

Mark Scheme (Results)

November 2020

Pearson Edexcel GCSE In Geography B (1GB0) Paper 01: Global Geographical Issues

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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	Marks
1a (i)	C. All other answers are incorrect. Here a dense oceanic plate converges with a less dense continental plate.	1
1a (ii)	Accept any response from stratovolcano, composite volcano or volcano cone.	1
1b	Allow 1 mark for identifying a cause of tectonic plate movement and further marks for explanation. • Convection currents cause plate movement (1). These currents are generated by heat from the core (1) and push/pull/drag the overlying plates (1). • Heat rising and falling in the mantle (1) creates convection currents (1) which are generated by radioactive decay in the core (1). • Convection currents (1) caused by the radioactive decay of elements in the core (1) push/pulls/drags the tectonic plate (1). • Ridge push can cause plate movement (1). Newly formed plates at ocean ridges have high elevation (1) which pushes away the plate further from the oceanic ridge (1). • Slab pull causes the movement of plates (1) denser plates sinking at subduction zones (1) pull the rest of plate along with it (1).	3
1c(i)	Accept any other appropriate response. Award one mark for each descriptive point up to a maximum of 3 marks. Overall, Arctic ice declines in the period shown (1). There are fluctuations in the extent of Arctic ice (1). Whereas overall ice shows a decline, there are periods when it increases (1). In 1978, there was just over 16.3 million km² of ice in the Arctic by 2018 this had fallen to 14.3 million km² of ice. 1994 is the first time the ice extent drops below the 1978-2018 average (1). Since 2003, the ice extent has been below the 1978-2018 average (1). Ice extent fell rapidly between 2003-2006 (1). In total, between 1978-2018, the ice extent has reduced by 2 million km² (1). The extent of ice increased by 0.7 million km² between 2011-2012. (1). Max 2 marks if no use of numerical data. Accept any other appropriate response.	3

1c(ii)	Award 1 mark for any cause of Arctic ice decrease:	1
	• Increased concentrations of greenhouse gases lead to the melting	
	(1).	
	Global warming/increased global temperatures (1).	
	Climate change / changing temperatures (1).	
	Accept any other appropriate response.	
1c (iii)	Allow 1 mark for each correctly identifying a why people's lives will be impacted upon by declining Arctic ice levels and a further mark for explanation up to a maximum of two marks each. Note that consequences may be positive as well as negative and the impacts on people may be outside of the Arctic circle. • Melting Arctic ice will lead to rises in sea levels (1) which may result in coastal flooding (1). • Melting ice can lead to the destruction of animal habitats (1) which people rely upon to provide food and furs (1). • Melting sea ice can have an effect on ocean circulation (1) potential leading to climate changes (1). • Melting Arctic ice can result in the release of methane from permafrost (1) leading to further global warming (1). • Unstable ice can lead to difficulties when fishing (1) leading to injuries and death (1). • Melting ice leads to transport becoming difficult (1), isolating communities (1). • Decreasing Arctic ice can lead to an erosion of indigenous cultures (1) as traditional sources of employment are replaced by work in the oil/gas industry (1). • Early spring ice melting will give a longer fishing season (1), this will lead to increased incomes for indigenous people (1). • Melting Arctic ice opens new shipping routes (1), boosting trade and being a source of employment in Arctic towns (1).	4
	• Reduced Arctic sea ice coverage will lead to increased oil exploration in the area (1), this will provide a source of employment	
	for local people (1).	
	Accept any other appropriate response.	
1d	Award 1 mark for identifying a source of evidence which can be used	2
	to explain natural climates and a further mark for explanation.	
	• Ice cores (1) can be analysed to determine the amount of carbon	
	dioxide in them (1).	
	Historical records such as paintings/diary entries (1) may inform	
	about frost fairs on the Thames/ difficult growing conditions (1).	
	and the state of t	

	• Tree rings (1) can be examined with greater thickness indicating better growing periods/higher temperatures (1).	
	Accept any other appropriate response.	
1e (i)	D – Fuel used in energy industries.	1
1e (ii)	All other answers are incorrect. Allow 1 mark for each stage of the calculation. Award 1 mark for showing working of percentage decrease/change (difference between two figures / 1990 figure x 100)	2
	1235/4365 x 100	
	OR	
	100-(3112/4365 x100)	
	OR	
	3112/4365x100 = 71.29. 100-71.29 = 28.71	
	Award one mark for the answer to one decimal place. Answer: -28.7% or 28.7% (1).	
1f	Award 1 mark for identifying a reason why tropical storms lose energy and further mark for an explanation of that reason up to a max of 2 marks for each explanation. • When tropical storms reach land (1), they no longer have access to warm water which is their source of power (1). • Tropical storms lose energy when they move into areas of cooler water (1). They require water with a temperature of above 26.5 degrees Celsius (1). • They lose energy when they meet different weather systems (1) where winds are blowing in the different directions / wind shear is high (1). Accept any other appropriate response.	4
	Accept any other appropriate response.	
1g	AO2 (4 marks) / AO3 (4 marks) Vulnerability can be interpreted to be physical or socio-economic vulnerability.	8

AO2 (4 marks)

- Developed nations governments are able to provide large amounts of monetary assistance and rapidly mobilise emergency services. For example, in Hurricane Michael in 2018, air ambulance emergency services were ready to be deployed from Miami to help those in need.
- Low lying nations are particularly at risk. Much of Bangladesh is very close to sea level meaning that storm surges often have a devastating impact as was the case in Cyclone Alia in 2009.
- The strength of the storm and accompanying storm surge impact vulnerability. Hurricane Katrina produced a 6m high storm surge with wind speeds over 120mph which caused flooding in many districts of New Orleans.
- The ability of the government to effectively reduce vulnerability is important. Educating the population as to what to do in the event of a tropical storm as well as preparing storm defences can help to reduce vulnerability.
- Areas in multi-hazard zones such as the Philippines are very vulnerable to the impacts of tropical storms. Heavy rain can cause landslides as was the case in Typhoon Mangkhut in 2018 which buried entire villages.
- Some countries are not in the path of tropical cyclones. Surrounding sea areas are too cool for the formation of tropical cyclones or they may be inland locations, far away from a sea of 26.5 degrees and above which provides tropical cyclones with their source of energy.

AO3 (4 marks)

- Judgement about the most significant social factors contributing to vulnerability. For example, although the fact that much of Bangladesh is very low-lying made a significant contribution to 750,000 people made homeless in Cyclone Aila in 2009, the overall lack of economic development was a more significant factor. Of those affected 90% were from low-income groups living in areas of high population density close to the coastline.
- Judgement about the most significant physical factors contributing to vulnerability. For example, Hurricane Katrina was a category 4 tropical storm with wind speeds over 120mph which made landfall in New Orleans. Significantly, much of New Orleans is below sea level and its inadequate system of levees were flooded by the 6m high storm surge.
- Judgement regarding the importance of systems of prediction and preparation. For example, a significant factor which reduced the vulnerability of the population of Florida to the impacts of Hurricane Michael was the warnings given by the National Weather Centre as the storm approached. This reduced injuries and the overall death toll.
- Judgement regarding the increasing ability of developing economies to prepare effectively for tropical storms. For example,

although 190 people were killed in Cyclone Alia, vulnerability of the population was significantly reduced by the creation of a network of cyclone shelters.

Level	Mark	Descriptor
	0	No acceptable response
Level 1	1-3	 Demonstrates isolated elements of understanding of concepts and the interrelationships of places, environments and processes. (AO2) 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)
Level 2	4-6	 Demonstrates elements of understanding of concepts and the interrelationship of places, environments and processes. (AO2) 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)
Level 3	7-8	 Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2) Applies understanding to deconstruct information and provides 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)

2a A - The annual number of deaths of women from pregnancy per 100 000 live births.

(i)

All other answers are incorrect.

_		
2a	D Gross Domestic Product (GDP) per capita.	1
(ii)	All other answers are social measure of development.	
2b	Award 1 mark for identifying a reason for a decline in fertility rates and a further mark for explanation of that point.	2
	 Improving education/literacy levels in women (1) improves knowledge of birth control methods (1). 	
	• As female education improves (1) women are more likely to have opportunities for careers/employment (1).	
	 More money Is spent on birth control programmes (1) educating the population about the advantages of having smaller families (1). 	
	No mark for simply stating there are less children born.	
	Accept any other appropriate response.	
2c (i)	Time Mark awarded for the 'traditional society' being labelled in stage 1 (box) (1).	1
2c	Award one mark for explanation of the level of development /a stage of the Rostow	3
(ii)	model and further two marks for explanation of subsequent stages.	

	 Rostow states that countries begin with a traditional society which involves subsistence agriculture (1), countries then invest in technology which enables them to prepare for the take-off stage (1). This often involves rapid industrialisation and further increase in investment (1). As countries develop, Rostow stated that rapid industrialisation occurs during the take-off stage (1), this is followed by an increase in the purchase of consumer goods as countries move through the drive to maturity (1) until eventually the age of high-mass consumption is reached where consumer good purchase is at its highest and the country at its wealthiest. (1). NB No marks for simply identifying a stage of the Rostow model. The stage needs to be explained. 	
	Accept any other appropriate response.	
2d	Award 1 mark for identification of an advantage and a further mark for extension of this reason, up to a maximum of 2 marks. • Intermediate technology makes use of local materials (1) which are cheap and easily available (1). • Intermediate technology involves low-tech solutions to help local people (1) which can easily be repaired should they break down (1). • Intermediate technology uses cheap materials (1), which can be afforded by poor people in developing societies (1). Accept any other appropriate response.	2
2e	Award 3 marks for a correctly drawn compound bar graph.	3
(i)	Allow +/- 1% for each quintile.	
	3 or 4 quintiles correctly drawn = 3 marks.	
	2 quintiles correctly drawn = 2 mark.	
	1 quintile correctly drawn = 1 mark.	
	0 quintiles correctly drawn = 0 marks.	
2e (ii)	61%-3% = 58%. Award one mark for the correct answer of 58%.	1
2f (i)	Award 1 calculation mark for identifying the lower quartile (Labuan 0.742) and upper quartile (Melaka 0.794) and a further mark for the correct answer obtained by subtracting the lower quartile from the upper quartile.	2
	0.794 – 0.742 (1) and 1 mark for the correct answer of 0.052 (1).	

2f Award 1 mark for the identification of a suitable data presentation technique and 2 (ii) another mark for description of the technique. • A choropleth map could be used (1) with different shading to show HDI score intervals (1). • A bar graph could be used (1) with states along the x axis and HDI scores on the y axis (1). Accept any other appropriate response. Award 1 mark for identifying a source of water pollution and a further mark for 2g explanation on the impact on water quality. • Industrial activity (1) can release chemicals into local water sources (1). • Increasing urban populations can put stress on sanitation systems(1) which can result in untreated sewerage entering local rivers (1). • Leakage from poorly managed garbage collection facilities (1) can contaminate groundwater supplies (1). • The disposal of rubbish in rivers (1) can release chemicals into water sources (1). Must have impact on water quality to gain the explanation mark. Accept any other appropriate response. AO2 4 marks / AO3 4 marks A02 4 marks • TNCs provide employment opportunities by creating jobs in emerging countries. For 8 example, Apple has created over 700,000 jobs in China as it seeks to minimise costs. 2h • There have been reports of people working in very poor working conditions whilst employed by TNCs in emerging country. Known as 'sweatshops', TNCs have been alleged to take advantage of the non-existence of workers' rights and exploit their workforce. • Employment generated by TNCs helps to boost local economies through the multiplier effect whereby increased spending generates more opportunities both for TNCs and local businesses. • Much of the profits from TNCs leave the host country and return to more developed nations. The overall economic benefit of TNCs may therefore be fairly minimal.

- TNCs help to develop the infrastructure of the area in which they are based by constructing roads, improving power provision and telecommunications.
- Much of the infrastructure constructed often only directly benefits the TNCs rather than having a positive impact on local communities.

AO3 4 marks

- Judgement regarding the overall economic impact of TNCs in emerging countries, evaluating positive and negative arguments.
- Judgement regarding the overall social impact of TNCs in emerging countries, evaluating positive and negative impacts.
- Judgement regarding the overall environmental impact of TNCs in emerging countries, evaluating positive and negative impacts.
- Judgement regarding the importance of foreign investment (TNCs) in the economic development of the country.
- Overall judgement regarding the impact of TNCs, supported by evidence.

Level	Mark	Descriptor
	0	No acceptable response
Level 1	1-3	Demonstrates isolated elements of understanding of
		concepts and the interrelationships of places, environments
		and processes. (AO2)
		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)
Level 2	4-6	Demonstrates elements of understanding of concepts and the
		interrelationship of places, environments and processes. (AO2)
		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)
Level 3	7-8	Demonstrates accurate understanding of concepts and the
		interrelationship of places, environments and processes. (AO2)
		Applies understanding to deconstruct information and
		provides 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)

Performance	Marks	Descriptor
SPaG 0	0	No marks awarded
		Learners write nothing.
		• Learner's response does not relate to the question.
		• Learner's achievement in SPaG does not reach the
		threshold performance level, for example severe errors
		in spelling, punctuation and grammar severely hinder
		meaning.
SPaG 1	1	Threshold performance
		Learners spell and punctuate with reasonable
		accuracy.
		• Learners use rules of grammar with general control of
		maning overall.
		Learners use a limited range of specialist terms as
CnaC 2	2.2	appropriate.
SpaG 2	2-3	Intermediate performanceLearners spell and punctuate with considerable
		accuracy.
		Learners use rules of grammar with general control of
		meaning overall.
		Learners use a good range of specialist terms as
		appropriate.
SpaG 3	4	High performance
		Learners spell and punctuate with considerable
		accuracy.
	I .	·

• Learners use rules of grammar with effective control of
meaning overall.
 Learners use a wide range of specialist terms as
appropriate.

Questio	Answer	Marks
n number		
3a (i)	C A city with a much larger influence than the other cities in the country.	1
	All other answers are incorrect.	
3a (ii)	Award 1 mark for the correct definition. A megacity is a city with a population of 10 million or more (1).	1
3b (i)	Award 1 mark for the calculation for a mean value. The addition of the % annual rate of change of the urban population values divided by 6 and a further mark for the mean correctly calculated to 1 decimal place. Addition of the values 25.68 / 6 (=4.28) (1) 4.3% or 4.3 (1)	2
3b (ii)	Award 1 mark for correctly stating why rates of urbanisation may differ between countries and a further mark for explanation of that reason. In some countries, there may be more rapid rates of rural to urban migration (1) due to investment in urban locations from TNCs (1). In some countries, there may be more rapid rates of natural increase (1) especially in cities where access to contraception may be an issue (1). In some countries, civil war and the lack of security in rural areas (1) has led to rapid rural-urban migration as people seek safety (1). Some countries already have a high percentage of their total population which is urban (1) so the rates of urbanisation may be smaller (1). Accept any other appropriate response.	2
3c (i)	B – Workers pay taxes on their earnings. All other responses are characteristics of informal employment.	1
3c (ii)	Award 1 mark for the correct answer. 84.8%-14.2% = 70.6% or 70.6 (1).	1
3c (iii)	Award 1 mark for identifying a reason why people work in informal employment in developing countries and a further mark for an extension of that difference up to a max of 2 marks for each explanation. • In low income countries there are often a larger number of informal workers due to a lack of formal jobs (1) because of a lack of investment (1).	4

	 In developing world cities there is a lack of formal jobs (1) caused by rapid rural-urban migration (1). In developing world cities people often lack the skills required in formal jobs (1) because of a poor education (1). 	
	Please note: Take care to avoid double crediting responses. Only allow 1 mark for lack/shortage of formal jobs.	
	Accept any other appropriate response.	
3d (i)	C Commercial.	1
	The image clearly shows the central business district with tall, high-density buildings.	
	A Residential areas are visible mainly in the north of the image but are not the main type of land use. B With the area being so high density with tall buildings, it is apparent there is a lack of industry which would require very large sites. The cost of land in the area would be restrictive to industrial	
	development. D There is some transport in the area with highway 75 and 375 visible as well as the Detroit People Mover but commercial land use dominates.	
3d (ii)	Award 1 mark for each valid description of the location of sporting facilities in the area using the compass point or a description of its proximity to a feature or use of the scale. The facilities may be described as a group or individually. Allow a maximum of 1 proximity mark.	2
	 Sporting facilities are found to the north of the central business district (1). Sporting facilities 1 and 2 are close to Highway 75 (1). Sporting facility 3 is close to Highway 375 (1). They are close to residential areas (1). The sporting facilities are found quite close to each other (1). Sporting facility 2 is found very close to sporting facility 3 (1) 	
	 Sporting facility 1 is 300m North of the boundary of the CBD (1). Sporting facilities are outside of the CBD area (1). Accept any other appropriate response. 	
3d (iii)	Award one mark for identifying an advantage of the location of the site and a further mark for extension of that factor, up to a maximum two marks each. • The site is close to the Detroit people mover (1) which will provide easy access for the public. (1). • Being a redevelopment site, it may be an area of vacant land (1)	4
	which will minimise redevelopment costs (1).	

	 The site is in near many other large commercial premises / in Detroit's CBD (1) making it an area with high footfall (1). The site is close to many major roads (1) which improve accessibility (1). The site would be attractive for residential development as it is approx. 600-700m north of the Detroit River (1), which could provide attractive waterfront walks (1). Accept any other appropriate response. 	
3 (e)	Award one mark for identifying a locational factor which has contributed to the growth of the megacity and further marks for explanation of the factor identified. Growth can be explained in terms of a cities' economic, physical or demographic growth. • Mumbai's location on the West coast of India (1) allows it to easily trade with both the Middle East and European countries (1) helping it to develop its huge port through imports and exports (1). • Being situated close to huge oil reserves (1) has enabled Lagos to become an important oil port (1) which has attracted large numbers of migrants to the city (1). • Situated centrally on the Chinese coast (1), Shanghai has developed as a major port both nationally and internationally (1). This has helped it to become a major export zone for TNC's (1). • Jakarta's position limits growth to the north and west (1). Most of the growth has been to the south of Jakarta Bay (1). The land near the coast is flat making it an attractive site for industry (1). NB The location factor which has been identified needs to be accurate. A generic answer identifying a locational factor lacking accurate application to a megacity max 1 mark.	3
3 (f)	ACCEPT any other appropriate response. AO2 (4 marks) / AO3 (4 marks) • Quality of life is the standard of health, comfort, and happiness experienced by an individual or group. • Levels of education impact upon the quality of life in megacities. In Mumbai, people who have had a poorer education find themselves living in shanty towns such as Dharavi whereas highly educated middle class people in formal sector jobs live in wealthier areas such as Malabar Hills. • Lower levels of education, and lower incomes often lead to living in slum accommodation such as Makoko in Lagos. Here, access to safe drinking water is a problem leading to increased incidence of disease. In contrast, the expensive housing in Banana Island with its wealthier residents have access to healthcare as well as clean drinking water. • Infrastructure provision can vary enormously across a city with authorities lacking the resources to provide city-wide coverage. For example, some areas may be connected to a water supply or	8

electricity network whereas some more informal settlements may not have such facilities.

AO3 (4 marks)

Judgement about which of the factors which have the greatest impact on overall quality of life.

Judgement regarding the level of disparity in quality of life between the different residential areas of the megacity.

Judgement regarding improvements to quality of life being made in shanty town areas as residents become more assimilated into city life.

Judgement regarding the ability of the government to improve the quality of life for residents in areas where the quality of life is an issue.

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	0	No acceptable response
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		understanding and connections are flawed.
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Level 3	7-8	 Demonstrates accurate understanding of concepts and the interrelationship of places, environments and processes. (AO2) Applies understanding to deconstruct information and provides 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)