid and investment, e.g. building roads, railways and sports stadia as part of wider economic deals. Other approaches

- Within a discussion of aid accept mention of other approaches, such as fair-trade and FDI, but only if aid has already been considered and a comparison/assessment is being made.
- A Top Down / Bottom up structure is acceptable.
- A general assessment of ‘aid’ as an approach, without specific types of aid, can score up to L3 12.

Overall judgment:

- Stronger answers will need to link to the question of helping bridge the gap, and judge which aid strategies are more likely to achieve this.

NB The MDG are not an aid strategy: only relevant if the focus is on how aid helped deliver the goals/targets.

Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> • One or two descriptive comments about aid, or a description of an aid example. • Likely to lack accuracy; lacks development gap link. • Structure is poor or absent. Explanations are over simplified and lack clarity. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-8	<ul style="list-style-type: none"> • Refers to different aid strategies and has some costs and benefits of a general nature • Weakly linked to the development gap. • Structure is satisfactory. Explanations are clear, but there are areas of less clarity. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	9-12	<ul style="list-style-type: none"> • Some details of a range of different aid strategies and their costs and benefits • Some connections to bridging the development gap; begins to assess. • Structure is good. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare.
Level 4	13-15	<ul style="list-style-type: none"> • Detailed consideration of different aid strategies and their costs and benefits • Detailed assessment of the degree to which they help bridge the gap; may recognise that other approaches are important. Clear judgement.

		<ul style="list-style-type: none">• Carefully structured. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are very rare.
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Question Number	Question
5a	Using Figure 5, suggest reasons for the relationship between income per person and internet use shown. (10)
	Indicative content
<p>The general relationship is a positive correlation, as income rises so does internet use. There are many reasons for this:</p> <ul style="list-style-type: none"> • People can increasingly afford computers/smart phones/tablets plus a connection. • Education levels improve with rising incomes, so with higher literacy more people are able to easily use the internet. • More advanced economies are more likely to have sites worth using for e-commerce, government business – so people have a reason to get connected. • Government investment in education and spreading the use of internet by building the infrastructure; people accessing via widespread use of smart phones. <p>At income levels between \$2000 and \$10000 the relationship is weaker than at higher income levels, and there are more anomalies such as:</p> <ul style="list-style-type: none"> • Pakistan – lower than expected use could be the result of conflict, cultural barriers to use, lack of basic infrastructure in rural areas to support use (electricity). • Uganda is lower than expected – it is landlocked which could prevent infrastructure development/increase costs, therefore reducing access. • Kenya is higher than expected as in Nigeria; both are coastal perhaps improving fibre optic connections (Eassy cable in E Africa) and have important African cities (Lagos, Nairobi) improving access in some locations. • Credit ideas such as One Laptop per Child and similar schemes spreading use. • Leapfrogging by some countries might be used as an explanation for higher than expected internet use. <p>Accept arguments that internet use can cause an increase in GDP per capita PPP, but the relationship shown is of internet use as the dependent variable.</p> <p>Accept explanations that refer to other countries not shown on Fig 5, such as North Korea and China i.e. political factors.</p>	

Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> • One or two simplistic comments relating to rising incomes but goes no further; descriptive. • Structure is poor or absent. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-7	<ul style="list-style-type: none"> • Some range of explanations for the relationship. • Variable detail; some mention of individual countries and anomalies but not in depth. • Structure is satisfactory. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	8-10	<ul style="list-style-type: none"> • Detailed answer, with a range of reasons for both the general relationship and anomalies • Reference to some specific countries. • Structure is good. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare.

Question Number	Question	
5b	Using named examples, assess the role of different technologies in reducing the potential threats from global warming both globally and locally. (15)	
	Indicative content	
<p>The question does refer to future global warming, so future technologies such as geoengineering could form part of the answer.</p> <p>A wide range of approaches could be considered, depending on the nature of the threats considered:</p> <p>Globally:</p> <ul style="list-style-type: none"> • Geoengineering – in many cases this technology tries to solve the problem after it has happened, e.g. artificial trees/ocean fertilisation removing CO₂ from the atmosphere, space sun-shades or sulphate aerosols reducing solar input – they are high cost, possibly high risk, would be hard to get agreement on as they are global solutions • Renewable energy technologies might be seen as a very positive way to reduce CO₂ output and therefore reduce risk – many could be discussed (solar, wind, tidal etc) – but they might be seen as costly, unreliable, unrealistic. <p>Locally:</p> <p>(credit national strategies as well as ones that are genuinely local, as many national ones are implemented locally)</p> <ul style="list-style-type: none"> • Adapting to future climate using water management schemes, drought resistant crops (some are GM) to allow farming to continue. • There are local attempts to reduce the impacts of warming, such as China's Great Green Wall to try and halt the spread of deserts – with varying success; even attempts to directly influence rainfall by cloud seeding. • Flood defences as a local solution to sea level rise or increased flood risk, e.g. Thames barrier, Dutch Delta Project; some might argue these are not viable in some locations, e.g. Bangladesh, Pacific islands. • Small scale technologies in the home, including design to make homes cooler. • Use of electric / hybrid cars and other new emissions lowering technology. <p>Some might consider the argument of a technological versus and attitudinal fix and argue that a change of attitudes to reduce emissions is a better solution in the long term.</p>		
Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> • Description of one or two technologies, with limited accuracy and link to the question. • Structure is poor or absent. Explanations are over simplified and lack clarity. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-8	<ul style="list-style-type: none"> • Some range of technologies covered, linked to global warming threats but unclear on local versus global. • Structure is satisfactory. Explanations are clear, but there are areas of less clarity. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	9-12	<ul style="list-style-type: none"> • Range of technologies with some clarity on local versus global. • Some details provided and begins to assess role, i.e. which might be best. • Structure is good. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare.
Level 4	13-15	<ul style="list-style-type: none"> • Clear on local versus global and well supported by appropriate examples of technologies. • Genuine assessment of role, perhaps within a wider discussion of the best approach. • Carefully structured. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are very rare.

SECTION B

Question Number	Question	
6a	Compare the current strengths and weaknesses of the Chinese and Indian economies (14)	
	Indicative content	
	<p>Answers should compare the two countries using data in the RB (pages 7-8, first section) and stronger answers will bring in their own research and synoptic ideas.</p> <p>For L3 expect an overview.</p> <ul style="list-style-type: none"> China has sustained a growth rate of 7% or more for two decades (Fig 2) but does show signs of slowing; Fig 2 suggests a stop-start Indian economy as growth rates fluctuate, which might deter investment. Imports and exports are more hi-tech than India – and have greater value-added. Imports are basic commodities in India, and it is very dependent on imported oil (30%) and other energy sources – which is true to some degree of China – vulnerability to energy price changes. Exports are mainly going to advanced economies from China (much of this is consumer and business technology). State owned companies could be seen as a weakness – inefficient, possibly subsidized; India's use of subsidies for the poor could be seen as a structural economic weakness (even a waste of money that could be spent better elsewhere). There is some evidence that protectionism exists in both India and China: could be argued as a weakness as it deters FDI or seem as a necessary way to protect domestic jobs. China has a much stronger performance in the Fortune 500 (Fig 4) compared to India; suggests China has a large and growing number of world class companies; India's number has barely increased since 2004 (examples could be provided, e.g. Lenovo, China Mobile, Tata). Neither country scores especially well in terms of the Doing Business rankings in Figure 5, although India's performance is very poor – suggesting lots of red tape and problems for FDI which could be seen as a key weakness. Poverty levels in India could be seen as a drag on the economy i.e. untapped potential. <p>NB do not credit <i>future</i> strengths and weaknesses (Q6c)</p> <p>Synoptic linkages</p> <ul style="list-style-type: none"> Examples of TNCs from Unit 1, or research. Conceptual ideas about globalisation and free trade. Wider research into areas of strength, e.g. India's BPO business and China's manufacturing sector. 	
Level	Mark	Descriptor
Level 1	1-5	<ul style="list-style-type: none"> Descriptive answer referring to some of the sources / data Lacking a true comparison Structure is poor or absent. Explanations are over simplified and lack clarity. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	6-10	<ul style="list-style-type: none"> Comparative answer using some of the sources and referring to some data, Recognises strengths and weaknesses but may be unbalanced. Structure is satisfactory. Some reference to wider links. Explanations are clear, but there are areas of less clarity. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	11-14	<ul style="list-style-type: none"> An effective comparison, using data selectively to make a case. May be organised by factor (workforce / infrastructure / energy etc) rather than data source, includes an overview/summary. Structure is good. Explanations are always clear. Synoptic. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are very rare.

Question Number	Question	
6b	To what extent do the political systems of India and China help explain the Social Progress Indicator scores in Figure 6? (10)	
	Indicative content	
	<p>Much of the evidence for this answer will come from pages 8 and 9, 'Contrasting Visions?'. The SPI scores include an overall rank/score and component scores. China and India rank low in the list of 132 countries at 90 and 102. Some answers might comment that:</p> <ul style="list-style-type: none"> • Despite India's high democracy score in Fig 7 (as high as Taiwan and South Korea) this has not contributed to either a high GNI pc or high SPI scores. • China's one party state could be seen as more successful at promoting some aspects of the SPI. <p>In terms of Basic Human Needs score, there is a large difference with China at 73 and India 54.4:</p> <ul style="list-style-type: none"> • China's high score suggest it meets basic needs well, whereas India does not; India's poverty rate (especially rural) is well known and slums (Dharavi) are famous, although it does spend heavily on subsidies to try and plug the basic needs gap. • Water, sanitation, health and shelter can be linked to the public spending and infrastructure spending on page 3/Figure 8 – China invests more in basic needs. <p>The Foundations of Wellbeing scores are closer:</p> <ul style="list-style-type: none"> • India's education system is less well funded than China's; some might link China's stronger score to better IT access, internet access (related to wealth). • China's lowish score could be linked to its poor environmental track record – air, water pollution, and growing ecofootprint due to industrialisation (government prioritising economy over environment). <p>China and India have almost identical Opportunity scores, which are low:</p> <ul style="list-style-type: none"> • China's political system restricts personal rights and freedoms (Fig 7) which can explain its low score; access to advanced education may be better than in India. • Despite being a democracy, India's score is also low – the caste system, general inequality and corruption, poor governance at national and state level, could be used to explain this. <p>Possible linkages</p> <ul style="list-style-type: none"> • Reference could be made to the Rostow model in terms of their respective positions. • Bridging the development gap: this use of other measures of development from research, e.g. HDI. • Globalisation and urbanisation from Unit 1. • Development theory: e.g. dependency theory to explain India's position. 	
Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> • Descriptive answer, which refers to some data for the two countries. • Explanation is limited and reference to political systems is absent or shows lack of understanding. • Structure is poor or absent. Explanations are over simplified and lack clarity. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-7	<ul style="list-style-type: none"> • Some reference to some elements of the SPI, and some explanations using data. • Political systems/other factors are referred to with varying clarity. • Structure is satisfactory. Explanations are clear, but there are areas of less clarity. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	8-10	<ul style="list-style-type: none"> • Detailed reference to the SPI and its components. • Range of possible explanations focusing on the extent to which political systems and other factors might explain the scores; makes a judgment. • Good use of data provided. Structure is good. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are very rare.

Question Number	Question
6c	Study Figure 15. What positions in the geopolitical power hierarchy are China and India likely to occupy by 2030 and 2050? Justify your answer. (16)
	Indicative content
<p>Figure 15 shows a power hierarchy. There is no correct answer, but some judgments will be more justifiable than others. Answers could be structured using types of power (economic, cultural, military, political, demographic) or similar but should differentiate between 2030 and 2050. Expect some of the following points:</p> <p><u>Demographics</u> Figure 9 suggests India will be the largest country by population in 2030 and Fig 10 suggests a large demographic dividend, i.e. a large working age population without a large ageing one to support, in contrast to China whose population is peaking around 2030 and ageing dramatically (high health and social care costs). India might be seen as taking on China by 2050 because of this.</p> <p><u>Economic power</u> Predictions here are very hard to make; Figure 11 suggests India remains much poorer than China, whereas China is rivalling the USA (but not in p.c. terms) – this might be seen as evidence that China is a global superpower by 2030, but perhaps that the Indian economy is still low wage and poverty is a major problem (therefore still emerging); by 2050 China’s economy could have outstripped the USA.</p> <p><u>Military</u> Figure 12 is not a future projection, however China seems to be ramping up its military spending continually and might be seen to be threatening the USA’s dominance in the future (details of military progress/size might be from research); India seems to have decided on a budget in 2009 and stuck at that level – both are nuclear powers of course (research). Some might argue China is trying to make its military global, e.g. developing a blue water navy. By 2050, with the world’s largest economy, China could be a threat to US military dominance.</p> <p><u>Cultural</u> Reference is not made to this in the RB so any relevant points would be synoptic.</p> <p><u>Political</u> The role of China and India in IGOs could be relevant, and would come from research.</p> <p><u>Threats:</u> The RB also shows some possible threats that could derail the progress of India/China:</p> <ul style="list-style-type: none"> • Fig 13 shows that China already uses a very large proportion of some global resources – can this be sustained? There are cost issues going forward which could reduce China’s economic competitiveness. • As India’s population is growing, there may be issues of how far it can feed itself, and provide water for everyone. • India seems to be likely to suffer more from rising global temperatures (Fig 14) which could be a serious threat to farming/water supply – diverting attention/money from its desire to become a global power. <p><u>Synoptic linkages</u></p> <ul style="list-style-type: none"> • Other issues could be mentioned, e.g. the space race between India and China. • There are links to Unit 1 Globalisation and Unit 3 Technological Fix, e.g. China’s increasing global role in R&D and renewable energy. • Resources in terms of water and energy in Unit 3. <p>NB: credit either use of 43% or 46% for China Steel in Figure 13 (the erratum notice in the exam).</p>	

Level	Mark	Descriptor
Level 1	1-4	<ul style="list-style-type: none"> • Partial answer, with limited use of data/resources. • Likely to be narrowly focused on one /two issue (s). • Structure is poor or absent. Explanations are over simplified and lack clarity. Geographical terminology is rarely used with accuracy. There are frequent grammar, punctuation and spelling errors.
Level 2	5-8	<ul style="list-style-type: none"> • Descriptive answer with some focus on future geopolitical status. • Makes a simplistic poorly supported judgement • Unconvincing on 2030/2050 difference. • Structure is satisfactory. Explanations are clear, but there are areas of less clarity. Geographical terminology is used with some accuracy. There are some grammar, punctuation and spelling errors.
Level 3	9-12	<ul style="list-style-type: none"> • Answer uses a range of relevant data. • Some balance between India and China and does differentiate 2030 and 2050; • Judgment is made about geopolitical status and there is some justification. • Structure is good. Some reference to wider links. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are rare. <p>NB Maximum 9 if only India or China done well.</p>
Level 4	13-16	<ul style="list-style-type: none"> • Detailed consideration using the RB selectively and own research. • Makes a clear justified judgement on geopolitical status about 2030 and 2050 which is supported by the evidence used. • Balanced between India and China. • Carefully structured. Strong synoptic links. Explanations are always clear. Geographical terminology is used with accuracy. Grammar, punctuation and spelling errors are very rare.

