UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

GCE Ordinary Level

MARK SCHEME for the May/June 2009 question paper

for the guidance of teachers
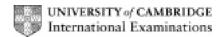
7094 BANGLADESH STUDIES

7094/02   Paper 2 (Environment and Development of Bangladesh), maximum raw mark 75

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

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UNIVERSITY *of* CAMBRIDGE
International Examinations

- **Answers worthy of a mark are separated by /.**
- **Where development marks are allowed for expanding upon a point, this indicated by, for example, 'dev 1'.**
- **Except where proper nouns required or otherwise indicated, candidates do not have to use the wording in mark scheme providing the meaning is the same.**
- **In all cases where an answer is given which is valid but not mentioned in the mark scheme, this should be accepted. If in doubt contact the team leader.**

1	(a)		Study Fig. 1, which shows some features of a river and its valley.	
		(i)	Name each of the features labelled A, B and C. Choose your answers from the following list: **Slip off slope** **Ribbon lake** **Ox bow lake** **Moraine** **Delta** **River cliff.** **A** slip off slope **B** river cliff **C** ox bow lake If more than one feature named for a letter, mark is for first named.	[3]
		(ii)	Describe the processes that are taking place at each of the places marked X and Y. **X** deposition of material/silt (1) because current is slower or because more friction on inside of bend (1). **Y** erosion of bank (1)/undercutting (1)/current strongest or less friction on outside of bend (1) Max 2 for either **X** or **Y**.	[4]
		(iii)	Explain how the feature labelled as C was formed. Credit will be given for an accurate diagram. Max 2 for relevant diagram with max 3 for annotations or separate explanation. Ref needed to undercutting/erosion on both sides of neck of land or similar/neck of land becoming narrower/river breaks through/deposition at sides of river blocks off former course/separate lake develops. Up to 4 x 1.	[4]
	(b)		Study Fig. 2, a map showing the main rivers of Bangladesh and the areas most suitable for agriculture.	
		(i)	Name the river marked D. Jamuna	[1]

	(ii)	**Describe the distribution of land *most suitable* for agriculture.** Valley or either side of Jamuna/also its tributary Tista/south east of Mehgna and – or Padma/area to west of Padma delta/area to north of Dhaka/narrow strip along coast in east. Accept also ref to named places or districts. 3 x 1 but 2 for a sound general statement e.g. 'mostly close to rivers and away from coasts and uplands'. Named places not required if refer to coast and compass points. Max 2 if just a list of names of provinces e.g. Dhaka, Khulna, Chittagong without any refs to compass directions.	**[3]**
	(iii)	**Explain why *each* of areas F and G is *less suitable* for agriculture.** G upland area/forested/away from main river valleys – cultivation could cause soil erosion/difficult to provide water all year etc. Accept very heavy rainfall. F Part of delta/flooding with saltwater/forested or sunderban/very difficult communications/frequent damage from typhoons. 4 x 1 but 2 for a sound explanatory statement.	**[4]**
(c)		**Study the following statement:** ***'Rivers are Bangladesh's principal resource but also its greatest hazard.'***	
	(i)	**Give *one* piece of evidence which supports the idea of rivers being the 'principal resource.** Provide water all year round/best farm land near rivers/flooding brings new layer of silt keeping land fertile/fishing/HEP.	**[1]**
	(ii)	**Give *one* piece of evidence which supports the idea of rivers being 'the greatest hazard.'** Flooding causes loss of life/loss of farmland and crops/damages communications/spreads diseases. 'Flooding' on its own without any ref to damage should not be credited.	**[1]**
	(iii)	**What do you consider to be the best way of reducing the hazards? Give reasons for your answer.** Credit any reasonable way e.g. establishing stronger 'islands ' for settlements/ encouraging people to settle on higher ground/develop other economic activities away from areas of worst flooding/afforestation of slopes to reduce run off/ work with surrounding countries to re afforest slopes/build embankments to sides of rivers/dams or barrages to hold back water/sluice gates etc. Accept early warning system. 4 x 1 Allow dev marks	**[4]**

2	(a)		Study Fig. 3, a map showing areas most affected by cyclones.	
		(i)	Describe the distribution of the areas most affected by cyclones.	[3]
			Narrow strip in E/bulge inland along river/serious damage along coast band approx 20 km wide/mostly in south along coast or Bay of Bengal/delta and Sundarbans most severely affected/band approx 60 km wide/damage extends further inland up to 120 km. Names of places not required provided accurate reference is made to compass points and coast. Max 2 if just a list of names of provinces e.g. Dhaka, Khulna, Chittagong without any refs to compass directions.	
		(ii)	Describe the different types of damage that could be caused by a cyclone in *each* of areas A and B.	[3]
			A wind destroys property/takes down trees/people hurt by falling trees – buildings/damage to communications. **B** main damage is from tidal surge or wall of water/wrecking crops/communications/people and animals drowned. 3 x 1 but max 2 for either **A** or **B**.	
		(iii)	Explain how a cyclone is formed. Credit will be given for the use of diagrams.	[4]
			Body of warm water/min 27/warm air rises/low pressure/winds sucked in/ spiralling winds/energy for spiralling comes from release of latent heat from rapidly cooling air/condensation/build up of clouds/coriolis effect/moves according to prevailing winds at the time etc. All 4 marks for diagram if well annotated.	
		(iv)	In what ways might global warming affect cyclones?	[2]
			Warmer seas will give rise to more source areas for cyclones/more intense cyclones in existing areas/more frequent/rising sea levels will give greater reach to cyclones. 2 x 1	
	(b)		Study Fig. 4, which shows the development of a thunderstorm.	
		(i)	List *each* of the processes labelled W, X, Y and Z.	[4]
			W Heating of earth's surface. Accept 'evaporation' as close to an arrow pointing upwards. **X** Convection currents/hot air rising **Y** Air cools/condenses/forming cloud base **Z** Air rising/cloud thickening 4 x 1	

	(ii)	**Explain how the processes you have described give rise to a thunderstorm.**	[3]
		Surface warms up so air rises/rising air causes low pressure at ground which brings in more air/strong winds/air cools as it rises so some of moisture condenses/creates rain clouds/cumulo nimbus clouds/strong upward air movements create turbulence/eventually water falls as rain/accompanied by thunder and lightning/static electricity in cloud makes contact with earth. 3 x 1	
	(c)	**Study the following statement:** *'There is little that can be done to lessen the impact of cyclones on Bangladesh.'*	
	(i)	**Give *one* piece of evidence which supports this statement.** Natural phenomenon/Much of BD is low lying/paths of cyclones from bay of Bengal cross BD/not a wealthy country so can't afford expensive protection schemes/densely populated so can't move people away from danger.	[1]
	(ii)	**Give *one* piece of evidence which does not supports the statement.** People could be better prepared to deal with cyclones/emergency preparation/training in what to do/creation of early warning system/creation of secure emergency shelters/rapid response by emergency services to effects/cyclones hit other countries which have densely populated areas close to coasts but effects are not so severe e.g. Japan/effects related to development of country and its level of preparedness/afforestation of mangroves which help to reduce force of cyclone.	[1]
	(iii)	**Do you agree with the statement? Give reasons for your answer.** No marks for yes or no. Marks for reasons given, which can be any of above, but no double credit for points already given in **(i)** or **(ii)** above. 4 x 1 Allow dev marks	[4]
3	(a)	**Study Fig. 5, which shows the population structure of Bangladesh in 2005.**	
	(i)	**Estimate how many males were aged between 20 and 24?** 8. 5 m Accept 8.3 mm to 8.8 **Estimate how many females were aged between 20 and 24?** 8.00 m Accept 7.8 m to 8.2 m No marks if no ref to millions or 'm'.	[2]
	(ii)	**What were the two largest age groups?** 0–4 years and 15–19 yrs Award marks for year groups even if 'yrs' missing.	[2]

	(iii)	There are three main bands of age groups labelled A, B and C. **What names could be given to *each* of these bands?** **A** young dependent **B** economically active **C** old or elderly dependent Accept similar names. These exact terms are not required but max 2 if no ref to dependency or 'working population'.	**[3]**
	(iv)	**Describe the pattern of age groups in band B.** Most in 15–19 group/then tapers with age/numbers in each group decreases as age increases/significant reduction between 20–24 and 25–30 groups/max 1 for figs/slightly higher numbers of males than females in most groups/most marked in over 50s.	**[2]**
	(v)	**For band B, suggest *how* and *why* that band is likely to change by 2015.** 15–24 will decrease/due to smaller age groups moving up/25–34 will increase greatly/all other age groups likely to increase/as tapering moves up'/people in band A move into B/people in B move up to C etc. Needs to be 'how ' and 'why' for full marks but even if no ref to Fig.5 allow 1for references to greater life expectancy, improved health etc. and 1 for ref to changing birth rates in future.	**[4]**
(b)		**Study Fig. 6, which shows how Bangladeshi children aged under 10 are being educated.**	
	(i)	**What percentage of Bangladeshi children have their education paid for at least in part by the government?** 54%.	**[1]**
	(ii)	**What is an NGO and what is the role of an NGO in educating children?** Non government organisation/non profit making/e.g. BRAC/Help educate children in areas where there are no govt schools/ concentrate on rural areas/more informal and flexible education/ help children who are needed to work land or care for others or otherwise cannot attend school etc. 3 x 1	**[3]**
	(iii)	**The *adult* literacy rates for Bangladesh in 2005 were:** **male 49%** **female 30%** **Use Fig. 6 to suggest why the adult literacy rates will be much higher by 2015?** Most children now being educated/when they become adults they will be literate/ older people now most likely to be illiterate. 2 x 1 Max 1 if no reference to info in Fig. 6	**[2]**

	(c)	Study the two statements below: **A** *'The only way to improve education is to increase the role of the private sector'* **B** *'The only way that education can be improved is by a major government funded campaign'*	
	(i)	**Give *one* piece of evidence which supports statement A.** Private sector can act quickly and be flexible/many people are able and willing to spend on education/sector can draw on expertise inside and outside country/govt has not enough resources to pay more for education/govt may take long time/private sector may have more well qualified teachers etc. Accept refs to need for occupational skills. No credit for 'better education'.	**[1]**
	(ii)	**Give *one* piece of evidence which supports statement B.** People who lack education are too poor to pay/only a govt can organise education on scale required/biggest need for more schools is in rural areas where private sector is less active/govt already is biggest player in education providing basis for expansion/state system already has infrastructure for education which can be developed or adapted/NGOs can be effective but only on small scale/ govt can give incentives or change law re compulsion. Do not credit converse reasoning between ii and i.	**[1]**
	(iii)	**What do you think is the best way to improve education? Give reasons for your answer.** Wide range of possible answers, including points listed above.. Credit the chosen way for 1 mark but only if different from two statements above. No double credit for points already given in answers to **(i)** or **(ii)** above. 4 x 1 Allow dev marks	**[4]**
4	**(a)**	**Study Fig. 7, which shows information about employment and output for industry in Bangladesh.**	
	(i)	**In which type of industry do most people work?** Small scale and cottage industries.	**[1]**
	(ii)	**Which type of industry contributes the most to the economy?** Large scale.	**[1]**
	(iii)	**Name *two* types of industries that are classed as small scale or cottage.** Crafts/baskets/pottery etc. Accept metal working but not other industries which can be done on variety of scales (unless specified e.g. small shops).	**[2]**

	(iv)	Over half the export earnings of Bangladesh come from the garment industry in factories which mostly are classed as large scale. The industry employs over 2 million people. **Explain why the garment industry has become so important in Bangladesh.** Use existing skills or people easily trained/large capital not required/builds on skills etc. from cottage industry/wages are low so can produce at low cost/ tradition of textiles in Bengal/earns foreign currency and so helps economy/ helps reduce unemployment or create jobs.	[4]
	(b)	**Bangladesh plans to become more industrialised.** **Describe how *each* of the following can help with the development of industry:** *Government* Creating infrastructure/e.g. roads, railways/provide basic services such as water, electricity, sewage/provide training or education/ create sound legal and financial framework for industry to develop/provide loans/create political stability/help with international marketing etc. *Private investment* Equipment and machinery/money required for start up/marketing of output/close watch on investment to ensure it is successful. *Multinational companies.* Money for investment/links to existing supply lines for inputs/links to international markets for outputs/expertise from other countries/provide people with management skills etc. 6 x 1 but max 3 for any one factor.	[6]
	(c)	**Study Fig. 9, which shows information about Bangladesh, Pakistan and India in 2006.**	
	(i)	**Which country has the highest GNP per head?** India	[1]
	(ii)	**Compare Bangladesh with Pakistan using the information in Fig. 9.** Max 2 if no comparisons BD and P have similar sized pops/P has higher GNP by $50 per head/P has much higher levels of foreign investment/P has c 5$ per head but BD has only c third$ per head/very similar growth rates. 4 x 1 but max 3 if don't identify growth rates as being close or similar.	[4]

	(d)	Study the two statements below: **A** *'Attracting more foreign investment will provide the best future for Bangladesh';* **B** *'Foreign investment can have serious drawbacks.'*	
	(i)	**Give *one* piece of evidence which supports statement A.** BD needs money from outside because poor/benefits from foreign skills or expertise/govt has not had good record of stimulating industry/limited number of wealthy people in the country who could invest/best way to get money to stimulate development. Pakistan has high foreign investment but growth rate is same as BD.	**[1]**
	(ii)	**Give *one* piece of evidence which supports statement B.** Foreign investors have influence on how BD develops/BD loses control/profits made will go abroad and not to BD/benefits may go to other countries but not to Bangladesh/Pakistan has much foreign investment but GNP is not significantly higher.	**[1]**
	(iii)	**Which statement do you agree with the most? Give reasons for your answer.** Marks for reasons. Wide range of possible answers, including points listed above. No double credit for points already given in answers to **(i)** or **(ii)** above. 4 x 1 Allow dev marks.	**[4]**
5		**Study Fig.10, which shows changes in production of Bangladesh's two main crops.**	
	(a) (i)	**Describe changes in the production of rice from 1988 to 2005.** Steep increase between 88 and 90/Slight decrease between 90 and 95/rapid increase between 95 and 01/stable or minor changes since 01/overall increased from 15 m tonnes to 25 m tonnes. 2 x 1	**[2]**
	(ii)	**Describe changes in the production of sugar cane from 1988 to 2005.** Very minor changes overall/slight increase 88 to 90/level from 90 to 91/slight decrease between 91 and 02/minor increase 02 to 03/minor decrease 03 to o4/stable 04 to05/overall decreased from 7m tonnes to about 6 and half m tonnes. 2 x 1	**[2]**

(b)	**(i)**	**Explain why rice production increased overall from 1988 to 2005.**	**[4]**
		Increased demand due to growing population/use of high yielding varieties/especially boro rice/use of fertilisers/price of fertilisers is subsidised by government/better irrigation/training of farmers to increase productivity of their land/use of machinery such as water pumps etc. 'Machinery' on its own not to credited. 'Green revolution' needs development to gain credit.	
	(ii)	**Suggest three ways that food production could be increased.**	**[3]**
		Increasing area of land that is irrigated/consolidation of land holdings/sharing of equipment/facilities for loans to buy machinery etc. Allow max of one duplication from part **(i)** unless the point is developed e.g. 'use of fertilisers' for **(i)** but 'farmers trained to apply correct amounts of fertilisers at right time' would also earn a mark for **(ii)**.	
(c)		**Study Fig.11, a map showing arsenic contamination.**	
	(i)	**Describe the distribution of the areas affected by arsenic pollution of tube wells.**	**[3]**
		Main area is across centre of country/especially northern Khulna region/ southern part of Dhaka/exception is Sylhet area in north east/small scattered areas in northern part/none in south east or Chittagong region (although accept if ref to west or Comilla area or east of Meghna)/accept refs to named areas if accurate. 3 x 1	
	(ii)	**Explain the causes of arsenic pollution.**	**[3]**
		Irrigation reduces level of groundwater/allows oxygen in to ground which reacts with rock to release arsenic/from disposal of waste from factories/from pesticides and- or insecticides/wooden poles for power lines were treated with arsenic.	
	(iii)	**What can be done to reduce the effects of this pollution?**	**[2]**
		Arsenic removal plants in cities/store rain water for use/develop deep ground wells below 150M or below level of arsenic/or shallow wells above the arsenic rocks/treat surface water/provide households with filters/install sand filters for ponds. 2 x 1	
(d)		**Study the two statements below:** **A *'The best future for Bangladesh is to have fewer but larger farms*** **B *' Supporting the small farmers is the key to Bangladesh's future'.***	
	(i)	**Give *one* piece of evidence which supports statement A.**	**[1]**
		Better use could be made of machinery/more capital available for investment/ larger scale production could reduce costs/small farmers traditionally very cautious about new ideas/could attract foreign investment. No credit for 'more production' on its own unless the idea is developed.	

	(ii)	Give *one* piece of evidence which supports statement B.	[1]
		Availability of labour is not a problem/people work best when they have a stake in harvest/many small farmers can make very efficient use of land/support from govt or NGOs with equipment – seeds etc. would lead to bigger harvests/larger farms would drive many off land and increase landlessness and migration to towns/most farms are small.	
	(iii)	What do you think is the best way forward for agriculture in Bangladesh? Give reasons for your answer.	[4]
		Allow credit for the 'way' if it's different to statements above. Marks are for reasons. Wide range of possible answers, including points listed above. No double credit for points already given in answers to **(i)** or **(ii)** above. 4 x 1 Allow dev marks.	