GradeMax



Mark Scheme (Results)

Summer 2019

Pearson Edexcel International GCSE
In Bangladesh Studies (4BN1) Paper 02

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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.

Paper 2 – Mark scheme

Question number	Answer	Mark
1(a)(i)	A Mangrove It cannot be any of the other answers because: Options B (Deciduous Forest), Option C (Desert) and Option D (Tropical forest) are not located on the coastline.	**(1)**

Question number	Answer	Mark
1(a)(ii)	AO3 (1 mark) Award 1 mark for correct point, maximum 1 mark. • Dense trees • Evergreen trees • Tropical forest • Rich biodiversity • High humidity • Dense undergrowth • High precipitation **Accept any other appropriate response.**	**(1)**

Question Number	Answer	Mark
1(b)	AO1 (2 marks) Award 1 mark for each correct point, up to a maximum of 2 marks. • occur June to October (1) • moderate to heavy rain (1) • consecutive days of rainfall (1) • cloudy skies (1) • high humidity (1) • south to south westerly winds (1) **Accept any other appropriate response.**	**(2)**

Question number	Answer	Mark
1(c)	AO1 (1 mark)/AO2 (2 marks) • two tectonic plates move towards each other (1) • collision plate boundary (1) • Indian and Eurasian plates (1) • plates push layers of sedimentary rock and sediments (1) • both plates of similar density so no subduction (1) • rocks crumple or fold (1) • to create mountain ridges (1)	**(3)**

Question number	Answer	Mark
1(d)	AO2 (2 marks)/AO3 (2 marks) Award 1 mark for each suitable reason, with 1 mark for each developed point, up to a maximum of 2 marks per factor. Only **two** reasons should be credited. • Frequent tropical storms are experienced near the coastlines (1) which produce strong winds that push water to the coast (1). • Large amounts of low-lying land (1) mean that a lot of land is often affected when storm surges occur (1). • Coastal management mechanisms such as embankments are not effective (1) as many have not been maintained or are damanged (1). • Mangroves provide natural coastal protection (1) and removal of mangrove to increase coastal fishing/shrimp farming has increased vulnerability (1). **Accept any other appropriate response.**	**(4)**

<table>
<tr><td>Question number</td><td colspan="2">Indicative content</td></tr>
<tr><td>1(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 not suggested below must also be credited.

Indicative Content

• Coal and natural gas: The demand for energy in Bangladesh is rapidly growing due to its population growth. Bangladesh already depends on imported non-renewable energy sources which contribute to a negative balance of trade. Non-renewable sources of energy, such as coal and gas, also release more CO_2 into the atmosphere, therefore their use should be minimised and preference given to renewable energy sources.
• Forest products: Forests provide a range of commercial products (wood, energy, honey, medicines). Forests are important ecosystems and home to a wealth of biodiversity, including both plant and animal species. Increased demand for wood for fuel and clearance for agriculture mean there has been significant loss of forest area. In areas of Chittagong Hill tracts where the forest is used for both rubber cultivation and fuel wood, biodiversity has been reduced, and soil erosion has reached up to 75%, which means the soil has become less fertile.
• Fish/shellfish: Commercial shrimp and fish farming are causing damage to mangrove forests and their ecosystems. Mangroves can act as a natural barrier to coastal and river erosion as they trap sediments. Therefore, destruction of mangroves for commercial aqua-culture increases the risk of coastal and river flooding. But shrimp farming is seen as a high value commercial product so practices continue.</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)
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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(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 also be credited. Relevant points may include: • Low-lying land in Bangladesh means that it is easily flooded, with over half the country less than 6m above sea level. Flood control measures in Bangladesh have focused around attempting to protect the main rivers from floods, flash floods in the east and north east, saline intrusion in lower delta, and improved drainage to avoid crops. • Substantial measures to reduce risk to flooding began in the 1960s, when embankments were built to protect low-lying coastal areas. Flood Action Plan was funded by the World Bank. • The Bangladesh Water Development Board has funded nearly 6,000km of embankments. • Some flood projects have had positive results. Extensive embankment system was largely successful in increasing food production and protecting some islands from storm surges. However, this encouraged more people to move to some of these vulnerable areas. • Many embankments have failed due to poor planning, design, construction, operation and maintenance. Embankments can also create a false sense of security among residents living within embanked areas. • Earthen embankments can easily be breached, and can also be damaged by riverbank erosion. Most of the embankments in Bangladesh have experienced breaching and erosion more than once since their completion. • The embankments can still be breached. E.g., in 2009, when Cyclone Alia breached embankments, 330 people were killed, 8,000 went missing and 1 million was made homeless. Breaches took several years to repair. • Efforts in flood control have made conditions in some areas worse. For example, Polder 32, a low-lying island on the coastal plain, has experienced local water levels being artificially raised thanks to previous flood control measures. • More sustainable ways of reducing flooding risk involve building houses on stilts and investing in early warning systems. • $2 billion of improvements have been planned as part of the Coastal Embankment Improvement Project to improve existing embankments along sea, estuaries and rivers, as well as drainage channels to protect from tidal activity, storm surges

	and sea level rise. This will involve upgrading embankments with reinforcement, as well as mangroves being planted to reinforce them.	
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
2(a)(i)	AO3 (1 mark) C 7,700 It cannot be any of the other answers because: A (3,700) and B (5,700) are too low, while D (9.700 if too high) as indicated in Figure 3.	**(1)**

Question number	Answer	Mark
2(a)(ii)	AO3 (1 mark) US$ 27,400 million (allow answers from 27,000 and 28,000). (2015 = 29,700 / 1995 = 2,300)	**(1)**

Question number	Answer	Mark
2(b)	AO1 (2 marks) Award 1 mark for each challenge. • Poor transport infrastructure (1) • Lack of investment (1) • Some areas are inaccessible (1) • Coping with flood events (1) • Limited rail network (1) • Congestion (1) **Accept any other appropriate response**.	**(2)**

Question number	Answer	Mark
2(c)	AO1 (1 mark)/AO2 (2 marks) Award one mark for a suitable impact identified with a further two marks for explanation, up to a maximum of 3 marks. • Imported energy sources including coal and oil are expensive (1), and this increases the negative balance of trade in Bangladesh (1) and potential for economic growth (1). • High levels of imported energy (1) reduces energy security (1) and there may be shortages of energy (1). • Alternative energy sources are needed to reduce reliance on imported energy (1) such as renewable energy sources (1) e.g. solar and wind (1). • High energy costs (1) may discourage growth of industry (1) and therefore reduce economic growth (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 factor identified, with a further mark for explanation, up to a maximum of 2 marks for each factor. Only two factors should be credited. • Relief (1) – low-lying flat plains are ideal for rice farming as they are more accessible for workers, and transport of agricultural goods (1). • Fertile soils (1) - close to the floodplains provide land more suitable for agricultural production as yields will be higher (1). • Climate (1) – favourable tropical and humid climate leads to higher density of rice production while areas with more extreme temperatures are more challenging (1). • Water supply (1) - to provide irrigation in order to facilitate increase in rice production particularly in the dry season (1). • Labour supply (1) – to grow and harvest the crops (1).	**(4)**

<table>
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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

• Green Revolution which started in the 1960s introduced a series of strategies to increase agricultural production, transforming farming practices through biochemical, mechanical and social changes.
• High yielding varieties of rice and wheat. HYVs grow faster which means there can be more crops harvested per year. HYVs are more able to resist the impact of storms. Although some HYVs have been more susceptible to pests and diseases, and they are often less resistant to drought so need greater irrigation.
• Use of fertilisers to increase yields, increasing the number of harvests per year. The use of pesticides reduces the loss of crops to insects such as the yellow stem borer, weeds taking nutrients from the soil, and diseases such as fungal growth. These are both costly to farmers and overuse can lead to damage to biodiversity in the area. These chemicals can lead to contamination of groundwater sources, which can lead to eutrophication and as a consequence death of fish and aquatic plants.
• Irrigation of surface water and ground water allows increased yields as crops are not lost due to water shortages, particularly during the dry season. However, irrigation machinery such as motor pumps can be expensive and require maintenance. This has been recognised by the government which is exploring options to support community-based solutions for maintaining irrigation structure.
• The National Agriculture Policy (2013) was designed to ensure food security and nutrition focused on increasing productivity, diversification and commercialization. This also encouraged participation of the private sector in providing quality seeds. But the plan highlighted there were weaknesses in the country that could prevent success, including lack of infrastructure, financial constraints, limited availability of agricultural credit, and lack of ICT in farming technologies used.</td></tr>
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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)

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<tr><td>2(f)</td><td colspan="2">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 also be credited.

Indicative Content

Positive Impacts:
• Can bring increased foreign investment into Bangladesh from TNCs, which can improve not only services but technology and infrastructure too, which in turn can improve quality of life.
• Increased investment from TNCs can provides a range of more highly skilled employment and training opportunities, therefore increasing the potential to increase income.
• Increased investments can lead to improvements in infrastructure and communication.
• It can foster greater awareness of what is happening in other places around the world, and can introduce new elements of global culture to Bangladesh including the ideas, experiences and lifestyles of other people and culture, for example, food, fashion, retail cultures which may impact on economic activities.

Negative impacts
• Some impacts of globalisation, such as the increased investment of TNCs do not always benefit the host country the most. Often a substantial proportion of TNCs' profits are sent back to the country where their headquarters is located, therefore not necessarily generating income which will benefit Bangladesh directly.
• Sometimes TNCs may be locating 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, therefore not benefitting local workers. TNCs may also provide too much competition for local companies in some industries, causing them to close.</td></tr>
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Question number	Answer	Mark
3(a)(i)	AO3 (1 mark) B 68 It cannot be any of the other answers because: A would be 2001, C would be 2010, and D would be 2015.	**(1)**

Question number	Answer	Mark
3(a)(ii)	AO3 (1 mark) Allow 1 mark for correct measure. • Improved health care facilities (1). • Better ante-natal and post-natal care (1). • Reductions in malnutrition (1) • Education about diet (1). • Increased access to education (1).	**(1)**

Question number	Answer	Mark
3(a)(iii)	AO1 (2 marks) Award 1 mark for each suitable measure. • per capita income (1). • years of schooling (1) / literacy rate (1).	**(2)**

Question number	Answer	Mark
3(b)	AO1 (1 mark)/AO2 (2 marks) Award 1 mark for initial point and 2 further marks for expansion, up to a maximum of 3 marks each. Only credit **one** challenge. Rural communities face a number of socio-economic challenges in Bangladesh: • Population structure of rural communities (1) - due to large scale rural to urban migration many rural communities have lost their skilled workers (1), leaving those more vulnerable behind including the elderly and less skilled (1). • Education (1) - there is a very low literacy rate (1) (66.5% males, 63.1% female, but much lower in rural areas) and access to education in rural communities is limited which can affect the ability of people to get skilled jobs (1). • Health (1) - lack of qualified medical professionals and facilities in rural areas (1) and long distances to other medical facilities (1). • Gender equality (1) - patriarchal society (1) can lead to low levels of employment for women outside of the household (1); although this is increasing due to export industry jobs in textiles. • Rural-based craft and cottage industries are an important source of income for rural households (1) with many members of the family being involved (particularly women and children) (1). This can lead to children missing out on education (1).	**(3)**

Question number	Answer	Mark
3(c)	AO2 (2 marks)/AO3 (2 marks) Award 1 mark for each suitable factor, with 1 mark for each developed point, up to a maximum of 2 marks per factor. Only **two** factors should be credited. • Relief (1) - flat low-lying areas tend to have higher population densities as it is easier to build on (1) or areas with more rough terrain tend to have lower densities as it is more difficult to build on (1). • Accessibility/Transport (1) – areas with greater transport links tend to have higher population densities (1). Remote areas with poor access have lower population densities (1). • Climate (1) - areas which experience extreme temperature tend to be more sparsely populated (1). • Soils (1) - areas with fertile soils tend to have higher population densities as they support greater agricultural activity (1). • Availability of raw materials (1) can lead to higher population densities as they can support industry (1). • Availability of water (1) needed for life, agriculture or industry (1). • Urbanization (1) existing urban settlements tend to grow rapidly due to natural increase and rural to urban migration (1).	**(4)**

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

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Indicative content

• Bangladesh is ranked as one of the most vulnerable countries to natural disasters in the world due to frequent cyclones, storm surges and floods, coupled with high population density and growth, and low climate resilience. Climate change is projected to change the intensity and frequency of natural disasters, exacerbate the extent of flooding, and negatively impact agricultural productivity, infrastructure and development prospects.
• Sea-level rise: much of Bangladesh is less than 10m above sea level. A 1m in sea level would lead to 15% of the country being submerged.
• Salinity intrusion: already affects the Bay of Bengal (around 100km into the country) and should sea level rise, this could extend this.
• More extreme weather: the country is already vulnerable to tropical storms and storm surges. Climate change may lead to higher frequency and strength of tropical storms which would increase rainfall and damage to the environment, particularly the Sundarbans mangrove forests. It could also mean that more extreme temperatures are experienced and periods of drought develop, particularly in the dry season.
• Changes in temperature: this could lead to greater melting of glaciers, leading to higher river discharges, and flooding. 80% of the country is already prone to flooding, should there be sea level rise, or an increased frequency of storms this percentage is likely to increase.</td></tr>
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Question number	Indicative content
3(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 also be credited. **Indicative Content** • Bangladesh has experienced rapid population growth leading to some of the highest population densities in the world, particularly in the urban areas. This has led to a number of challenges in cities which have required government response including shortages of resources, overcrowding, air pollution and unemployment. • Bangladesh's Vision 2021 and Perspective Plan 2010-2021 establishes a range of development targets that are designed to address many of the issues experienced in cities. • The Dhaka City Master Plan established in the 1990s made plans for developing the city and its surrounding areas with particular lands use zones (housing, industry etc.), however the plan was not followed and growth has been chaotic. Residential areas ended up being mixed with residential, commercial and industrial areas while schools, hospitals and universities have been established in residential buildings. This high-density growth in urban areas has led to challenges in transport, sanitation, and environmental health. Similarly, in Chittagong, the Chittagong Master Plan seeks to address similar issues. • Growth in urban areas has led to the growth of informal settlements. Approximately one third of urban dwellers live in informal settlements. The National Housing Policy of 1993 recognised the need for basic shelter and discouraged forced evictions and slum clearance. However, many local authorities continue to instigate attempts at clearance of these areas, often by demolishing what has been built and clearing the residents off the land. This has not been very successful as many people just move to different informal settlements or rebuild the ones destroyed. • The government has made efforts to upgrade facilities in some informal settlements providing water supplies and public toilets in an effort to improve sanitation and reduce spread of disease. However, this has only reached a small proportion of people that live in these settlements. • Dhaka is one of the world's worst cities in terms of air quality. The government has backed a World Bank project on Clean Air and Sustainable Environment focusing on reducing pollution from brick kilns and transport which contribute to a lot particulate pollution. This has involved encouraging adoption of cleaner brick kiln technologies that use less energy, as well as trying to provide more safe pedestrian routes to reduce traffic. • In 2010 the government ordered fixed chimney kilns to be shut down by 2013; however, the deadline keeps being extended and is not enforced. There is a history of poor environmental

	regulation. For example, it has been illegal to burn firewood in kilns since 1989, yet millions of tonnes of firewood are burnt each year as the regulations are not enforced. • To alleviate both air pollution and traffic congestion in cities mass rapid transit systems have been introduced by government in some cities such as Dhaka. The Dhaka mass rapid transit company established in 2013 with routes from Gazipur to the airport, and many other routes planned. • In Chittagong the initiative 'Green Chittagong, Clean Chittagong' aimed to co-ordinate government, business and the public to improve living environments including cleaning footpaths, roads and drains, ensuring waste management and flood management systems were maintained.	
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