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**BANGLADESH STUDIES**

**0449/02**

Paper 2 Environment and Development of Bangladesh

**May/June 2016**

MARK SCHEME

Maximum Mark: 75

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**Published**

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1 (a) (i) Study Fig.1, a map showing some physical regions of Bangladesh.

- river A – Karnaphuli
- Complete the key for the physical regions.
  - uplands
  - flood plain
  - deltaic plain



4 × 1 mark [4]

(ii) Describe the physical characteristics of the deltaic plain and the uplands.

Deltaic plain –

flat  
 old delta  
 sediments/alluvium/silt deposited on sea floor/river mouth/fertile soil  
 W is inactive – relatively old  
 E is active – relatively young  
 dissected by river channels

Uplands –

terraces formed by ancient/Pleistocene flood of snow melt  
 alluvial  
 clay  
 about 15 m asl up to 60 m asl  
 oxidised sediments  
 slightly undulating  
 dendritic drainage

Reserve 1 mark for each region.

4 × 1 mark [4]

(iii) Explain how flood plains are formed. You may use a diagram to illustrate your answer.

river carries sediment  
 river overflows banks  
 water speed slows  
deposits alluvium/sediments  
 heavier, coarser materials deposited on banks  
 finer material away from banks  
 levees build up  
 lateral erosion  
 repeated flooding/layers build up

Mark either text/diagram – do not double credit.

3 × 1 mark [3]

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(b) Study Fig. 2 which shows the climate for Bangladesh and the growing seasons of three types of rice.

(i) How long is the growing season for Boro rice?

4–5 (months) [1]

(ii) Using Fig. 2, compare the climatic conditions for growing Aus rice with those for growing Boro rice.

Aus – sow when moderate rainfall (50–250 mm)/Boro when dry  
sow when temperatures rising/warm/24–28 °C/Boro when cooler/20 °C  
harvest when high rainfall (350–400 mm)/Boro when low (150 mm)  
harvest when temperatures high/28 °C/Boro when moderate/24–26 °C

Aus needs more rainfall

Aus needs higher temperature 3 × 1 mark [3]

(c) (i) Describe the processes involved in preparing the land for the sowing and harvesting of rice in Bangladesh.

ploughed soil  
bunds built  
fields flooded before planting  
fields drained when rice ripe

3 × 1 mark [3]

(ii) Explain how farmers can increase rice production.

mechanisation – tillers, ploughs, threshers  
larger plots of land/merging smaller fields  
HYV seeds – miracle rice/Irri 6  
fertilisers  
pesticides

2 × 1 mark [2]

(d) Study the two statements below.

A 'The topography (physical features) of Bangladesh is very beneficial for the farmers.'

B 'The topography (physical features) of Bangladesh presents many problems for the farmers.'

(i) Give one piece of evidence which supports statement A.

variety of features  
flat land/flood plains  
alluvium/silt  
fertile soil  
hills for tea  
hills give different climatic conditions

[1]

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(ii) Give one piece of evidence which supports statement B.

flooding  
 from rivers  
 from sea  
 low elevation/low lying is a problem with climate change and rising sea levels [1]

(iii) Which statement do you agree with the most? Give reasons for your answer.

Points can be taken from those in (i) and (ii) and developed further.

No marks for stating their view, only for reasons.

Accept answers that support both sides of the argument or just one side. [3]

[Total: 25 marks]

2 (a) Study Fig. 3 and Fig. 4 which show average rainfall and depth of flood water in July in Bangladesh.

(i) Using compass directions only, describe where more than 100 mm of rain fell in Bangladesh.

in N  
 in S-E [2]

(ii) Describe the general pattern of the floods.

along the rivers/named river/valleys  
 the N-E/hills  
 none in S-E  
 in S  
 central area 2 × 1 mark [2]

(iii) Explain why the floods were so severe two weeks after the week of heavy rain.

lag time after rains  
 ground saturated  
 water unable to drain away  
 many rivers overflow their banks  
 above average rainfall  
 intense rainfall in one week  
 could also be snow melt/increased flow of water from Himalayas  
 embankments collapse  
 increased sedimentation of/deposition in rivers – hold less water 3 × 1 mark [3]

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**(b) Explain how floods affect the people and the economy of Bangladesh.**

People –

loss of homes/property/homeless  
 loss of land/fertile soil/river bank erosion  
 death/illness/disease  
 loss of food/crops/livestock  
 loss of income  
 cannot (travel to) work  
 lack of clean water

Economy –

transport links disrupted – affects trade/products to market  
 factories stop work – flooded  
 loss of labour/sick so cannot work  
 extra money needed to repair infrastructure  
 agriculture affected by loss of income/exports  
 farmers' loss of income  
 food shortage – need to import  
 increased food prices  
 cost of health care because of waterborne diseases

4 × 1 mark [4]

**(c) Study Fig. 5, a pie chart showing the percentage of air pollution caused by industries.**

**(i) Complete Fig. 5, showing the five most air polluting industries of Bangladesh, using the following information.**

- Cement/clay – 16%
- Pulp and paper – 14%
- Textile – 10%

1 mark per line drawn

2 × 1 mark

1 mark for correct shading

1 × 1 mark [3]

**(ii) What percentage of the total air pollution is caused by the five most polluting industries?**

85(%)

[1]

**(iii) Apart from an industry, name a major cause of air pollution in Bangladesh.**

vehicles  
 dust from roads and construction sites

[1]

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(d) Explain how the government is trying to reduce air pollution in Bangladesh.

air monitoring stations  
phasing out of 2-stroke rickshaws/introduce 4-stroke  
clean air project funded by World Bank  
clean and energy efficient brick kiln technology – zig-zag kilns  
improved safe pedestrian mobility – footpath construction – to reduce car use  
bus rapid transit route completed  
strengthen environmental legislation/fines for industries breaking pollution rules  
ban burning (manure in open)  
purification units on factory chimneys  
encourage catalytic converters on vehicles  
ban leaded petrol/encourage unleaded petrol  
afforestation

4 × 1 mark [4]

(e) Study the statement below.

**‘Controlling the flooding of rivers in Bangladesh is almost impossible.’**

(i) Give one piece of evidence which supports this statement.

many rivers flow through Bangladesh  
heavy rain, particularly monsoons  
expensive/lack of funding  
no control over upper reaches of rivers  
deforestation in Himalayas  
high cost of flood prevention measures

[1]

(ii) Give one piece of evidence which shows how rivers can be controlled.

agreements with India/Nepal  
embankments/sluice gates/flood barriers barrages built/strengthened  
dredge/deepen river channels  
afforestation, reforestation

[1]

(iii) How far do you agree with the statement? Give reasons for your answer.

Points can be taken from those in (i) and (ii) and developed further.

No marks for stating their view, only for reasons.

Accept answers that support both sides of the argument or just one side.

[3]

[Total: 25 marks]

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- 3 (a) Study Fig. 6 which shows gas fields, gas pipelines and fertiliser factories. Describe the general distribution of gas fields and the network of gas pipelines.

Gas fields –

mainly N-E/Sylhet  
around Dhaka  
S-E  
2 off-shore/Bay of Bengal  
all on eastern side

Pipelines –

centred on Dhaka/in centre  
to main towns  
mainly to W  
W-wards/towards Jessore  
(To Chittagong) from off-shore

Reserve 1 mark for each section.

4 × 1 mark [4]

- (b) Fig. 7 shows the percentage of natural gas consumption by different sectors. Complete Fig. 7 using the following information.

- industry – 20%
- domestic use – 10%
- fertiliser manufacture – 10%

2 marks per line drawn

2 × 1 mark

1 mark for correct shading

1 × 1 mark [3]

- (c) (i) Using Fig. 6, suggest one reason for the distribution of fertiliser factories in Bangladesh.

near pipelines for raw materials  
near main town for distribution  
close to gas fields  
scattered/dispersed/spread out to serve a wide area/evenly distributed

[1]

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- (ii) Explain the importance of the production of fertilisers to farmers and to the economy of Bangladesh.

Farmers –

add nutrients to soil  
enable double cropping  
increase/high yield/increase production  
can grow HYV seeds  
increase farmers' earnings

Economy –

reduce imports  
export earnings (of fertilisers or crops)

Reserve 1 mark for economy

3 × 1 mark [3]

- (d) Climate change will affect agriculture in Bangladesh.

- (i) Name two gases that are causing global warming.

carbon dioxide  
methane  
nitrous oxide

2 × 1 mark [2]

- (ii) Explain how human activities cause the increased production of these gases.

burning fossil fuels/gas/coal/oil  
for industry/heating/cooking  
transport use – cars/planes  
deforestation  
agriculture – livestock and methane gas  
paddy fields and decomposition

3 × 1 mark [3]

- (iii) Explain the effect climate change will have on agriculture and the food supply of Bangladesh.

rising sea level – flood agricultural lowlands – less land for crops/damage crops  
greater pressure on land/living space  
more saline soil  
higher temperatures – lower harvests in cereals  
more rain – flooding of farm land/remove soil fertility  
less rain/drought – lower yields  
increase in cyclones + effect(s)  
increase in pests – affect crops  
lead to food shortages/increase famine, malnutrition

4 × 1 mark [4]



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(e) Study the two statements below.

**A ‘Bangladesh is not a major contributor to climate change.’**

**B ‘Bangladesh will be one of the countries worst affected by climate change.’**

(i) Give one piece of evidence which supports statement A.

not a major industrial power/mainly MEDC  
 low per capita output of greenhouse gases  
 not a major oil producer  
 agricultural country

[1]

(ii) Give one piece of evidence which supports statement B.

low lying country – easily affected by rising sea levels  
 many people homeless/have to move  
 high/dense population  
 dependent on agriculture  
 changing climate patterns – more cyclones/heavy rain/drought

[1]

(iii) Do you think other nations should help Bangladesh cope with the effects of climate change? Give reasons for your answer.

Points can be taken from those in (i) and (ii) and developed.

could mention international conferences – Kyoto, Copenhagen  
 poor country and so needs help  
 share ideas  
 compensation

[3]

[Total: 25 marks]

4 (a) (i) Study Photograph A (Insert) which shows a cottage industry in the Bandarban region.

On Fig. 8, the sketch of Photograph A, add notes to show the characteristics of a cottage industry. One note has been added as an example.

single worker  
 female worker  
 home/house environment  
 simple loom/technology  
 handmade equipment  
 handmade products  
 manual power  
 small output/piece of work

4 × 1 mark [4]

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- (ii) **Study Photographs A and B (Insert) which show textile industries on a different scale. Using only the evidence in the photographs, compare the working features and output of the two industries.**

large scale/small scale  
many machines/one machine  
large machines/small loom  
advanced technology/simple technology  
many workers/one worker  
all male/female  
modern factory/home/verandah  
electricity for lights/natural light  
large pieces of material produced/small piece of cloth  
output more/less

Must be comparative statements 4 × 1 mark [4]

- (b) (i) **Describe how government policies protect new industries in Bangladesh.**

new domestic industries need protection against international competition  
support until they become mature and stable  
to keep international competitors from damaging or destroying the new industry,  
introduces import duties, tariffs, quotas and exchange rate controls (max 2)  
to stop international competitors from matching/beating prices of an infant industry  
reducing hartals/strikes  
provide subsidies 3 × 1 mark [3]

- (ii) **Explain how Bangladesh can overcome obstacles to industrialisation, other than ways mentioned in (b)(i).**

improve legal framework – contracts easily violated  
improve law enforcement – strikes occur frequently  
improve infrastructure – roads, electricity supply, ports (max 2)  
improve financial support/loans  
attack problem of ‘bad debt’  
encourage MNCs/FDI (foreign direct investment)  
provide training for workers  
create political stability 3 × 1 mark [3]

- (c) (i) **Explain why the financial sector is important for industry in Bangladesh.**

need efficient financial sector for long term investment  
loans  
lowest possible cost  
to monitor borrowing and not waste finance in poorly performing industries  
provide equipment, pay wages 2 × 1 mark [2]

- (ii) **What is meant by ‘micro-credit’?**

lending small amounts of money  
to the poor  
especially women  
to set up small businesses/buy goats, etc. 2 × 1 mark [2]

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(iii) Explain why micro-credit has been successful in Bangladesh.

high repayment of loans  
lends to a group  
has a collective guarantee  
if one person fails to repay loan no-one else in the group gets a loan  
many successes/people lifted out of poverty

2 × 1 mark [2]

(d) Study the two statements below.

**A ‘Bangladesh’s increased economic growth depends on expanding the small scale industrial sector.’**

**B ‘To maintain economic growth Bangladesh needs to improve its large scale industries.’**

(i) Give one piece of evidence which supports statement A.

provide rapid growth  
with smaller input/simple technologies  
state assistance not needed  
rely on cheap labour/low wages  
but employ more people  
low skills

[1]

(ii) Give one piece of evidence which supports statement B.

international recognition  
attract MNCs  
high wages  
export/earn foreign exchange  
high output/productivity  
high value-added goods

[1]

(iii) Which statement do you agree with the most? Give reasons for your answer.

Points can be taken from those in (i) and (ii) and developed.

No marks for stating A or B, only for reasons.

Accept answers that support both statements or neither.

[3]

[Total: 25 marks]

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5 (a) Study Fig. 9A and Fig. 9B, which show population structures for Bangladesh in 1994 and 2014.

(i) Describe the differences between the two population structures.

2014 –  
 base narrowing/fewer 0–4 year olds than those children above  
 more older people/65+  
 bulge in centre/working age people/accept 10–75  
 less pyramid shaped  
 females increased more than males

Or accept as viewpoint from 1994 3 × 1 mark [3]

(ii) Suggest reasons for the differences between the two population structures.

lower birth rates/family planning/birth control/later marriages  
 acceptance of smaller families/awareness  
 improved health care  
 improved hygiene/sanitation/cleaner environment  
 improved nutrition  
 migration of males

3 × 1 mark [3]

(iii) Why are there fewer males than females between the ages of 20 and 40 years old in both Fig. 9A and Fig. 9B?

migration [1]

(b) (i) Study Fig. 10, a table which shows the religious structure in Bangladesh.

Muslim	Hindu	Other
89%	10%	1%

Using data in Fig. 10 draw a graph below to show the religious structure of Bangladesh.

1 mark per line drawn 2 × 1 mark  
 1 mark for shading 1 × 1 mark [3]

(ii) Only 2% of the population of Bangladesh are not Bengali. Describe some of the minority ethnic groups and where they live.

e.g. Khasi, Jaintia, Chaka, Marmas, Santals, Manipuri, Tanchangya, Rohingya, etc.  
 tend to live in hilly regions  
 of Sylhet and Chittagong Tracts  
 some of Burmese ancestry  
 on border with Myanmar  
 others on border with India/Meghalaya

3 × 1 mark [3]

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- (c) (i) Study Fig. 11 which shows the percentage of youths (aged 15–24 years) who are literate in Bangladesh and South Asia as a whole.

Using Fig. 11, compare the progress of the youth literacy rate of Bangladesh with that of South Asia.

Bangladesh improved the most/by 40% of 20%  
 now nearly same as S Asia  
 1990–1995 increased, S Asia static  
 1995–2000 static/constant, S Asia making most progress  
 2000–2005 increased rapidly, S Asia static/constant  
 2005–2012 followed same pattern/increase then constant

2 × 1 mark [2]

- (ii) Explain how an increase in the literacy rate improves the development of Bangladesh.

more employable/decrease unemployment  
 meet needs of employers in value-added services and goods  
 train for skilled jobs  
 leads to higher output  
 higher wages – increase GDP, more taxes/increased standard of living  
 skills to operate in global economy, e.g. English and maths  
 more trade  
 literate women have fewer children/fewer dependents  
 more professionals to improve future lives

3 × 1 mark [3]

- (iii) Apart from increasing the literacy rate, describe two other educational challenges for Bangladesh.

improve primary school enrolment  
 improve graduation rate of primary school particularly girls  
 increase secondary school enrolment  
 increase vocational training  
 increase tertiary/university enrolment  
 increase in trained/skilled teachers  
 increase schools in rural areas  
 increase spending/make more affordable

2 × 1 mark [2]

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(d) Study the two statements below.

**A** ‘Improved health care is the best way to slow down population growth in Bangladesh.’

**B** ‘Increased educational opportunity is the best way to slow down population growth in Bangladesh.’

(i) Give one piece of evidence which supports statement A.

health workers in villages/rural areas/where large population growth  
family planning/awareness programmes  
maternal health clinics  
fewer babies dying – smaller families

[1]

(ii) Give one piece of evidence which supports statement B.

aware of population problem/family planning  
female education reduces marriage age and fertility age  
desire for a career

[1]

(iii) Which statement do you agree with the most? Give reasons for your answer.

Points can be taken from those in (i) and (ii) and developed.

No marks for stating A or B, only for reasons.

Accept answers that support both statements or neither.

[3]

[Total: 25 marks]