



# Mark Scheme (Results)

Summer 2022

Pearson Edexcel GCSE

In Geography Spec B (1GB0) Paper 03

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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.

Question Number	Answer	Mark
<b>1(a)</b>	2002	<b>(1)</b>

Question Number	Answer	Mark
<b>1(b)</b>	<p>Award 1 mark for any of the following:</p> <ul style="list-style-type: none"> <li>• Rising affluence / richer people wealthier country (1)</li> <li>• Country becomes more developed / HDI score rises (1)</li> <li>• Period of growth / boom after a recession (1)</li> <li>• Industrialisation / new industry (or example of this) (1)</li> <li>• New use of a previously unused resource e.g. cobalt (1)</li> </ul> <p><u>Marking guidance</u> Do not credit statements where <i>no change over time</i> can be inferred e.g. 'People always need resources' or 'The industries need more resources.'</p> <p><b>Accept any other valid economic, technological or political reasons for rising demand.</b></p>	<b>(1)</b>

Question Number	Answer	Mark
<b>1(c)</b>	<p>Award 1 mark for use of data from Figure 1, and 1 mark for a statement which explains or implies that population can <u>double</u> over <u>30 years</u>.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Population already doubled from 1990 to 2020 (1) when it grew from 15 to 30 million (1)</li> <li>• From 1960 to 1990 Ghana grew from 7.5 to 15 m (1) which is as long as 2020 to 2050 (1).</li> <li>• The fertility rate is 4 (1), so in 30 years' time there could be four children per two adults (1)</li> </ul> <p>Award 1 mark only for a partially focused explanation, such as: 'The population rise is very steep, so it'll easily double.' (1) or 'Population grows by millions every few years, so it will keep on increasing.' (1)</p> <p><b>Accept any other appropriate analytical response making use of the demographic data provided.</b></p>	<b>(2)</b>

Question Number	Answer	Mark
<b>1 (d)</b>	<p>Award 1 mark for any way in which mining can lead to tree loss / deforestation, up to a maximum of 2 marks.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Clearing of forest for mining / machinery (1)</li> <li>• Deforestation for settlement (1)</li> <li>• Chemicals kill trees / water is polluted (1)</li> <li>• Miners burn wood as fuel for cooking, etc. (1)</li> <li>• Soils are washed away due to human activity (1)</li> <li>• Roads are built to transport the gold (1)</li> </ul> <p>Do not award 1 mark for 'trees are cut down' or 'deforestation' unless a valid / possible link between this tree loss and mining has been identified.</p> <p>Accept any valid analytical / interpretive suggestion, provided answers are visible in photograph or might be inferred from the photograph.</p>	<p><b>1 + 1</b></p> <p><b>(2)</b></p>

Question Number	Answer	Mark
<b>1(e)</b>	<p>Award 1 mark for a basic explanation and 1 mark for further development, up to a maximum of 2 marks.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• Without interception cover / protection / canopy (1) rainwater will wash soil away (1)</li> <li>• Tree roots bind soil (1) and without them soil is eroded / blown by wind (1)</li> <li>• Nutrients come from plants (1) and loss leads to lower soil fertility / poor soil health (1)</li> <li>• Litter and dead leaves are needed (1) without which soil nutrients become less (1)</li> <li>• Vegetation and soil are interdependent (1) and need each other for their health (1)</li> </ul> <p><b>Accept any other appropriate response.</b></p>	<p><b>(2)</b></p>

Question Number	Answer	Mark
<b>2(a)(i)</b>	<p>C Between August and September</p> <p><i>Rationale – rises by 80 mm (around 50 %)</i></p> <p>A) Incorrect - April-May rises by 20 mm (small %)</p> <p>B) Incorrect May-June – rises by 60 mm (small %)</p> <p>D) Incorrect - September-October rises 60 mm (small %)</p>	<b>(1)</b>
Question Number	Answer	Mark
<b>2(a)(ii)</b>	80 mm	<b>(1)</b>

Question Number	Answer	Mark
<b>2(b)</b>	<p>A and E</p> <p>Rationale – these are rainforest adaptations (to shed water and maximise growth).            B and D relate to Taiga forest not rainforest            C is not a plant adaptation, it is a biome characteristic</p>	<p><b>1 + 1</b></p> <p><b>(2)</b></p>

Question Number	Answer	Mark
<b>2(c)</b>	<p>In each case:</p> <ul style="list-style-type: none"> <li>- Award 1 mark for a relevant vegetation change, based on Figure 4, which might affect rainforest animals.</li> <li>- Award 1 mark for an explanation of how/why this may impact on rainforest animals.</li> </ul> <p>For example:</p> <ul style="list-style-type: none"> <li>• Birds/insects/climbing animals lived in the tall emergents (1) but now no suitable habitat remains (1)</li> <li>• Rainforest fruits / flowers were a food source for animals (1) but there are no alternatives / substitutes in the cocoa plantation (1)</li> <li>• Fewer food sources for animals so some migrate /die out (1) because changes bring less plant diversity (1)</li> <li>• Damp, shaded forest floor may have protected insects/frogs (1) so easier prey for carnivores (1)</li> </ul> <p><u>Extra guidance</u> Award 1 mark only for each explanation which is not linked <i>clearly enough</i> to the Figure e.g. 'Animals have lost their habitat/home/food so die/migrate'.</p> <p><b>Accept any other appropriate response.</b></p>	<p><b>2 + 2</b></p> <p><b>(4)</b></p>

Question Number	Answer	Mark
<b>3 (a)(i)</b>	Gold	<b>(1)</b>

Question Number	Answer	Mark
<b>3(a)(ii)</b>	$C \frac{5194 - 3100}{3100} \times 100$ <p>Rationale – this is the only correct formula with the change divided by the original value (times 100).</p>	<b>(1)</b>

Question Number	Answer	Mark
<b>3 (b)</b>	Angola	<b>(1)</b>

Question Number	Answer	Mark
<b>3 (c)</b>	<p>In each case, award 1 mark for a way and 1 mark for further explanation.</p> <p>Explanations, based on the Figures, may include:</p> <ul style="list-style-type: none"> <li>• If Ghana finds new oil, its GDP per capita could rise above \$5,194 (Fig 5) (1) given that large producers (Fig 6) all have higher figures than this (1)</li> <li>• If new oil discoveries are NOT in Ghana but elsewhere then Ghana's economy might shrink (1) due to increased competition from its neighbours (Fig 6) (1)</li> <li>• % contribution of gold (or other sector in Fig 5) could fall (1) if production is as high as other countries (Fig 6) (1)</li> <li>• Oil is less than a quarter of Ghana's exports (Fig 5) (1) but this % is likely to increase if more offshore fields are discovered and developed (1)</li> </ul>	<p><b>2 + 2</b></p> <p><b>(4)</b></p>

Question Number	Answer	Mark
<b>3 (d)</b>	B  Rationale – this is the only correct distance. The others are clearly larger or smaller.	<b>(1)</b>

Question Number	Answer	Mark
<b>3 (e)</b>	<p>Award 1 mark for each reason and 1 mark for further explanation, up to a maximum of 2 marks each:</p> <p><u>Physical</u></p> <ul style="list-style-type: none"> <li>• Oil only found in some locations / places (1) linked with geological conditions / sedimentary rocks (1)</li> <li>• Oil is produced over millions of years from organic / carbon-rich remains (1) but the local conditions needed for this are not found everywhere (1)</li> <li>• Forest cover / other landscape characteristics e.g. relief (1) makes reserves too costly to access or develop, or hinder infrastructure development (1)</li> <li>• Oil may be too deep (onshore or offshore) (1) which drives up extraction cost beyond profitability (1)</li> </ul> <p><u>Economic</u></p> <ul style="list-style-type: none"> <li>• Oil development can be very expensive (1) for example specialist drilling equipment. (1)</li> <li>• World's poorest countries lack the money needed to exploit their oil (1) in the absence of assistance e.g. foreign TNCs. (1)</li> <li>• Expensive technology is required to exploit some oil resources (shales) (1) and only high- or middle-income countries may make this investment. (1)</li> </ul> <p>Award 1 mark only for answers like: 'Oil reserves are too deep and so the oil is too expensive to use' or 'Countries are not developed and so they lack the money needed to develop their oil'. In both cases, insufficient explanation is provided for the award of 2 marks.</p> <p><b>Accept any other appropriate response.</b></p>	<p><b>2 + 2</b></p> <p><b>(4)</b></p>



<b>3 (f)</b>	<p style="text-align: center;"><b>AO3 (4 marks)/AO4 (4 marks)</b></p> <p>Answers should address the similarities and differences between the two views. The assessment may offer an overview of how much (dis)agreement there is.</p> <p><b>A03</b></p> <ul style="list-style-type: none"> <li>Both writers agree that TNC are important / major players in Ghana, though they are portrayed more negatively in View 2, and more as partners in View 1.</li> <li>Both writers strongly agree that Ghana skills shortages and foreign aid are concerning issues.</li> <li>Both writers think development mistakes have been made, though View 1 sees them more in the past now.</li> <li>Writer A thinks that oil development will benefit Ghana but writer B argues TNCs will always benefit most from Ghana's resources.</li> <li>Writer B seems far less optimistic about Ghana's future.</li> <li>Overall, the views seem very different, mainly because of the very different perspectives of the writers on TNCs - this is where they seem to differ most.</li> </ul> <p><b>AO4</b></p> <ul style="list-style-type: none"> <li>Writer A describes the exciting data from Kosmos (Figure 8)</li> <li>Writer A describes past dependency on cocoa exports (Figure 8)</li> <li>Writer A describes the skills shortages which still prevail in Ghana, and we can infer there are no management or engineering courses yet on offer (Figure 8)</li> <li>Writer B describes how only 2% of profits from gold make their way back to Ghana as TNCs exploit poor countries to promote growth elsewhere (Figure 8)</li> <li>Writer B describes the way TNCs have siphoned off US\$ 100 billion (Figure 8)</li> <li>Writer B describes oil as being 'not much better' than other industries (Figure 8)</li> </ul>
Level	Mark Descriptor
	0 No acceptable response
Level 1	1-3 Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3) Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)
Level 2	4-6 Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3) Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)
Level 3	7-8 Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3) Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)

Question Number	Answer	Mark
<b>3 (g)</b>	<p>In each case, award 1 mark for a reason based on information or ideas from Figure 9, and 1 mark for further explanation using own knowledge, up to 4 marks.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• More fossil fuels are being used overall (1) due to world population growth over time (1).</li> <li>• New technologies require more energy (1) which could help explain rise in coal use around 2010 (1).</li> <li>• Rising affluence among consumers (1) for example China / India / emerging countries (1).</li> <li>• 'Other fossil fuel' use (also in Fig 9) has grown (1) which might be shale gas exploitation in the USA (1).</li> <li>• Deforestation linked with fossil fuel extraction indirectly adds CO<sub>2</sub> to the atmosphere also (1) due to carbon storage losses (1).</li> </ul> <p>Expect explicit use of evidence from the Figure for award of full marks. With no evidence at all, award up to 3 marks.</p> <p><b>Accept any other appropriate response.</b></p>	<p><b>2 + 2</b></p> <p><b>(4)</b></p>

3 (h)	<p style="text-align: center;"><b>AO3 (4 marks)/AO4 (4 marks)</b></p> <p>Answers should address environmental challenges profiled in Figure 10. The assessment may offer a view of which is most severe/concerning, and why.</p> <p><b>A03</b></p> <ul style="list-style-type: none"> <li>• Loss of rainforests could involve an <i>irreversible</i> loss of species</li> <li>• Coastal flooding is expected <i>on a large scale</i> along large parts of the coastline</li> <li>• Warmer water has <i>knock on effects</i> for the whole food chain not just certain vulnerable species</li> <li>• Water shortages <i>may not be so severe</i> unless there is a greater rainfall reduction</li> <li>• The combination of impacts poses <i>a severe threat to farmers especially</i></li> <li>• There is a range of projected temperature rises <i>so severity will depend on this</i></li> </ul> <p><b>A04</b></p> <ul style="list-style-type: none"> <li>• Forests may be replaced with grasslands with fewer habitats (Figure 10)</li> <li>• 4% rainfall decrease could bring HEP shortages may occur (Figure 10)</li> <li>• 190mm rise in sea level could be devastating for Accra (Figure 10)</li> <li>• 5.8C temperature rise might mean all 2 million people who fish can no longer earn a living (Figure 10)</li> <li>• Volta delta farmlands are threatened by sea-level rise and also by a changing climate (Figure 10)</li> <li>• Food supplies are threatened by shorter growing season (Figure 10)</li> </ul>	
Level	Mark	Descriptor
	0	No acceptable response
Level 1	1–3	<p>Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements are supported by limited evidence. (AO3)</p> <p>Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)</p>
Level 2	4–6	<p>Applies understanding to deconstruct information and provide some logical connections between concepts. An imbalanced argument that synthesises mostly relevant understanding but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)</p> <p>Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)</p>
Level 3	7–8	<p>Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently, leading to judgements that are supported by evidence throughout. (AO3)</p> <p>Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)</p>

Q	Indicative content
4	<p style="text-align: center;"><b>A02 (4 marks)/A03 (4 marks)/A04 (4 marks)</b></p> <p>In order to fully justify a choice, the candidate must consider all three options and establish a clear argument. There is no preferred option. All options can be justified as helping development - though rate and sustainability of growth can be questioned.</p> <p><u>Option 1</u> – stopping oil production makes sense in the long-term. An educated, skilled population might develop the country's existing resources themselves in more sustainable ways.</p> <p><u>Option 2</u> – maintaining a range of industries makes sense as it provides a wide range of employment opportunities and ways of making money. However, all currently have economic and environmental drawbacks and reforms will be needed.</p> <p><u>Option 3</u> – a focus on oil could bring stronger economic growth in the short-term. However, oil wealth does not always trickle-down for universal social development. Oil contributes to climate change with long-term sus. development implications for Ghana.</p> <p><b>A02</b></p> <ul style="list-style-type: none"> <li>• Oil continues to be a high-value product for which there is strong and still-growing global demand, but brings risks as the Gulf of Mexico disaster showed.</li> <li>• If new technologies like carbon capture and storage succeed, oil could continue to have value</li> <li>• Afforestation schemes and stricter regulations could limit the damage done by gold and cocoa producers; some TNCs are responsible; Fairtrade schemes help farmers</li> <li>• Population growth can stimulate innovation (Boserup's model) and ecotourism projects or new technologies could offer alternative economic development routes</li> <li>• Climate change brings a range of developmental threats to lower-income countries</li> </ul> <p><b>A03</b></p> <ul style="list-style-type: none"> <li>• Development has social, economic and environmental strands (sus. development) and some development pathways balance these better than others.</li> <li>• Oil could bring short-term growth but there are long-term costs of 'business as usual' fossil fuel use that could harm the development of Ghana.</li> <li>• However, oil wealth may not trickle-down to many people who stay in poverty, and profits may all end up in the pockets of TNC shareholders, not Ghanaian people</li> <li>• Having a diverse economy spreads risk if any sector fails or generates too many challenges, and ultimately may be the safest long-term option for sustained economic growth (oil suffers from price cycles, for example)</li> <li>• However, Ghana's population is still increasing so the harm done by traditional industries may only grow and become costlier to fix</li> <li>• Population growth may provide the impetus to diversify further and develop new industries and technology; but income is still needed in the short-term</li> </ul> <p><b>A04</b></p> <ul style="list-style-type: none"> <li>• Oil has helped economies to grow in other African countries and new sources may exist for Ghana (Figure 7)</li> <li>• Unsustainable costs of fossil fuel use (Figures 9 and 10) will only worsen if nothing done, based on projections and expert views</li> <li>• Agriculture (including cocoa) and mining have already helped Ghana's economy grow over time (Figure 5)</li> <li>• Traditional industries harm the environment in ways which could be costly to fix (Figures 2, 4) while profits may end up with TNCs not Ghana (Figure 8)</li> <li>• Oil production has done little to help ordinary people develop in other African countries where poverty is high (Figure 6)</li> <li>• Improving education would mean Ghana can develop a multiplier effect around its current industries (Figure 8) or grow its universities (Figure 10)</li> </ul>

Level	Mark	Descriptor
	0	<ul style="list-style-type: none"> <li>No acceptable response</li> </ul>
Level 1	1–4	<ul style="list-style-type: none"> <li>Demonstrates isolated elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2)</li> <li>Attempts to apply understanding to deconstruct information but understanding and connections are flawed. An unbalanced or incomplete argument that provides limited synthesis of understanding. Judgements that are supported by limited evidence. (AO3)</li> <li>Uses some geographical skills to obtain information with limited relevance and accuracy, which supports few aspects of the argument. (AO4)</li> </ul>
Level 2	5–8	<ul style="list-style-type: none"> <li>Demonstrates elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2)</li> <li>Applies understanding to deconstruct information and provide some logical connections between concepts. An unbalanced argument that synthesises mostly relevant understanding, but not entirely coherently, leading to judgements that are supported by evidence occasionally. (AO3)</li> <li>Uses geographical skills to obtain accurate information that supports some aspects of the argument. (AO4)</li> </ul>
Level 3	9–12	<ul style="list-style-type: none"> <li>Demonstrates accurate understanding of concepts and the interrelationship between places, environments and processes. (AO2)</li> <li>Applies understanding to deconstruct information and provide logical connections between concepts throughout. A balanced, well-developed argument that synthesises relevant understanding coherently leading to judgements that are supported by evidence throughout. (AO3)</li> <li>Uses geographical skills to obtain accurate information that supports all aspects of the argument. (AO4)</li> </ul>

Marks for SPGST		
Performance	Marks	Descriptor
SPaG 0	0	<p><i>No marks awarded</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Learners write nothing.</li> <li><input type="checkbox"/> Learner's response does not relate to the question.</li> <li><input type="checkbox"/> Learner's achievement in SPaG does not reach the threshold performance level, for example errors in spelling, punctuation and grammar severely hinder meaning.</li> </ul>
SPaG 1	1	<p><i>Threshold performance:</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Learners spell and punctuate with reasonable accuracy.</li> <li><input type="checkbox"/> Learners use rules of grammar with some control of meaning and any errors do not significantly hinder meaning overall.</li> <li><input type="checkbox"/> Learners use a limited range of specialist terms as appropriate.</li> </ul>
SPaG 2	2–3	<p><i>Intermediate performance</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Learners spell and punctuate with considerable accuracy.</li> <li><input type="checkbox"/> Learners use rules of grammar with general control of meaning overall.</li> <li><input type="checkbox"/> Learners use a good range of specialist terms as appropriate.</li> </ul>
SPaG 3	4	<p><i>High performance</i></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Learners spell and punctuate with consistent accuracy.</li> <li><input type="checkbox"/> Learners use rules of grammar with effective control of meaning overall.</li> <li><input type="checkbox"/> Learners use a wide range of specialist terms as appropriate.</li> </ul>

