



**Cambridge International Examinations**  
Cambridge International General Certificate of Secondary Education

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**BANGLADESH STUDIES**

**0449/02**

Paper 2 Environment and Development of Bangladesh

**May/June 2017**

MARK SCHEME

Maximum Mark: 75

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**Published**

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This document consists of **14** printed pages.

Question	Answer	Marks												
1(a)(i)	<p><b>Study Fig. 1 which shows the Jamuna-Brahmaputra river. In which direction does the Jamuna-Brahmaputra river flow through Bangladesh?</b></p> <p>South / South-easterly (into Bay of Bengal)</p>	1												
1(a)(ii)	<p><b>Fig. 2 shows the size of sediment suspended in different tributaries of the Jamuna-Brahmaputra river. Complete Fig. 2 using the following information.</b></p> <p><b>right bank tributaries:</b></p> <ul style="list-style-type: none"> <li>• large – 8%</li> <li>• medium – 17%</li> <li>• small – 75%</li> </ul> <p>2 marks for 2 correct line plots 1 mark for correct shading of all parts</p>	3												
1(a)(iii)	<p><b>Using Fig. 2 describe the differences in the size of sediment carried by the left and right bank tributaries.</b></p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td></td> <td>right</td> <td>left</td> </tr> <tr> <td>large</td> <td>8%</td> <td>15%</td> </tr> <tr> <td>medium</td> <td>17%</td> <td>40%</td> </tr> <tr> <td>small</td> <td>75%</td> <td>45%</td> </tr> </tbody> </table> <p>Left bank more large sediment than right Left bank more medium sediment than right Right bank more small sediment than left</p> <p><u>Alternative approach:</u> Left bank less large sediment and more medium and small sediment Right bank has more small sediment and less medium and large sediment</p>		right	left	large	8%	15%	medium	17%	40%	small	75%	45%	3
	right	left												
large	8%	15%												
medium	17%	40%												
small	75%	45%												
1(b)	<p><b>The deposition of sediment can lead to the formation of several river features. Describe and explain the formation of a <u>braided</u> channel. You may use a diagram to illustrate your answer.</b></p> <p>Reserve 1 for each of description and explanation</p> <p><u>Description:</u> River divided into smaller channels Small islands / eyots / chars / bars Or labels on diagram</p> <p><u>Explanation:</u> Rives carries lots of (sedimentary) load Discharge changes regularly Deposition <u>when</u> load exceeds capacity (Deposition) when discharge drops / river slows down / loss of energy Accumulation of sediments River channel blocked, river splits</p>	4												

Question	Answer	Marks
1(c)	<p><b>The rivers of Bangladesh often meander.</b> <b>Study Fig. 3 which shows a cross-section through a meander.</b></p> <p><b>Write the following words in the correct boxes on Fig. 3.</b></p> <ul style="list-style-type: none"> <li>• erosion</li> <li>• deposition</li> <li>• river cliff</li> <li>• slip-off slope</li> </ul> <p>1 mark for each correctly placed letter</p>	4
1(d)(i)	<p><b>The Jamuna-Brahmaputra river is managed by The Core Professional Group for the Brahmaputra, which is an NGO.</b></p> <p><b>Explain what is meant by an NGO.</b></p> <p>Non-governmental organization / not controlled by government Non-profit making / not commercial Based on donations / foreign aid / charity</p>	2
1(d)(ii)	<p><b>Describe <u>one</u> type of work which is done by NGOs in rural areas of Bangladesh.</b></p> <p>Only ONE type of work.</p> <p><u>For example:</u> Empowering the poor Improvement of health services Improvement of education services Distribution of food / medicine Improvement of infrastructure etc.</p> <p>+ 2 development marks for details</p>	3
1(e)(i)	<p><b>Study the two statements below.</b> <b>A ‘Controlling the flow of the Jamuna-Brahmaputra river is not possible.’</b> <b>B ‘It is important to control the flow and erosion of the Jamuna-Brahmaputra river.’</b></p> <p><b>Give <u>one</u> piece of evidence which supports statement A.</b></p> <p>Head waters in India Massive flow / many rivers join it Very expensive Majority of land is floodplain / delta / low-lying Monsoon / flash / rainfall induced floods Variation on flow River shifting Earthquakes and river bed uplift</p>	1

Question	Answer	Marks
1(e)(ii)	<p><b>Give <u>one</u> piece of evidence which supports statement B.</b></p> <p>Causes floods Loss of cash crops Loss of basic food supply Loss of infrastructure Loss of life Increases poverty</p>	1
1(e)(iii)	<p><b>Which statement do you agree with most? Give reasons for your answer.</b></p> <p>No marks for stating A or B, only for giving reasons Credit reasons for accepting one and rejecting the other Accept answers that give support to both statements Allow points to be developed</p>	3

Question	Answer	Marks
2(a)(i)	<p><b>Study Fig. 4, which is a map showing the distribution of forests in Bangladesh.</b></p> <p><b>Describe the distribution of deciduous forest in Bangladesh.</b></p> <p>Centre / Dhaka / Mymensigh / Gazipur / Tangil NE / Sylhet NW / Dinajpur / Ranjpur</p>	3
2(a)(ii)	<p><b>Fig. 5 shows the land area covered by forest and the total forest lost in three countries between 2001 and 2012.</b></p> <p><b>Complete Fig. 5 using the following figures.</b></p> <ul style="list-style-type: none"> <li>land area covered by forest – Myanmar 68%</li> <li>total forest lost between 2001 and 2012 – Bangladesh 2%</li> </ul> <p>One mark for each column correctly drawn and shaded</p>	2
2(a)(iii)	<p><b>Why is deforestation taking place in Bangladesh?</b></p> <p>Wood for domestic use or e.g. fuel / cooking Timber or e.g. making furniture / house construction</p> <p><u>Land for:</u> Houses / settlements Agriculture Shrimp culture Industries / factories Roads Mining</p>	4

Question	Answer	Marks
2(b)(i)	<p><b>Describe the challenges created by deforestation for:</b></p> <p><b>farming</b></p> <p>Increased run-off Increased wind erosion / soil erosion Less rainfall / drier climate reduces crop production</p>	<b>2</b>
2(b)(ii)	<p><b>climate</b></p> <p>Increase in CO<sub>2</sub> Global warming / increase temperature Reduced rainfall / less transpiration / increase drought / decrease humidity</p>	<b>2</b>
2(b)(iii)	<p><b>urban areas</b></p> <p>More air pollution / haze + development mark e.g. breathing problems Animals losing habitat moving into urban areas etc.</p>	<b>2</b>
2(c)(i)	<p><b>Why are mangrove forests found in coastal areas?</b></p> <p><u>Coastal areas are:</u> Waterlogged / swampy Saline</p> <p>Roots snorkel for air / pneumatophorus roots Strong root system Turn leaves to reduce transpiration Seeds can float Excess salt lost in old leaves Salt lost through glands in leaves etc.</p>	<b>2</b>
2(c)(ii)	<p><b>Using examples explain how forests are important to the wildlife in Bangladesh.</b></p> <p>Named e.g. Sundarbans, Royal Bengal Tiger etc. Habitat / shelter Food supply Endangered species Maintain biodiversity / ecological balance Interdependent plants / food chain</p>	<b>3</b>

Question	Answer	Marks
2(d)(i)	<p><b>Air pollution and water pollution are two growing challenges in Bangladesh and also globally.</b></p> <p><b>Study the two statements below.</b></p> <p><b>A ‘Environmental laws are the only way to control pollution.’</b> <b>B ‘Education and monitoring are the only sustainable ways to control pollution.’</b></p> <p><b>Give <u>one</u> piece of evidence which supports statement A.</b></p> <p>Strict control / laws will directly influence people’s behavior Need fines for ignoring guidelines Extreme consequences on the natural environment</p>	<b>1</b>
2(d)(ii)	<p><b>Give <u>one</u> piece of evidence which supports statement B.</b></p> <p>Sustainable approach alters behaviour Ensures people understand consequences Leads to correct use of fertilisers / pesticides Ensures correct use of existing waste disposal facilities</p>	<b>1</b>
2(d)(iii)	<p><b>Which statement do you agree with most? Give reasons for your answer.</b></p> <p>No marks for stating A or B, only for giving reasons Credit reasons for accepting one and rejecting the other Accept answers that give support to both statements Allow points to be developed</p>	<b>3</b>

Question	Answer	Marks
3(a)(i)	<p><b>Study Fig. 6 which shows the birth rate and death rate in three countries in 2013.</b></p> <p><b>Using Fig. 6 calculate the rate of natural growth for each country. Use the figures to complete the table below.</b></p> <p>Bangladesh India Myanmar</p>	<b>3</b>
3(a)(ii)	<p><b>Suggest why some families in Bangladesh may have a large number of children.</b></p> <p>More children to work To look after elderly High infant mortality rate Lack of access to contraceptives Lack of education or knowledge about family planning Lack of female education / women don’t have careers Tradition of large families / family name / want a son Early marriage</p>	<b>2</b>

Question	Answer	Marks																																
3(b)(i)	<p><b>Study Fig. 7 which shows infant mortality rates from 2010 to 2013.</b></p> <p><b>Using information from Fig. 7 describe what progress is being made towards reducing infant mortality rates.</b></p> <p><u>Overall 2010 to 2013:</u>            All countries reducing IMR            Bangladesh reducing IMR from 39 to 35 /by 4 / reduces to 2012 then constant            Myanmar reducing IMR from 46 to 42 / by 4            India reducing IMR from 46 to 41 / by 5            Slow / steady reduction            Similar rate / amount of decline in all countries            India has highest rate of reduction</p> <p><u>Year by year:</u></p> <table border="1"> <thead> <tr> <th></th> <th>2010</th> <th></th> <th>2011</th> <th></th> <th>2012</th> <th></th> <th>2013</th> </tr> </thead> <tbody> <tr> <td>Bangladesh</td> <td>39</td> <td>decline to</td> <td>37</td> <td>decline to</td> <td>35</td> <td>=</td> <td>35</td> </tr> <tr> <td>Myanmar</td> <td>46</td> <td>decline to</td> <td>45</td> <td>decline to</td> <td>43</td> <td>decline to</td> <td>42</td> </tr> <tr> <td>India</td> <td>46</td> <td>decline to</td> <td>44</td> <td>decline to</td> <td>43</td> <td>decline to</td> <td>41</td> </tr> </tbody> </table>		2010		2011		2012		2013	Bangladesh	39	decline to	37	decline to	35	=	35	Myanmar	46	decline to	45	decline to	43	decline to	42	India	46	decline to	44	decline to	43	decline to	41	3
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3(b)(ii)	<p><b>How is Bangladesh reducing its infant mortality rate?</b></p> <p>Improved medical supplies / health care systems            Improved maternal health            Immunisation programmes            Improved food supplies            Improved education <u>about</u> ...            Improved sanitation            Improved access to <u>clean</u> water</p>	2																																
3(c)(i)	<p><b>What is meant by urbanisation?</b></p> <p>Increasing population living in towns and cities</p>	1																																
3(c)(ii)	<p><b>Study Fig. 8 which shows the rate of growth of urbanisation and the percentage of people living in urban areas in 2015.</b></p> <p><b>Complete the graph for Pakistan using the following figures.</b></p> <ul style="list-style-type: none"> <li>• rate of urbanisation – 2.8%</li> <li>• people living in urban areas – 39%</li> </ul> <p>One mark for each bar correctly drawn and shaded</p>	2																																
3(c)(iii)	<p><b>Give <u>three</u> reasons for the high rate of urbanisation in Bangladesh.</b></p> <p>Rural to urban migration            Any push or pull factors valid for Bangladesh</p>	3																																

Question	Answer	Marks
3(d)(i)	<b>What is meant by industrialisation?</b>  Country moves from agricultural to manufacturing society / increasing secondary sector / growth of industry	<b>1</b>
3(d)(ii)	<b>Describe how the state can support industrialisation.</b>  Improve infrastructure / transport Improve reliability of energy supplies Training Decrease tax on imported machines Increase tax / tariffs / quotas on manufactured imports Give subsidies to small industries / Government investment in industry Help reduce bank debt to encourage loans / investment / low interest bank loans Privatisation of state owned industries Provide stable political situation Attract MNCs / FDI Encourage export orientated industries Provide proper legal framework Technological support Land allocated for factories	<b>3</b>
3(e)(i)	<b>Study the two statements below.</b>  <b>A 'Urbanisation creates many challenges in Bangladesh and could be controlled further.'</b> <b>B 'The movement of people to cities is a natural part of the country's development and is to be encouraged.'</b>  <b>Give <u>one</u> piece of evidence which supports statement A.</b>  30% live in slums e.g. Dhaka Pressure on infrastructure – water, electricity etc. Pressure on services – education, health etc. Need for food supply Just transfers problems from rural to urban	<b>1</b>
3(e)(ii)	<b>Give <u>one</u> piece of evidence which supports statement B.</b>  Uneven development – opportunities <u>for</u> ... in cities / lack of development in rural areas Movement from agricultural to secondary and tertiary work in cities Better <u>paid</u> jobs Better opportunities for health Better opportunities for education in cities	<b>1</b>



Question	Answer	Marks
3(e)(iii)	<p><b>Which statement do you agree with most? Give reasons for your answer.</b></p> <p>No marks for stating A or B, only for giving reasons Credit reasons for accepting one and rejecting the other Accept answers that give support to both statements Allow points to be developed</p>	3

Question	Answer	Marks
4(a)	<p><b>Study Photograph A (Insert) which shows subsistence farming in Bangladesh. Describe the types of food production shown in Photograph A.</b></p> <p><u>Description:</u> Traditional Manual labour For consumption / not for sale / no surplus Hoeing Basic tools Flood plain / low lying Shrimp fishing Small scale</p> <p><u>Types of production:</u> Wheat Rice Oil seed Pulses Fish Shrimp OR Aquaculture Agriculture</p>	4
4(b)	<p><b>How can the state help to protect its farmers from the effects of cyclones?</b></p> <p>Prediction / monitoring Better warning system Evacuation Cyclone shelters Sluice gates / barrages / dams Better drainage systems / flood protection measures Construction of stronger housing Planting trees along coast / shelter belts Encourage flood resistant crops</p>	3

Question	Answer	Marks
4(c)(i)	<p><b>Study Fig. 9 which shows the changing use of fertiliser in Bangladesh between 2002 and 2009.</b></p> <p><b>Complete Fig. 9 using the following figure.</b></p> <ul style="list-style-type: none"> <li>• <b>2004 – 1 400 000 tonnes</b></li> </ul> <p>Correct plot joined by line to other points</p>	<b>1</b>
4(c)(ii)	<p><b>Using Fig. 9, describe how the use of fertiliser has changed between 2002 and 2009.</b></p> <p><u>Overall increase</u> From 1 200 000 to 2 300 000 tonnes By 1 100 000 tonnes</p> <p>Rapid / big / steady increase to 2005 / 2006 Slow increase 2005-2006 Decrease 2006-2008 Massive / bigger increase 2008-2009</p> <p><u>Alternative approach – year by year</u> Refer to Fig. 9</p>	<b>3</b>
4(c)(iii)	<p><b>Suggest reasons for the changes in the use of fertiliser between 2002 and 2009.</b></p> <p><u>Increase</u> Green Revolution Improving yields / quality / quantity of crops Government subsidising costs / loans Increasing production of <u>cash</u> crops Varying fertility of land requires fertiliser More education / training / awareness More availability</p> <p><u>Decline</u> Not all farmers can afford Issues with use of fertilisers e.g. damages soil</p>	<b>3</b>
4(d)(i)	<p><b>Fig. 10 shows a diagram for a commercial farm.</b></p> <p><b>Suggest <u>two</u> other inputs and <u>one</u> other output for a farm growing cash crops.</b></p> <p>Inputs e.g. capital, machinery, rainfall etc. / seeds / labour Outputs e.g. profit, seed / jute / sugar cane / tea / waste products</p>	<b>3</b>

Question	Answer	Marks
4(d)(ii)	<p><b>Why is it difficult to increase the production of cash crops?</b></p> <p>Lack of capital / problems getting finance / need large investment            Lack of suitable land / need large land            Lack of good transport links            Price variation / decrease demand for jute            Lack of machinery            Lack of education / training            Increasing demand for food crops            Land ownership</p>	<b>3</b>
4(e)(i)	<p><b>Study the two statements below.</b></p> <p><b>A ‘The Green Revolution is key to Bangladesh increasing its food supply.’</b>  <b>B ‘The Green Revolution does not benefit all farmers.’</b></p> <p><b>Give <u>one</u> piece of evidence which supports statement A.</b></p> <p>Higher yields            New varieties of seed / use of HYVs / GM crops            Examples of HYV varieties e.g. Irri 6            Use of pesticides            Consolidation of land            Improved irrigation</p>	<b>1</b>
4(e)(ii)	<p><b>Give <u>one</u> piece of evidence which supports statement B.</b></p> <p>Not all farmers can afford            Can lead to outbreak of pests            Kills off natural predators            Too much fertiliser can ruin soil quality            HYVs extract a lot of nutrients from soil            Lack of education and training to use machinery / fertiliser</p>	<b>1</b>
4(e)(iii)	<p><b>Which statement do you agree with most? Give reasons for your answer.</b></p> <p>No marks for stating A or B, only for giving reasons            Credit reasons for accepting one and rejecting the other            Accept answers that give support to both statements            Allow points to be developed</p>	<b>3</b>

Question	Answer	Marks
5(a)(i)	<p><b>Fig. 11 shows the population pyramid for Bangladesh in 2015.</b></p> <p><b>Describe how the population of Bangladesh varies by age group.</b></p> <p>Largest age group 25–54 years            Second largest is children (0–14)            Declines from 55 onward            More children than 15–24 years / increase 0–14, decrease 15–24            Least &gt; 65</p> <p><u>Alternative male:female approach:</u>            0-14 % male &gt; % female            15-24 % male &gt; % female            25-54 % female &gt; % male            55-64 % female = % male            65+ % female = % male</p>	3
5(a)(ii)	<p><b>Increasing life expectancy results in an ageing population. What challenges might this create for Bangladesh?</b></p> <p>More old people            Increase in dependent population / don't contribute to GDP / % workers decrease            Increasing demand on health services  <u>Families</u> need to look after elderly            Increasing demand on <u>state</u> to support elderly</p>	4
5(a)(iii)	<p><b>International emigration from Bangladesh is increasing. What challenges might this create for Bangladesh?</b></p> <p>Decline in working age group / fewer workers            Less contribution to GDP            Loss of talent / skilled workers / professionals            Decline in male            Potential decline in birth rate and so younger generation</p>	2
5(b)(i)	<p><b>Fig. 12 shows how the percentage of children attending secondary schools has varied between 2006 and 2012 in three countries.</b></p> <p><b>Complete Fig. 12 for Bangladesh using the following figures.</b></p> <ul style="list-style-type: none"> <li>• 2010 – 46%</li> <li>• 2012 – 48%</li> </ul> <p>1 mark for correctly plotted points            1 mark for joining points each</p>	2

Question	Answer	Marks
5(b)(ii)	<p><b>Describe how the percentage of children attending secondary school in Bangladesh has changed compared to Pakistan and Myanmar.</b></p> <p>Must compare and refer to change in Bangladesh in relation to Pakistan and / or Myanmar.</p> <p><u>Overall:</u>            All increase            Bangladesh lower increase than Pakistan            Bangladesh increase 43 to 48% / by 5%, Pakistan increase 30 to 38% / by 8%            Bangladesh lower increase than Myanmar            Bangladesh increase 43 to 48% / by 5%, Myanmar increase 43 to 49% / by 6%</p> <p><u>Change over time:</u>            In 2006 B=M, by 2008 / 2012 B &lt; M            2006-2008 B(1) increase &lt; P(3), M(3)            2008-2010 B(2) increase &gt; P(1), M(1)            2010-2012 B(2) increase &lt; P(4) but = M(2)</p>	3
5(b)(iii)	<p><b>In Bangladesh the percentage of children in primary school is 95%. Suggest reasons why a smaller percentage attend secondary school.</b></p> <p>Can't afford secondary education / poverty            Children need to earn money            Education not valued beyond primary            Lack of access to education / less schools in rural areas / lack of schools / lack of education budget            Females less likely to continue into secondary / early marriage</p>	3
5(b)(iv)	<p><b>The adult literacy rate in Bangladesh in 2013 was 60%. How can the Government improve the adult literacy rate in Bangladesh further?</b></p> <p>New education policy            Investment in teacher training            Investment in new schools, especially in rural areas            Emphasis on girls access to education            Adult classes            Classes in indigenous languages            Age restriction for working            Free education / low cost education            Government promote education / increase awareness <u>about</u> ...</p>	3

Question	Answer	Marks
5(c)(i)	<p><b>Study the statements below.</b></p> <p><b>A ‘Improvements to tertiary education are vital to improve the economy of Bangladesh.’</b></p> <p><b>B ‘Occupational and professional skills are key to improving the economy of Bangladesh.’</b></p> <p><b>Give <u>one</u> piece of evidence which supports statement A.</b></p> <p>Tertiary sector gives biggest increase to GDP / increases GDP            Need for graduates / highly educated workers            Stem migration to other countries            Need to improve access for all, especially the poor            Enrolment is lower than other South Asian countries            Private universities charge high fees / need for more public Universities            Can get better paid jobs</p>	1
5(c)(ii)	<p><b>Give <u>one</u> piece of evidence which supports statement B.</b></p> <p>More affordable for poor            Don't need education            More closely linked to needs of business            Produce skilled workers            Enable workers to earn higher wages            Less in-migration for higher paid jobs / managerial positions            Increases GDP [only once for A or B]</p>	1
5(c)(iii)	<p><b>Which statement do you agree with most? Give reasons for your answer.</b></p> <p>No marks for stating A or B, only for giving reasons            Credit reasons for accepting one and rejecting the other            Accept answers that give support to both statements            Allow points to be developed</p>	3