GradeMax



Mark Scheme (Results)

Summer 2021

Pearson Edexcel International GCSE
In Bangladesh Studies (4BN1)
Paper 02: The landscape, people and economy of Bangladesh

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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
1(a)(i)	AO3 (1 mark) C July (1) Only C can be correct. A, B, and D (January, February and November) are all below 25^{oC}.	**(1)**

Question Number	Answer	Mark
1(a)(ii)	AO3 (1 mark) 160mm (1) June (580), July (740) - difference 160. Accept answers between 150-170mm.	**(1)**

Question number	Answer	Mark
1(a)(iii)	AO1 (2 marks) Award 1 mark for each suitable reason, and a further mark for indication of how this affects rainfall. • Subtropical monsoon climate (1) leads to higher rainfall during the late spring and summer months (1). • Bangladesh has a subtropical monsoon climate (1) which leads to wide variations in climatic characteristics, including rainfall (1). • High rainfall in the monsoon season June to October (1) due to subtropical monsoon climate (1). • Three distinct seasons in Bangladesh (1) with high rainfall during monsoon season (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
1(b)	AO1 (1 mark)/AO2 (2 marks) Award 1 mark for suitable negative impact and 2 further marks for expansion, up to a maximum of 3 marks. Only credit **one** impact. • Increased CO_2 emissions (1) from burning fossil fuels such as coal (1) which contributes to climate change (1). • Burning fossil fuels can increase air pollution (1) which can lead to health problems (1) and greater mortality (1). • Mining activities damage the landscape (1) and which can destroy habitats (1) and reduce biodiversity. • Depleting energy sources (1) which reduces energy security (1) creating the need for energy imports (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
1(c)	AO2 (2 marks)/AO3 (2 marks) Award 1 mark for each suitable process identified, with a further mark for development up to a maximum of 2 marks for each strategy. Only **two** processes should be credited. • Glacial ablation: loss of ice mass from the glacier (1), often through melting at the snout (1). • Glacial accumulation: build-up of snow and frozen material on the glacier surface (1) which becomes compacted (1). Accept any other appropriate response.	**(4)**

<table>
<tr><th>Question number</th><th colspan="2">Indicative content</th></tr>
<tr><td>1(d)</td><td colspan="2">AO1 (3 marks)/AO2 (3 marks)

The indicative content below is not prescriptive and candidates are not required to include all the material indicated as relevant. Other relevant material not suggested below must also be credited.

Indicative content

• Bangladesh has made progress in reducing the number of deaths and injuries from cyclones, particularly in the last 20 years. A severe cyclone (Sidr) in 2007 caused 4,234 deaths, 110-fold reduction compared to 1970 event which killed over 500,000.
• The government of Bangladesh has sought to improve the country’s disaster infrastructure with significant investment. While the funding for these may be from government or other funders, the actions often take place at the local level.
• Cyclone Preparedness Programme – joint programme with Government and Bangladesh Red Crescent society that provides an early warning system for coastal populations of 13 districts.
• Building and maintaining cyclone shelters: ensuring communities have suitable shelters for cyclone events, and ensuring they are maintained.
• Through the Coastal Embankment Improvement Project (in collaboration with the World Bank) maintaining coastal embankments, involving regular monitoring and repair work where necessary – for example polders in southwest coastal region.
• Education programmes have been developed to ensure there are people trained to response to cyclone warnings. Establishing local evacuation plans and raising local awareness of risks and actions to take.
• Mangrove afforestation programmes to strengthen coastal protection started in the 1960s and since then over 120,000ha of mangroves have been planted.</td></tr>
<tr><td>Level</td><td>Mark</td><td>Descriptor</td></tr>
<tr><td></td><td>0</td><td>No rewardable material.</td></tr>
<tr><td>Level 1</td><td>1–2</td><td>• Demonstrates limited understanding of concepts, some of which may be inaccurate or irrelevant. (AO1)
• Demonstrates unsustained links to the conceptual focus of the question, which are not developed. (AO2)</td></tr>
<tr><td>Level 2</td><td>3–4</td><td>• Demonstrates partial understanding of concepts, which are mostly accurate and relevant. (AO1)
• Demonstrates some links to the conceptual focus of the question, which are partially developed. (AO2)</td></tr>
</table>

Level	Mark	Descriptor
Level 3	5–6	• Demonstrates thorough understanding of concepts, which are accurate and relevant. (AO1) • Demonstrates sustained links to the conceptual focus of the question, which are developed. (AO2)

Question number	Indicative content
1(e)	AO2 (4 marks)/AO3 (4 marks) The indicative content below is not prescriptive and candidates are not required to include all the material indicated as relevant. Other relevant material not suggested below must be credited. The command word 'Assess' requires candidates to consider a number of factors and give a reasoned explanation of the factor or factors felt to be the most important. **Indicative Content** • Bangladesh experiences frequent flood events. There are three very extensive river networks run through the country (around 230 rivers) the Ganges, Meghna and Brahmaputra, as well as low lying coastal land. • Due to large river networks, a larger proportion for the country is part of a flood plain or delta. • There are a range of causes which contribute to flooding. Candidates may discuss how different areas are affected by different types of flooding i.e. river vs coastal and different causes may be more important in different areas. **Human** • Deforestation in the upper course of the river, leading to greater runoff and faster soil erosion. Rivers silt up due to increased soil erosion, this can raise the river bed, reduce river capacity and as a consequence increase the likelihood of flooding. • Urbanisation around areas on the flood plain, increases run-off, as well as reduced interception from vegetation, leading to reduced lag times and increased flooding. • Poorly maintained river embankments which can make them more susceptible to collapse during flood events. • Bangladesh is at risk from the impact of human induced climate change, which is thought to lead to increased rainfall, increased extreme weather events including cyclones, flooding events, particularly in the delta region, as well as sea level rise. **Physical causes**

	• Monsoon climate leads to heavy rainfall from June to October. Around 80% of Bangladesh's rainfall takes place during monsoon season, typically leading to periods of flooding. • Snowmelt from the Himalayas in the late spring and summer leads to increased river volume and flooding. • Tropical cyclones create strong winds and heavy rain, as well as storm surges which can cause flooding with particularly affect the delta region. Cyclone Sidr in 2007 hit Bangladesh with heavy rains and accompanied by storm surges up to 6m high which led to flooding in low lying areas. • Much of the Bangladesh is low lying, making it more susceptible to flooding: 70% of the country is less than 1m above sea level.	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1–3	• Demonstrates isolated elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2) • An unbalanced or incomplete argument that provides limited consideration of factors, leading to judgements and a final conclusion that are not supported by evidence. (AO3)
Level 2	4–6	• Demonstrates elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2) • An imbalanced argument that provides some consideration of factors, leading to judgements and a final conclusion that are partially supported by evidence. (AO3)

Level	Mark	Descriptor
Level 3	7–8	• Demonstrates accurate understanding of concepts and the interrelationship between places, environments and processes. (AO2) • A balanced, well-developed argument that provides thorough consideration of factors, leading to judgements and a final conclusion that are well supported by evidence. (AO3)

Question number	Answer	Mark
2(a)(i)	AO3 (1 mark) C 17.8 (1) This is the correct figure for 2012. 12.8 would be 2008, 16.8 would be 2011 and 18.8 is not relevant for any points on the graph.	**(1)**

Question number	Answer	Mark
2(a)(ii)	AO3 (1 mark) Award 1 mark for a suitable challenge. • High costs (1) • Reduced energy security (1) • Dependence on other countries (1) • Increased debt (1) • Negative balance of trade (1)	**(1)**

Question number	Answer	Mark
2(b)	AO1 (2 marks) Award 1 mark for each correct factor, up to a maximum of 2 marks. • Relief (1) • Population distribution (1) • Transport networks (1) • Climate (1) • Investment in machinery (1)	

	• Access to investment (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
2(c)	AO1 (1 mark)/AO2 (2 marks) Award 1 mark for suitable reason and 2 further marks for expansion, up to a maximum of 3 marks. Only credit one reason. • High population densities (1) with more skilled workers (1) due to greater education facilities/access to universities (1). • Transport facilities (1) to increase accessibility (1) for people and goods (1). • To be located close to other relevant businesses and services (1) who may be their clients (1) to ensure they can continue to grow (1). • Government incentives (1) some firms are encouraged to set up in certain locations (1) which can reduce costs and increase profits (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
2(d)	AO2 (2 marks)/AO3 (2 marks) Award 1 mark for each suitable impact identified, with a further mark for explanation, up to a maximum of 2 marks. Only two impacts should be credited. • Land is cleared / deforestation (1) can lead to soil erosion as soil is exposed/can damage habitats for other species (1). • Food chains are interrupted (1) which leads to loss of biodiversity (1). • Chemical pesticides can cause water pollution (1) which can affect drinking water supplies (1). • Air pollution caused by machinery (1) as part of mineral extraction (1). Accept any other appropriate response.	**(4)**

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<tr><td>2(e)</td><td colspan="2">AO1 (3 marks)/AO2 (3 marks)

The indicative content below is not prescriptive and candidates are not required to include all the material indicated as relevant. Other relevant material suggests below must also be credited.

Indicative content

There are a wide range of TNCs present in Bangladesh that candidates might discuss. Unilever, HSBC, H&M, Nestle, Siemens, for example. Answers should focus on the positive or negative impacts of the presence of TNCs.

Positive Impacts
• TNCs can provide a range of more highly skilled employment and training opportunities, therefore increasing the potential to increase income and develop transferable skills.
• TNCs can bring increased foreign investment into Bangladesh, which can improve not only services but technology and infrastructure too, which in turn can improve quality of life for some local people.
• Presence of TNCs can introduce aspects of different international cultures to the people of Bangladesh.

Negative Impacts
• Often a substantial proportion of TNCs profits are sent back to the country where the headquarters is located, therefore not necessarily generating income which will benefit Bangladesh and its people directly.
• Introduction of more globalised companies may influence local culture and practices, such as types of food, therefore causing a threat to local cultures.
• Sometimes TNCs may locate in Bangladesh due to lower wage costs, and so workers may feel exploited. Although TNCs often require highly skilled workers, sometimes these are imported from other countries, and therefore not benefitting local workers.</td></tr>
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		question, which are partially developed. (AO2)
Level 3	5–6	• Demonstrates thorough understanding of concepts, which are accurate and relevant. (AO1) • Demonstrates sustained links to the conceptual focus of the question, which are developed. (AO2)

Question number	Indicative content
2(f)	AO2 (4 marks)/AO3 (4 marks) The indicative content below is not prescriptive and candidates are not required to include all the material indicated as relevant. Other relevant material suggests below must also be credited. The command word 'Assess' requires candidates to consider a number of factors and give a reasoned explanation of the factor or factors felt to be the most important. **Indicative content** • Education about farming practices has been a key component of working towards food security. Around half of Bangladesh's population work in agriculture, with this closer to 87% in rural areas. • A key element of this has also been education programmes: Since 2011 the Integrated Agricultural Productivity Project (IAAP) providing technical training to 300,000 farmers and improved irrigation for nearly 27,750. • Organisations such as BRAC provide technical knowledge and education about diversified fish culture practices in order to increase production. • National Agricultural Technology Program focuses on increasing productivity as well as food security, and adaptation to climate change. This includes supporting education to improve women's participation in agriculture as well as improving access to technology and farming practices. Education has been an important for increasing agricultural production in conjunction with a number of other strategies: • Bangladesh has created a consistent programme and series of investment in technology and rural infrastructure to facilitate increased production. • Use of appropriate technology in farming communities has helped increase production particularly on small scale farms, as these options are more easily affordable and easy to maintain. • The Green Revolution in Bangladesh increased agricultural production. High yielding varieties of crops were introduced such as IR-8 rice, as well as crops that were more tolerant to extreme conditions. A range of fertilisers were introduced to increased yields as well as pesticides to reduce loss of production through pests. Improved irrigation methods also increased yields. Through mechanisation and the increased use of technology on the farm, larger areas of land could be farmed more efficiently. • More recently the use of selective breeding and GM crops with specific traits (tolerant to higher water levels for example, or ability to cope with drier conditions).

	• Many organisations recognise the need to address a range of issues to increase food production e.g. BRAC which promotes high yield and sustainable agriculture technologies, promote climate-resilience crop varieties, encourage crop diversification as well as provide technical knowledge and education.	
Level	Mark	Descriptor
	0	No rewardable material
Level 1	1–3	• Demonstrates isolated elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2) • An unbalanced or incomplete argument that provides limited consideration of factors, leading to judgements and a final conclusion that are not supported by evidence. (AO3)
Level 2	4–6	• Demonstrates elements of understanding of concepts and the interrelationship between places, environments and processes. (AO2) • An imbalanced argument that provides some consideration of factors, leading to judgements and a final conclusion that are partially supported by evidence. (AO3)
Level 3	7-8	• Demonstrates accurate understanding of concepts and the interrelationship between places, environments and processes. (AO2) • A balanced, well-developed argument that provides thorough consideration of factors, leading to judgements and a final conclusion that are well supported by evidence. (AO3)

Question number	Answer	Mark
3(a)(i)	AO3 (1 mark) A Khulna Cannot be B, C, D as the other districts have different densities.	**(1)**

Question number	Answer	Mark
3(a)(ii)	AO3 (1 mark) Award 1 mark for correct definition. • The average number of people living per square kilometre. (1) • The number of people living in an area. (1)	**(1)**

Question Number	Answer	Mark
3(b)	AO1 (2 marks) Award 1 mark for each correct cause, with a further mark for the development of this cause up to a maximum of 2 marks. • Increased greenhouse gases (1) caused by burning fossil fuels (1). • Increased CO_2 emissions from cars (1) leading to the enhanced greenhouse effect. (1) • Deforestation (1) causing increased CO_2 in the atmosphere (1). • Intensive pastoral agriculture (1) as cows release methane (1). • Increased sunspot activity (1) causing changes to solar radiation (1). Accept any other appropriate response.	**(2)**

Question number	Answer	Mark
3(c)	AO1 (1 mark)/AO2 (2 marks) Award 1 mark for suitable strategy and 2 further marks for expansion, up to a maximum of 3 marks. Only credit **one** strategy. • Access to micro-finance (1) allows families to develop a small business (1) which can allow them to move away from subsistence farming (1). • Introducing financial incentives for health workers (1) to try and increased amount of health workers in rural areas (1) in order to reduce mortality rates (1). • Investment in education facilities (1) to ensure children have sufficient skills to be able to get a job (1) and support their families in the future (1). Accept any other appropriate response.	**(3)**

Question number	Answer	Mark
3(d)	AO2 (2 marks)/AO3 (2 marks) Award 1 mark for each suitable reason identified, with a further mark for explanation, up to a maximum of 2 marks. Only two reasons should be credited. Reasons for changes to birth rate and death rate must be different. • Decline in birth rate: ○ Improved health care facilities (1) which means more children are likely to survive childhood (1). ○ Increased education about contraception (1) which mean people can choose to limit their family size (1). ○ Women choose to marry later (1) which reduced childbearing time span (1). • Decline in death rate: ○ Improved medical facilities (1) mean reduced fatalities from some illnesses (1). ○ Better access to a nutritious diet (1) means less people die from lack of food or poor diet	**(4)**

	(1). ○ Better access to water and sanitation facilities (1) which means spread of some diseases are reduced (1). Accept any other appropriate response.	

Question number	Indicative content	
3(e)	AO1 (3 marks)/AO2 (3 marks) The indicative content below is not prescriptive and candidates are not required to include all the material indicated as relevant. Other relevant material suggests below must also be credited. **Indicative content** • Bangladesh is particularly vulnerable to climate change due to large areas of low-lying land, high population densities and inadequate infrastructure. • Climate change is projected to change the intensity and frequency of natural disasters, exacerbate the extent of river and coastal flooding as well as negatively impact agricultural productivity, infrastructure and development projects. Relevant points that may be discussed include: • People may be forced to leave their homes. Two thirds of Bangladesh's population live less than 5m above sea level, and 28% live on the coast. This means any rise in sea level has the potential to flood a lot of homes and agricultural land. By 2050 there is a projected 50cm rise in sea level which would lead to Bangladesh losing around 11% of its land and displacing 1 million people. • Salinity intrusion from rising sea waters may impact agricultural practices, damaging crops and causing soil degradation. Farmers may have to grow crops more that are more tolerant to saline conditions. Coastal drinking water supplies may also become contaminated. • Increases in the frequency and severity of tropical storms may cause more loss of human life, plus damage to buildings and infrastructure.	
Level	Mark	Descriptor
	0	No rewardable material.
Level 1	1–2	• Demonstrates limited understanding of concepts, some of which may be inaccurate or irrelevant. (AO1) • Demonstrates unsustained links to the conceptual focus of

		the question, which are not developed. (AO2)
Level 2	3–4	• Demonstrates partial understanding of concepts, which are mostly accurate and relevant. (AO1) • Demonstrates some links to the conceptual focus of the question, which are partially developed. (AO2)
Level 3	5–6	• Demonstrates thorough understanding of concepts, which are accurate and relevant. (AO1) • Demonstrates sustained links to the conceptual focus of the question, which are developed. (AO2)

Question number	Indicative content
3(f)	AO2 (4 marks)/AO3 (4 marks) The indicative content below is not prescriptive and candidates are not required to include all the material indicated as relevant. Other relevant material not suggested below must be credited. The command word 'Evaluate' requires the candidate to come to a conclusion/judgement which needs to be supported with an evidence-balanced argument. **Indicative Content** • Dhaka has experienced very rapid population growth, from 3 million people in 1980 to over 18 million by 2017. • There are a range of potential opportunities provided for people living in an urban area with rapid population growth: o Increased investment in health care and education services, infrastructure and facilities which can improve quality of life. o This investment can lead to increase in secondary and tertiary sector which can increase the number of jobs available. Such opportunities provide the possibility for residents to lift themselves out of poverty into the middle class. o TNCs often locate in cities, allowing local residents to be introduced to international cultures and practices, as part of globalisation. • However, such rapid growth also poses a number of challenges. Some of these which may be discussed include: o High population densities (around 23, 234/km^2 in 2017, which can lead to a shortage of resources/food/energy/water/jobs. o Rapid growth can lead to unplanned and uneven development across the city. This can result in many

		people living in slums. An estimated 3.5 million people live in informal settlements in Dhaka. ○ Rapid growth has led to high levels of waste produced placing pressures on waste collection services. ○ High levels of air pollution leading to health issues. ○ Unplanned growth can lead to congestion. In the last 10 years average driving speed has fallen from 21 km/h to 6km with estimates this could fall further to below walking speed.
Level	Mark	Descriptor
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Level	Mark	Descriptor
Level 3	7–8	• Demonstrates accurate understanding of concepts and the interrelationship between places, environments and processes. (AO2) • A balanced, well-developed argument that provides thorough consideration of factors, leading to judgements and a final conclusion that are well supported by evidence. (AO3)