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0680/01

May/June 2008

1 hour 30 minutes

Additional Materials: Ruler

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

The number of marks is given in brackets [] at the end of each question or part question.

For Examiner's Use	
1	
2	
3	
4	
5	
6	
Total	

This document consists of **11** printed pages and **1** blank page.

- 1 The table below shows information about three rivers in Australia.

River	Tia	Apsley	Mary
Average Daily flow (litres)	46 000 000	10 000 000	300 000 000
Catchment Area (hectares)	23 000	100 000	1 000 000
Flow/area (litres/hectare)	2000	100	

- (a) (i) Which of these rivers has the largest catchment area?

..... [1]

- (ii) Calculate the average flow in litres/hectare for the Mary.

..... [1]

- (iii) Which river provides the most efficient water supply? Give a reason for your answer.

.....

.....

..... [2]

- (b) The Mary River is in Queensland, NE Australia. This area has been suffering its worst drought in a 100 years. One suggested solution is to dam the Mary River. Below is a quote from a leaflet produced by a group who are against this dam.

“We understand that people need water solutions BUT Traveston Crossing Dam on the Mary River is NOT one of them”

- (i) Suggest **three** reasons why people living in the Mary River valley might be against the Traveston Crossing dam.

.....

.....

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..... [3]

- (ii) Another way to obtain more water for the area would be by desalination. Briefly describe the desalination process and suggest characteristics of a country that would allow it to produce water by this process.

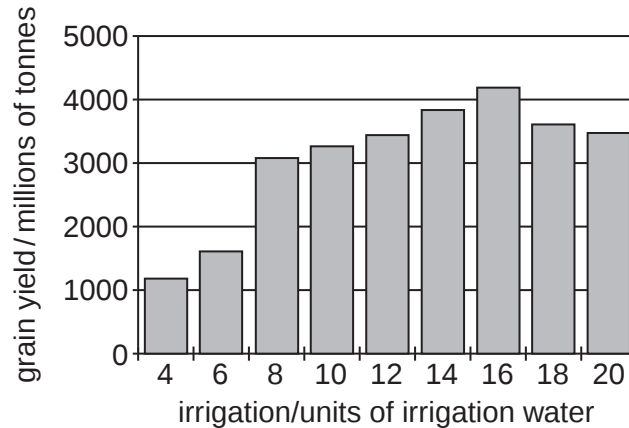
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..... [3]

- 2 Look at the graph below showing the effect of water supply on yield of grain growing in a desert area in Arizona (USA).



- (a) (i) How much water should be supplied to barley for the best yield?

irrigation units [1]

- (ii) Suggest reasons why adding too much water reduces yield.

.....

 [2]

- (b) Interaction between salt in the soil and irrigation water can increase salination.

- (i) Explain how irrigation increases salination.

.....

 [2]

- (ii) Development of agricultural land often requires the removal of native plants. Explain how this might increase salination.

.....

 [2]

- (iii) One method for preventing an increase in salination is to use trickle drip irrigation. Explain how this works and prevents salination.

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..... [3]

- 3 In a number of countries, such as Brazil and Australia, ethanol is mixed with petrol for use in motor vehicles.

One benefit of this is that ethanol is a renewable source of energy.

- (a) (i) Explain what the term *renewable* means.

.....

 [2]

- (ii) A leaflet describing the advantages of adding ethanol to petrol says:

'ethanol blended fuels can help to reduce the amount of dangerous chemicals in the atmosphere'

Name **two** dangerous chemicals which are emitted from car exhausts.

.....
 [2]

- (iii) Choose **one** of these chemicals and describe its effects on people and the environment.

People

Environment

 [3]

- (b) How can the effects of air pollution by motor vehicles be reduced by people and governments?

People

Governments

 [3]

4 In nature a stable ecosystem results from the process of vegetational succession.

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(a) (i) Give an explanation of these two terms.

Ecosystem

.....

Vegetational Succession

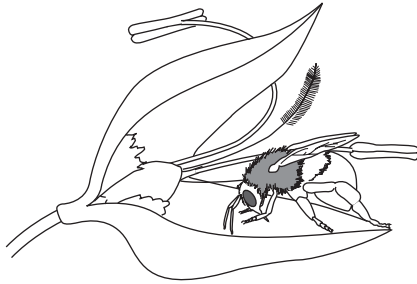
..... [4]

(ii) In an ecosystem living things depend on each other in many ways including:

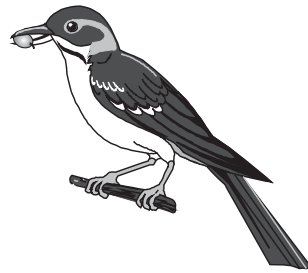
competition,
predation,
pollination,
seed dispersal.

Study the following pictures showing ecological processes and complete the table below them.

A



B



C



D



Process	Letter of picture
Competition	
Predation	
Dispersal	
Pollination	

[2]

- (b) Natural ecosystems are often cleared by people. Give reasons why such clearance might occur.

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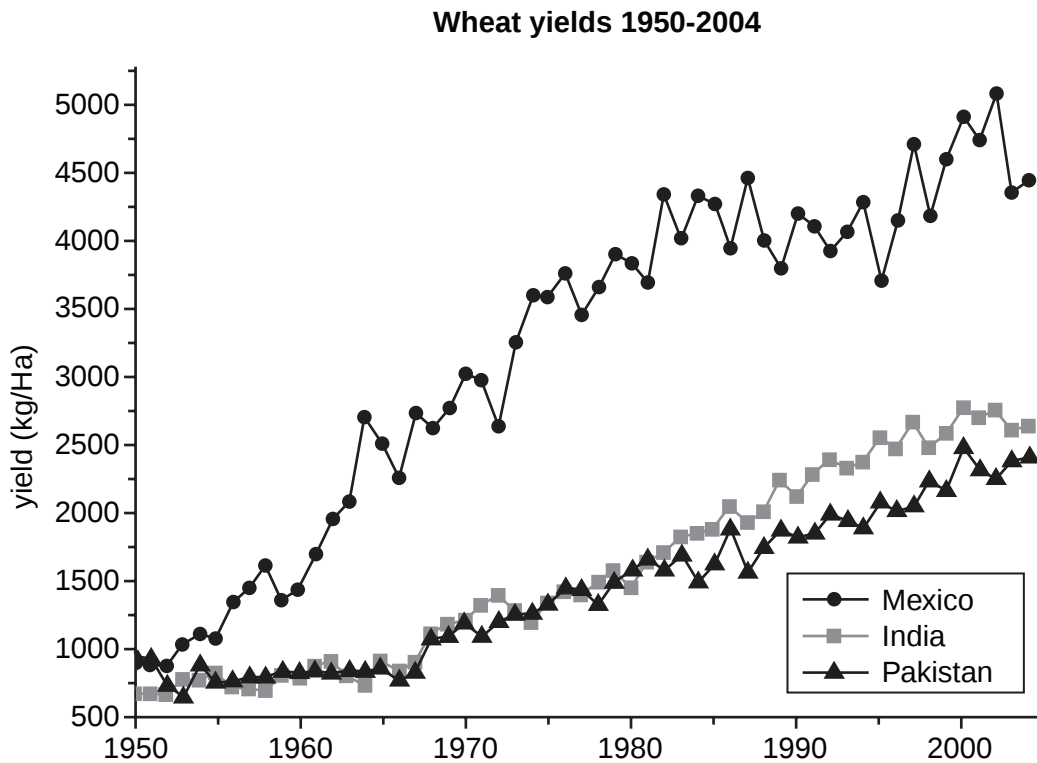
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- 5 Study the graph below which shows how the yield of wheat has changed in three countries over the past 55 years.

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- (a) (i) State the yield in Mexico in 1955 and 2000.

1955

2000 [2]

- (ii) Increases in yield, in Mexico, were brought about by the 'Green Revolution'. Explain how this increase in the yield of wheat was achieved.

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..... [3]

- (iii) The Green Revolution began in Mexico in the 1950s and was then introduced into India and Pakistan. From the graph, state when you think these methods were first used in India and Pakistan.

..... [1]

(b) Describe and explain **two** problems resulting from the Green Revolution.

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.....[4]

6 (a) What is coal and how was it formed?

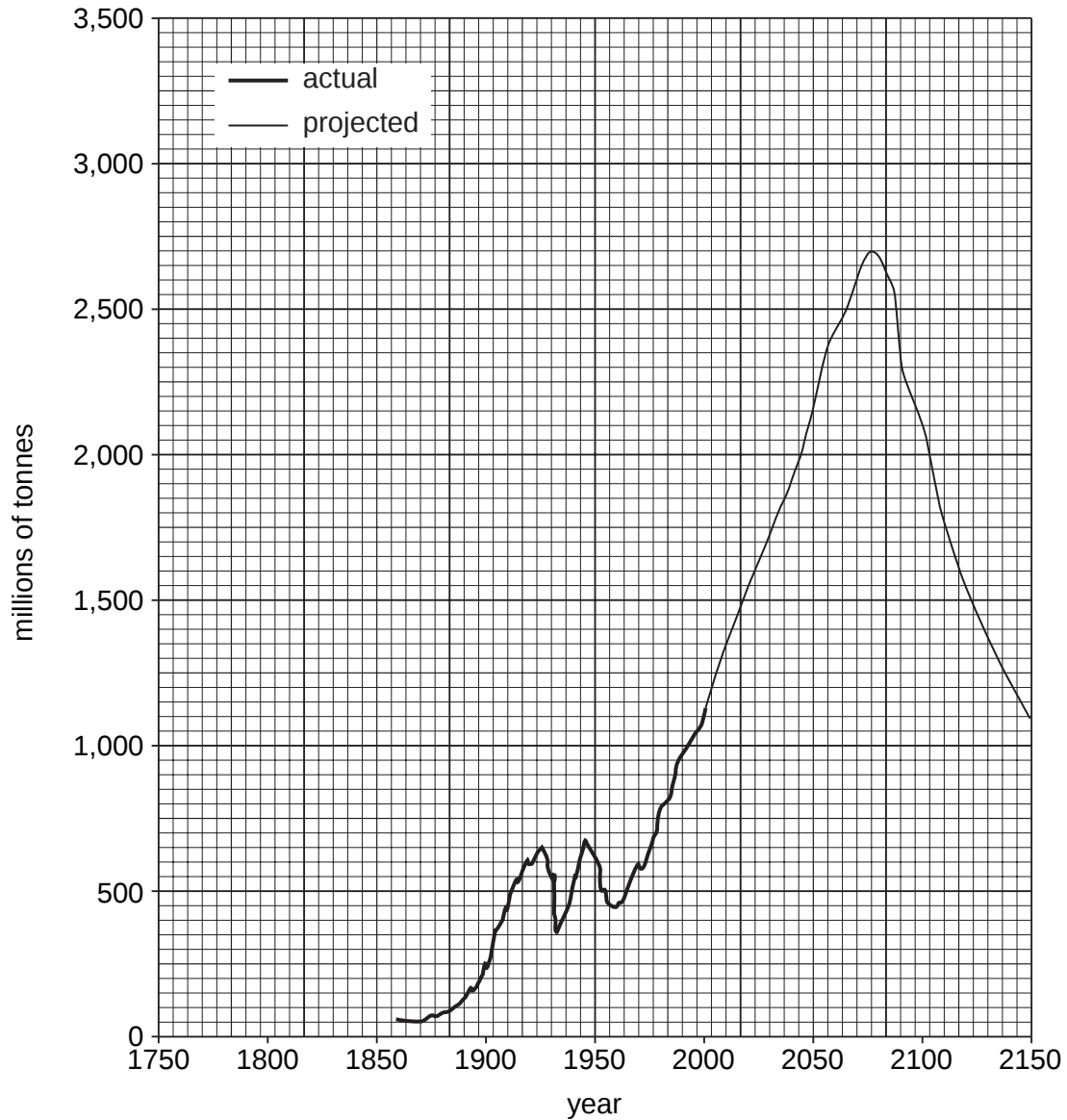
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..... [3]

(b) Look at the graph below of actual and projected coal production in the United States.



(i) How much coal will be produced in the peak year?

..... [1]

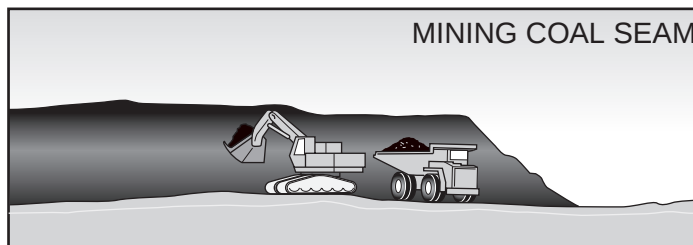
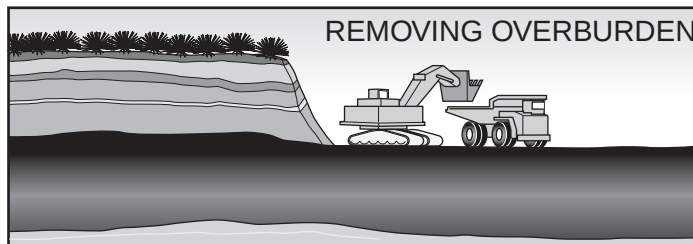
- (ii) How much more is this than was produced in 2000?

..... [2]

- (iii) Give **one** reason for this rise.

.....

..... [1]



- (c) The pictures above show open cast coal mining. The original poster had a third picture showing how the land was reclaimed after mining had finished. Using your knowledge of reclamation describe or draw what you think that picture might have looked like.

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[3]

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