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ENVIRONMENTAL MANAGEMENT **0680/23**

Paper 2 Management in Context **October/November 2025**

1 hour 45 minutes

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen. You may use an HB pencil for any diagrams or graphs.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use a calculator.
- You should show all your working and use appropriate units.

INFORMATION

- The total mark for this paper is 80.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **20** pages.

[Turn over

world map showing the location of Argentina

map of Argentina

Area of Argentina: 2 780 400 km^2

Population: 46.7 million (in 2023)

Children per woman: 2.17

Life expectancy: 78.5 years

Currency: Argentine peso (814 ARS = 1 USD)

Language: Spanish

Climate of Argentina: mild; very dry in the south-east and north-west; very cold in the Andes mountains

Terrain of Argentina: flat land with few trees in the north and south, Andes mountains in the west and coastline in the east

Main economic activities of Argentina: agricultural production, forestry, fishing, silver and gold mining, construction of motor vehicles and consumer goods

Argentina relies on exporting many agricultural and industrial products. An increase in the cost of food, fuel and services and high unemployment has an impact on the standard of living of many people. Many people are now living in poverty.

1 (a) (i) The working population of Argentina is aged between 15–64 years old.

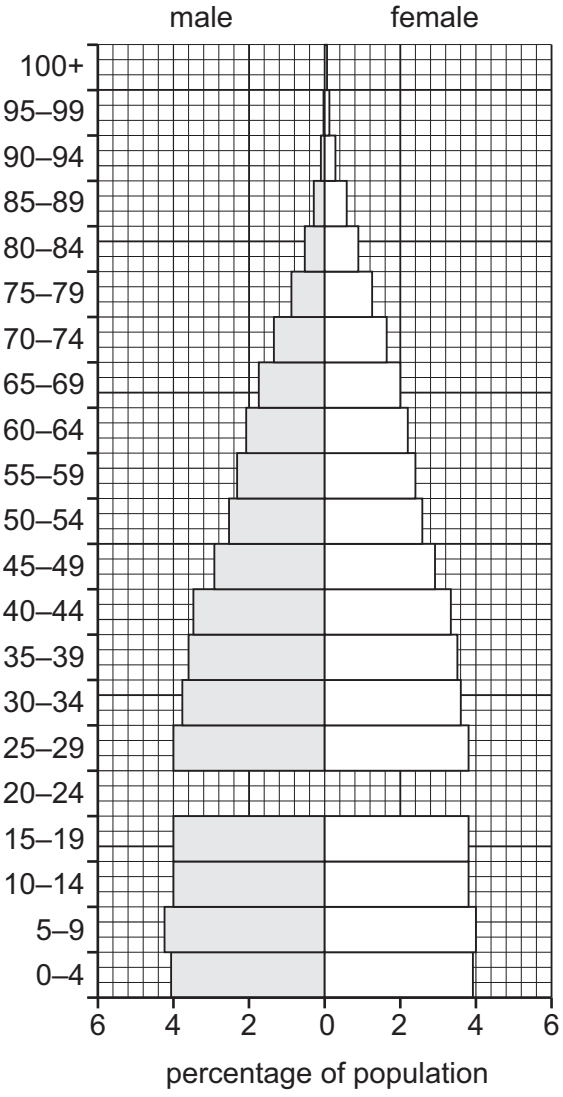
The working population is 63.8% of the total population.

Calculate the number of working age people in 2023.

..... million [1]

(ii) The diagram shows a population pyramid for Argentina.

.....



Complete the population pyramid:

- Label the vertical axis.
- Plot the missing data for 20–24 males as 4.0% and 20–24 females as 3.8%.

[2]

(b) Describe how poverty impacts population size.

.....

.....

.....

.....

.....

.....

.....

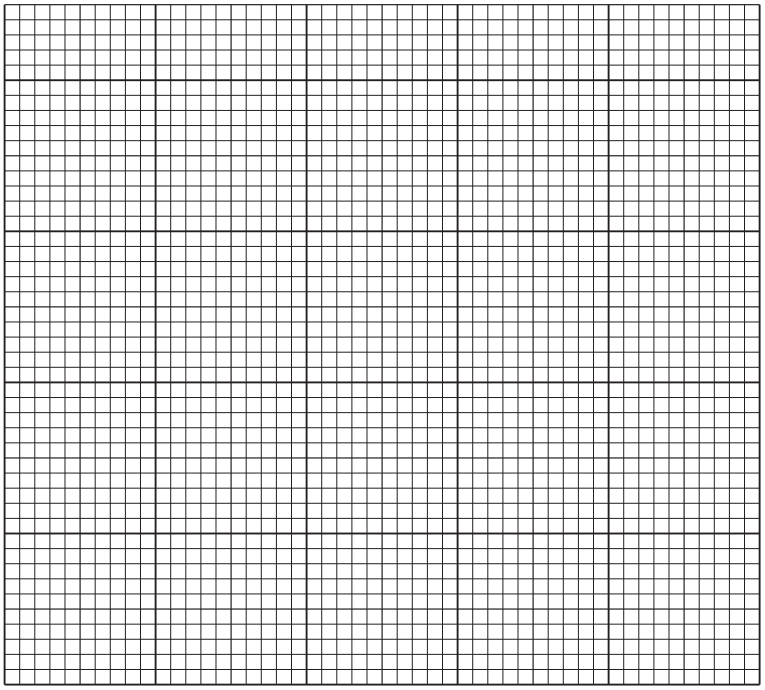
..... [4]

(c) More than 40 000 people are employed in the mining sector.

The table shows the annual production from five mines in Argentina.

mine	annual production / million tonnes
Río Turbio	1.5
Cerro Negro	0.9
Manantial Espejo	0.7
San José	0.5
Joaquin	0.1

(i) Plot a bar chart of the data in the table.



[4]

(ii) Determine how many times larger the annual production of the Río Turbio mine is compared to the San José mine.

Circle the correct answer.

2.0 **2.5** **3.0** **3.5** **4.0**

[1]

(d) The table shows total gold production in Argentina between 2014 and 2022.

year	2014	2015	2016	2017	2018	2019	2020	2021	2022
total gold production /tonnes	60.2	61.3	57.0	61.0	58.0	53.1	35.0	35.0	35.0

(i) Use information from the table to complete the sentences.

The year with the highest gold production was ..... .

The largest increase in gold production was between years .....

and ..... .

[2]

(ii) Calculate the percentage decrease in production from 2019 to 2020.

Give your answer to 1 decimal place.

.....% [2]

(e) Gold is used in electronic devices including mobile phones and computers.

When these devices are thrown away, they are known as e-waste. Most of this e-waste goes to landfill.

There is up to 100 times more gold in 1 tonne of e-waste than in 1 tonne of mined rock.

Suggest **two** reasons why a small quantity of gold is recycled from e-waste.

1 .....

.....

2 .....

.....

[2]

(f) The photograph shows a mine in the Andes mountains near San Juan.

The mine is estimated to have gold reserves of 280 tonnes.

State the type of mine shown in the photograph.

..... [1]

(g) The rock from the mine is crushed. The gold is then extracted using mercury. This mine has contaminated five rivers with mercury.

(i) Describe how mercury bioaccumulates in fish.

.....

.....

.....

.....

.....

..... [3]

(ii) Local people use water in plastic bottles for drinking.

Suggest **two** environmental impacts of using plastic bottles for drinking.

1 .....

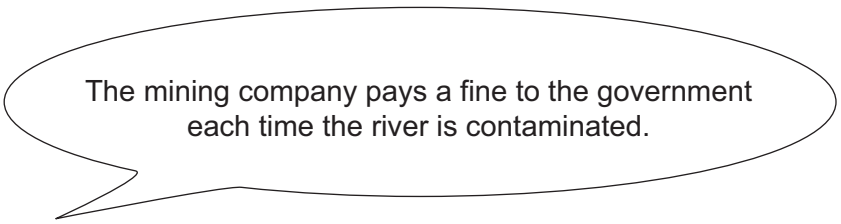
.....

2 .....

.....

[2]

(iii) A person living near the mine said:



People living near the mine predict that more river contamination events will occur in the future.

Suggest **one** reason for this prediction.

.....

..... [1]

(h) A student uses a questionnaire to record the views of people living near the mine about the river contamination.

Each question is answered **yes**, **no**, or **do not know**.

Question one: Do you think paying a fine will stop river contamination in the future?

Question two: Do you think the mine should be closed?

(i) Draw a tally chart to record the results of this questionnaire.

[2]

(ii) Describe how the student selects an unbiased sample of people living near the mine using:

- random sampling .....

.....

- systematic sampling. .....

.....

[2]

(i) The photograph shows a vicuña in a national park near the mine.

The national park aims to prevent the extinction of the vicuña and several other species of mammal.

State **three** ways national parks prevent loss of biodiversity.

1 .....

2 .....

3 .....

[3]

[Total: 32]

2 The photograph shows Yacyretá dam. This is a large hydro-electric dam across the River Paraná.

This dam is the largest source of electricity in Argentina.

(a) (i) Describe how a hydro-electric dam generates electricity.

.....

.....

.....

.....

.....

..... [3]

(ii) Some of the electricity generated at this location is exported to other countries.

Suggest **one** benefit to Argentina of exporting electricity.

.....

..... [1]

(b) The map shows the location of this hydro-electric dam and the main electricity power lines in Argentina.

Suggest **one** reason why there is only one main electricity power line in the south of Argentina.

..... [1]

(c) One benefit of a dam is electricity generation.

State **two** other economic benefits of a dam.

1 .....

.....

2 .....

.....

[2]

(d) Before the dam was built the river regularly flooded agricultural land.

State **three** impacts of flooding on agricultural land.

1 .....

.....

2 .....

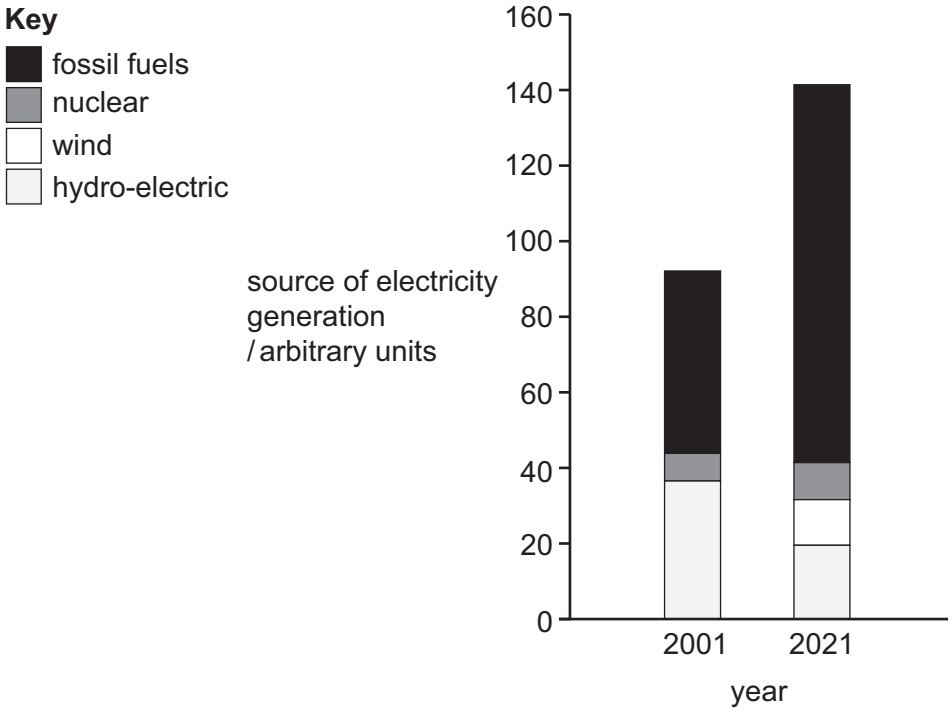
.....

3 .....

.....

[3]

(e) The bar chart shows the sources of electricity generation in Argentina in 2001 and 2021.



Describe changes in the sources of electricity generation from 2001 to 2021.

.....

.....

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.....

.....

..... [3]

[Total: 13]

3 The photograph shows a field of cotton in the north of Argentina.

(a) A pest called the boll weevil damages the cotton plants and reduces the yield.

Insecticides control the boll weevil.

(i) State **two** impacts of managing a pest population using insecticides.

1 .....

.....

2 .....

.....

[2]

(ii) Cotton is also grown in two countries next to Argentina.

The three countries have agreed the same pest management strategy to control boll weevils.

Suggest **two** reasons why this strategy is successful.

1 .....

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2 .....

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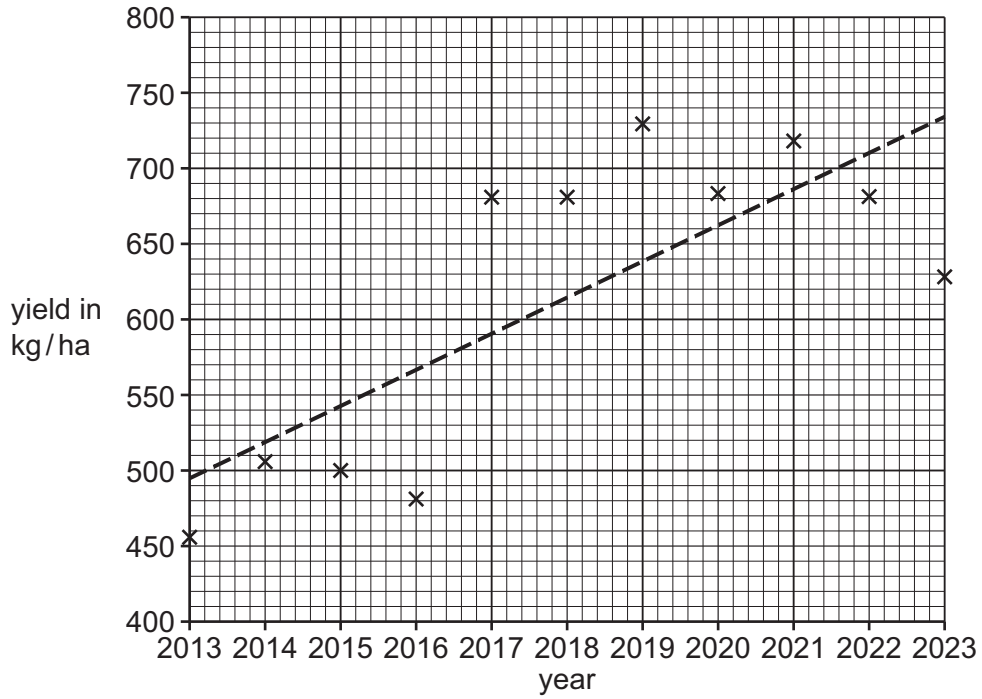
[2]

(b) The graph shows the cotton yield in Argentina between 2013 and 2023.

Key

– – – – overall trend



(i) State the year with the highest yield.

..... [1]

(ii) State the yield in 2014.

..... kg / ha [1]

(iii) Suggest **one** benefit of using an overall trend on this graph.

.....

..... [1]

(iv) Insecticides are one way of increasing cotton yield.

State **three** other ways farmers can increase the yield of cotton.

1 .....

2 .....

3 .....

[3]

[Total: 10]

4 **(a)** Soybeans are grown in Argentina as a cash crop.

In 2016, 60 million tonnes of soybeans were produced.

In 2023, only 27 million tonnes of soybeans were produced.

Explain the economic impacts of this reduction in soybean production.

.....

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..... [3]

(b) In 2023, rainfall was below average in Argentina. This caused drought conditions in large areas of the country.

(i) Complete the sentence.

One cause of below average rainfall is prolonged .....

atmospheric ..... .

[2]

(ii) Describe ways the impacts of drought can be managed.

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..... [4]

[Total: 9]

5 The north-west region of Argentina is very dry. Many plants and animals have adapted to live in this dry environment. Some of the land has now been cleared for farming. This is predicted to impact the biodiversity of the region.

(a) A student surveys the biodiversity of beetles in this region using pitfall traps.

The student uses the following method.

- Select one area of natural vegetation and one area of farmland.
- Place a 10 m transect line at each location.
- Place one pitfall trap at 2 m intervals along the transect.
- Collect the beetles from each pitfall trap after 24 hours.

(i) Describe how to build and use a pitfall trap.

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..... [4]

(ii) The results of the survey are shown in the table.

	number of different beetle species	**total number of beetles**
natural vegetation	25	103
farmland	14	51

Write **two** suitable conclusions for this survey.

1 .....

.....

2 .....

.....

[2]

(iii) The student decides to repeat the survey on a different day.

Suggest **two** other ways the student could improve this survey.

1 .....

.....

2 .....

.....

[2]

(b) The results of the first and repeated survey are shown in the table.

	number of different beetle species		total number of beetles	
	first survey	**repeated survey**	**first survey**	**repeated survey**
natural vegetation	25	24	103	520
farmland	14	12	51	251

(i) Calculate the mean number of beetles in natural vegetation.

Give your answer as a whole number.

..... [2]

(ii) Suggest why the mean number of beetles must be given as whole number.

.....

..... [1]

(c) (i) Beetles are important pollinators in this region.

Describe the process of pollination by beetles.

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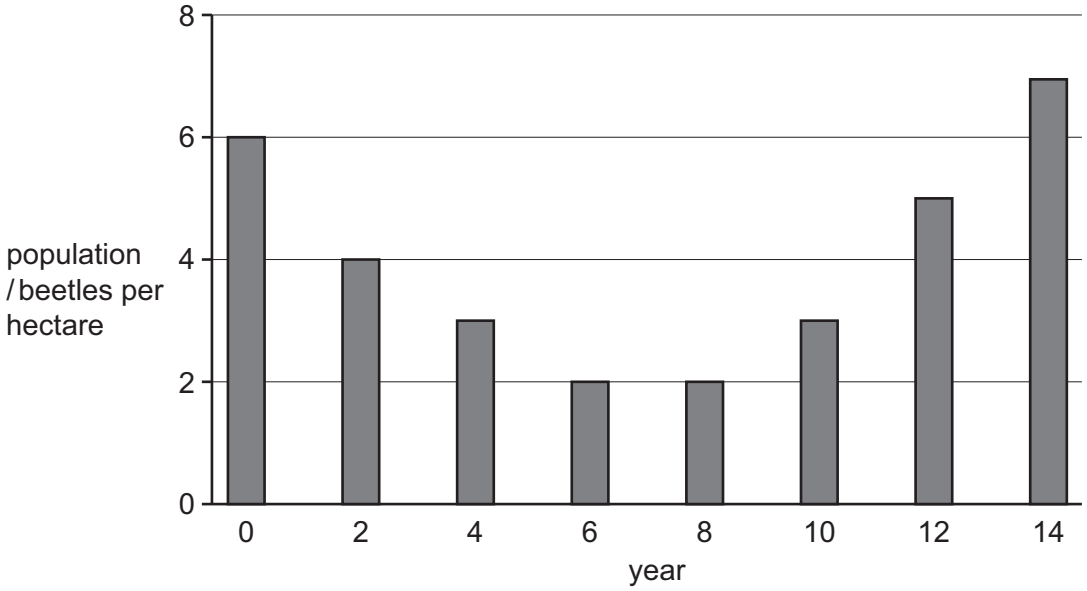
..... [3]

(ii) The bar chart shows the beetle population in another area of Argentina.



A management strategy was introduced to protect the beetle population.

The strategy was successful.

Suggest the year the strategy was introduced.

Give a reason for your answer.

year .....

reason .....

.....

[2]

[Total: 16]