wjec cbac

GCSE

C112U20-1

eduqas
Part of WJEC

FRIDAY, 9 JUNE 2023 – MORNING

GEOGRAPHY B – Component 2
Problem Solving Geography
1 hour 30 minutes

For Examiner's use only		
	Maximum Mark	**Mark Awarded**
Part A	46	
Part B	14	
Part C	12	
SPaG	4	
Total	76	

ADDITIONAL MATERIALS

Resource Folder.

In addition to this paper you may use a calculator and a ruler if required.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. Additional space is provided for some questions within the booklet (if required). If further space is required for any question, you should use the additional page(s) at the end of this booklet. The question number(s) should be clearly shown.

INFORMATION FOR CANDIDATES

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

You are reminded that assessment will take into account your ability to spell, punctuate and use grammar and specialist terminology accurately in your answer to Part C.

Answer **all** questions.

Jakarta is the capital city of Indonesia, a Newly Industrialised Country (NIC). Jakarta has experienced rapid growth in recent years and faces several problems.

Part A:	explores the problems of coastal management and living in Jakarta.	46 marks
Part B:	offers some solutions to these issues.	14 marks
Part C:	asks you to justify your choice of solution.	16 marks

Part A

You are advised to spend about **45 minutes** on this part.

(a)   (i)   Study **Figure 1** on **page 2** of the **Resource Folder**.

Describe the location of Jakarta. [2]

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Study **Figure 2** on **page 2** of the **Resource Folder**. It shows Jakarta's population growth.

(ii)   Describe the changes in Jakarta's population between 1870 and 2020. [2]

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(iii)   Population growth like this can cause problems for urban areas. Give **four** potential problems. [4]

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4. ....

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(iv) Explain why cities benefit from population growth. [4]

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(b) (i) Jakarta's coast currently receives some protection from sea walls.

Name **two** benefits of a sea wall. [2]

Benefit 1: ....

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Benefit 2: ....

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(ii) Give **two** reasons why sea walls might not be a long-term solution. [4]

Reason 1: ....

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Reason 2: ....

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Turn over.

(c) Parts of Jakarta are subsiding (sinking into the ground). Study **Figure 3** on **page 3** of the **Resource Folder**. It shows the location of various sites across Jakarta. **Table 1** shows how far on average each site has sunk.

Table 1

	Location	Amount of sinking (cm/year)
1	Tanjung Priok	10.1
2	Penjaringan	10.7
3	Pademangan	10.8
4	Koja	11.6
5	Kelapa Gading	12.6
6	Cilincing	12.5
7	Pulo Gadung	8.3
8	Matraman	5.4
9	Duren Sawit	0.7
10	Cakung	7.4
11	Pancoran	5.6
12	Tambora	15.9
13	Taman Sari	15

(i) Calculate the median value of these measurements.

Show your working in the box. [2]

Answer: ....

(ii) Explain why the median value may not be regarded as the most appropriate measure of central tendency. [2]

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(iii) Join the terms 'over-abstraction' and 'water footprint' with a straight line to the correct definition. [2]

	Taking too much water from an aquifer
	The water used by a household
Over-abstraction	Water lost by evaporation from a forest
	Having enough water all the year
Water footprint	How much water flows through a river

(iv) Study **Figure 4** on **page 4** of the **Resource Folder**.

Suggest why Jakarta is sinking. [4]

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(v) Jakarta has large areas of poor quality densely populated housing. Many of these are located on low-lying coastal land at the edge of the city.

Explain why the poorest housing is often located on the edge of cities in LICs/NICs. [4]

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(d) (i) Study the table below.

Mangrove forest along the coastline in Jakarta, Indonesia over time

Year	Mangrove (km^2) along coastline in Jakarta
1980	116.5
2000	16.8
2010	17.1
2016	16.5

There have been $100 \, km^2$ of mangrove lost from 1980 to 2016.
What percentage of Jakarta's mangrove forest has been lost from 1980 to 2016?

Show your working in the box. [2]

Answer: .... %

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(ii)   Study the diagram below. It shows part of a food web in mangrove forests.

Key:
= producers
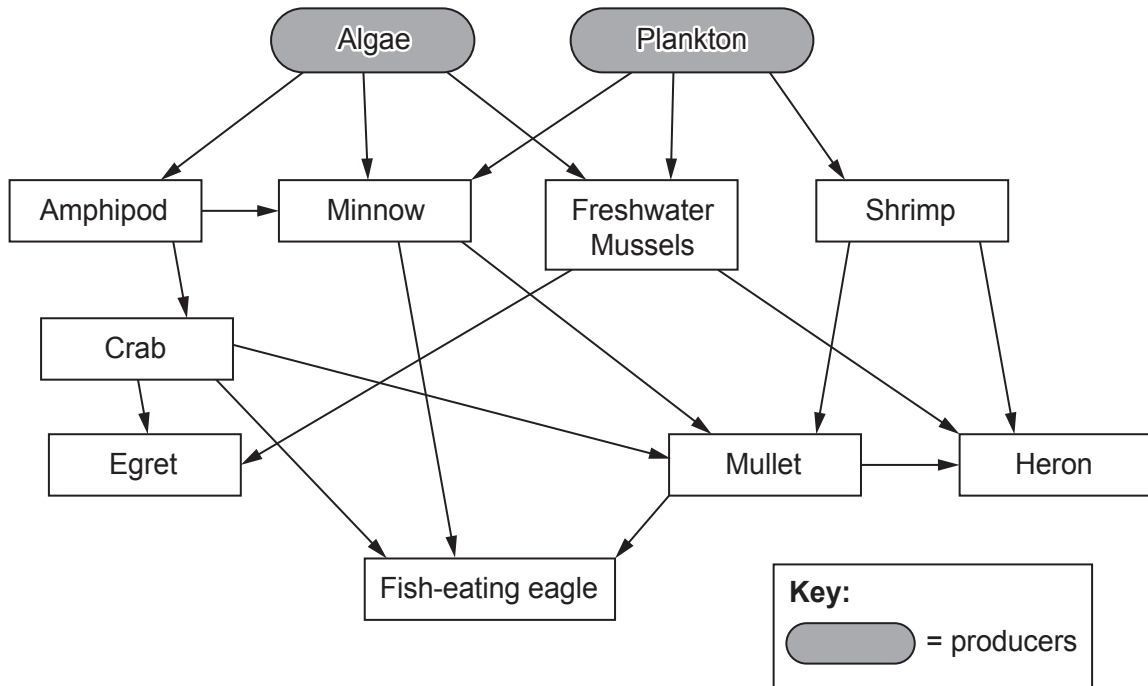
Identify **two** primary consumers that will decline if the number of plankton were to be significantly reduced. [2]

1. ....

2. ....

(iii)   Much of the mangrove forest along Jakarta's coastline has been destroyed.

Explain why some ecosystems are being modified/changed by people.   [4]

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(e)   Climate change is affecting Jakarta by making the problems of coastal flooding, sinking ground, and mangrove forest loss, worse.

Suggest how climate change could make Jakarta's problems worse.   [6]

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End of Part A

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Part B

You are advised to spend about **20 minutes** on this part.

Jakarta's government is considering three options to reduce the threats facing its people.

> **Option 1: Build the Giant Sea Wall. This is another, bigger, sea wall
> further out to sea to 'hold the line'.**

Study **Fact File 1** on **page 5** of the **Resource Folder**.

The Great Sea Wall will be built with aid from The Netherlands (a HIC).

(a) (i) Give **two** reasons why there are advantages to High Income Countries (HICs) that
donate aid. [4]

Reason 1: ....

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Reason 2: ....

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(ii) The government of Jakarta is working with The Netherlands to build the Great
Sea Wall.

Give **two** advantages that working with a HIC may bring for the government of a
NIC. [2]

Advantage 1: ....

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Advantage 2: ....

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> **Option 2:** **Replant the mangrove forests. The government is considering replanting the mangrove forests that have been lost.**

(b)   Study **Fact File 2** on **page 6** of the **Resource Folder**.

Why might fishermen in Jakarta be in favour of replanting the mangrove forests?   [2]

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> **Option 3:** **Retreat the line and build a new capital city. The government is considering whether to defend Jakarta's coastline at all. If the coastline is not defended it is called "retreat the line".
> To relieve some of the pressures on Jakarta, the government is planning on moving to a brand-new city in another part of Indonesia with no risk of flooding.**

(c)   (i)   Study **Figure 6** on **page 7** of the **Resource Folder**. Describe the location of the proposed new capital city **in relation to** Jakarta.   [2]

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Moving the capital city could allow areas of poor quality housing in Jakarta to be cleared.

(ii)   Explain **one** advantage of removing poor quality housing for governments.   [2]

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(iii) Explain **one** problem removing poor quality housing will have for the people that live there. [2]

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End of Part B

Part C

You are advised to spend about **25 minutes** on this part.

The government is considering three options to reduce the threats facing its people.

Which **one** option should the government choose for Jakarta?

Option 1:   Build the Giant Sea Wall
Option 2:   Replant the mangrove forests
Option 3:   Retreat the line and build a new capital city.

Write a report that considers which option the government should choose.

Consider the social, economic, and environmental sustainability of your decision. You should use the resources from this paper as well as your own studies. [12]

Your ability to spell, punctuate and use grammar and specialist terminology accurately will be assessed in your answer. [4]

I have chosen Option ....

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Additional space for Part C only:

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End of Part C

END OF PAPER

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Question number	Additional page, if required. Write the question number(s) in the left-hand margin.	Examiner only

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GEOGRAPHY B – Component 2

RESOURCE FOLDER

This folder is for use with questions in Component 2.
This folder need not be handed in with your answer booklet.

Figure 1 – The location of Jakarta


Figure 2 – Population Growth in Jakarta

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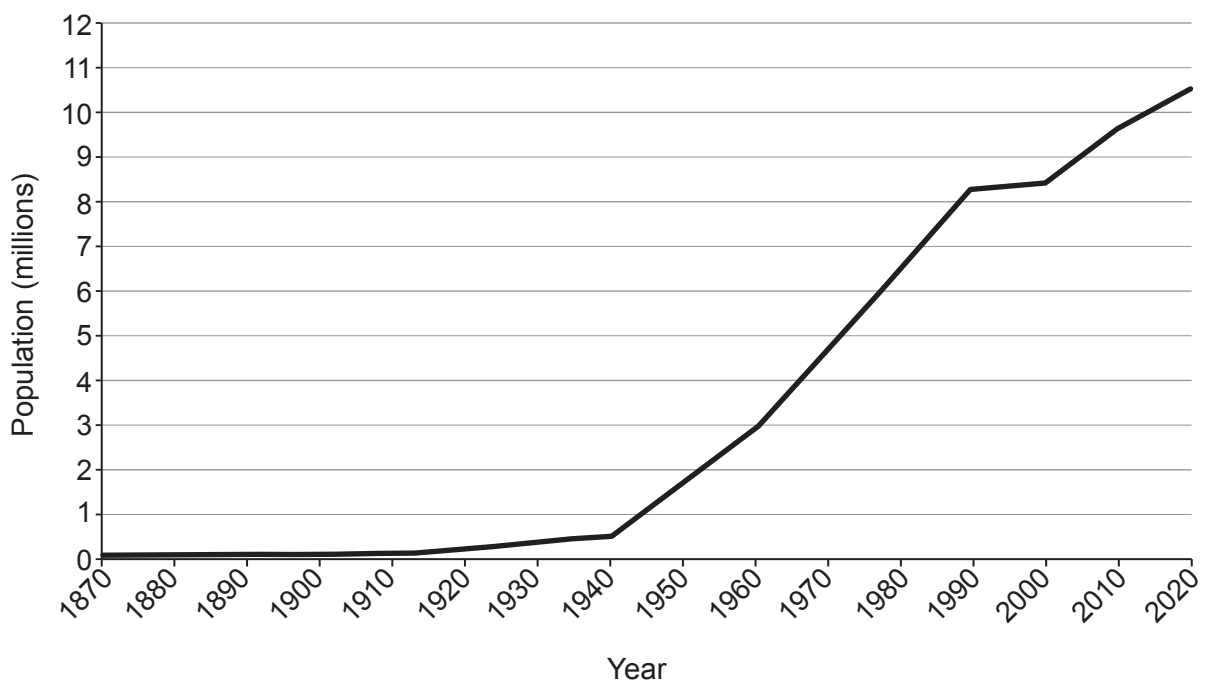
Figure 3 – Jakarta is sinking

	Location	Amount of sinking (cm/yr)
1.	Tanjung Priok	10.1
2.	Penjaringan	10.7
3.	Pademangan	10.8
4.	Koja	11.6
5.	Kelapa Gading	12.6
6.	Cilincing	12.5
7.	Pulo Gadung	8.3
8.	Matraman	5.4
9.	Duren Sawit	0.7
10.	Cakung	7.4
11.	Pancoran	5.6
12.	Tambora	15.9
13.	Taman Sari	15

Key:

Potential for flooding

■ High
■ Average
■ Low

N

Sinking buildings in Jakarta

Figure 4 – A cross-section diagram of Jakarta
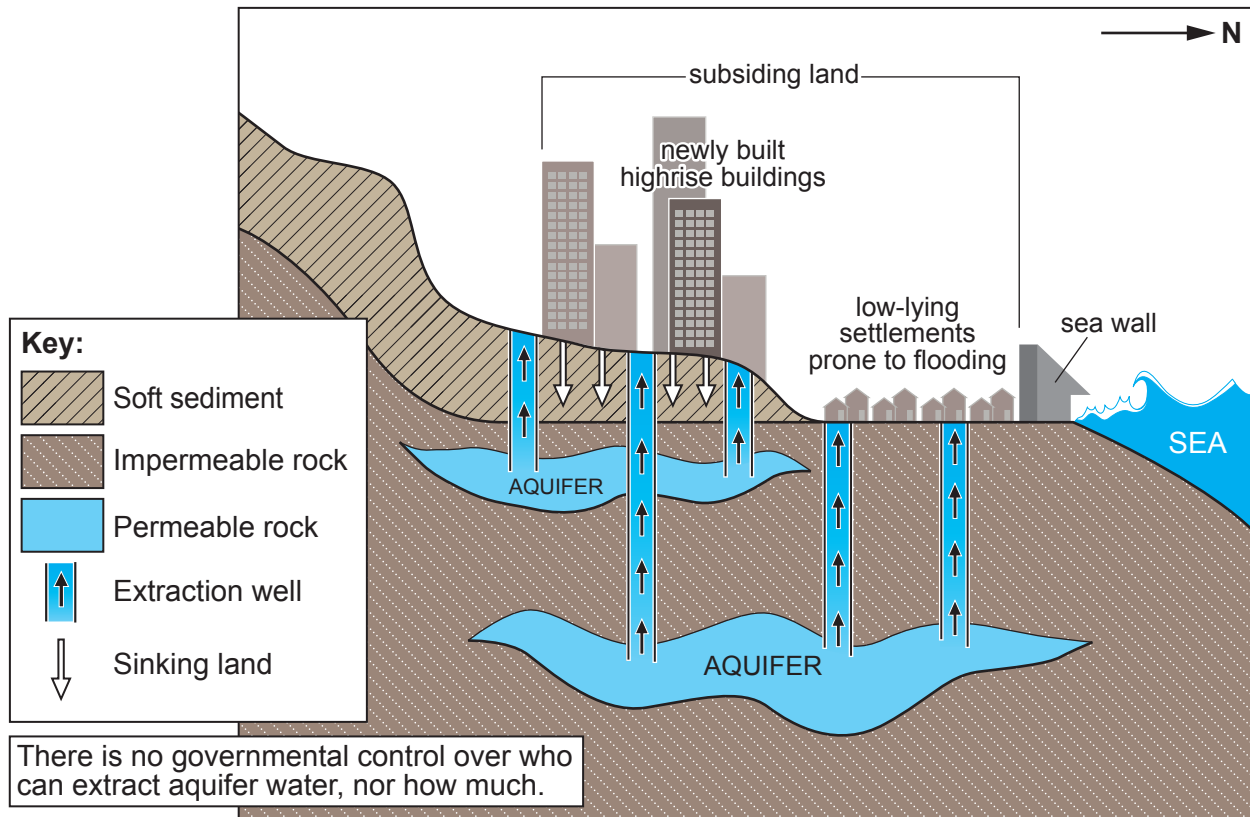
Figure 5 – The current sea wall at Jakarta

Fact File 1 – Plans for a new sea wall

The Giant Sea Wall Jakarta

The Giant Sea Wall Jakarta is a coastal development project that includes the construction of a giant sea wall and the reclamation of land.

The cost of the project is estimated at about US$ 40 billion.

The Giant Sea Wall will also become a centre of urban development including offices and housing, low-cost housing, green areas, and beaches.

The project could destroy a nearby coral reef and lead to polluted water collecting behind the sea wall.

The Giant Sea Wall will be built in the form of a Garuda (Indonesia's national symbol) and it will take 10 to 15 years before construction of this wall is finished.

It will be an international collaboration between the governments of Indonesia and the Netherlands.

Many areas of poor quality housing will be cleared to make way for the Giant Sea Wall and their residents forcibly evicted. Many of these residents relied on being close to the sea to earn a living.

It is planned to house approximately two million people.

Fact File 2 – Mangrove forests

Economic:
Mangrove forests earn US $800 billion a year across the world.

Protection:
Mangrove forests are up to five times as effective as hard engineering methods in defending the coast.

Climate:
The destruction of mangrove forests releases more carbon than the annual emissions of Australia.

Replant the mangrove forests
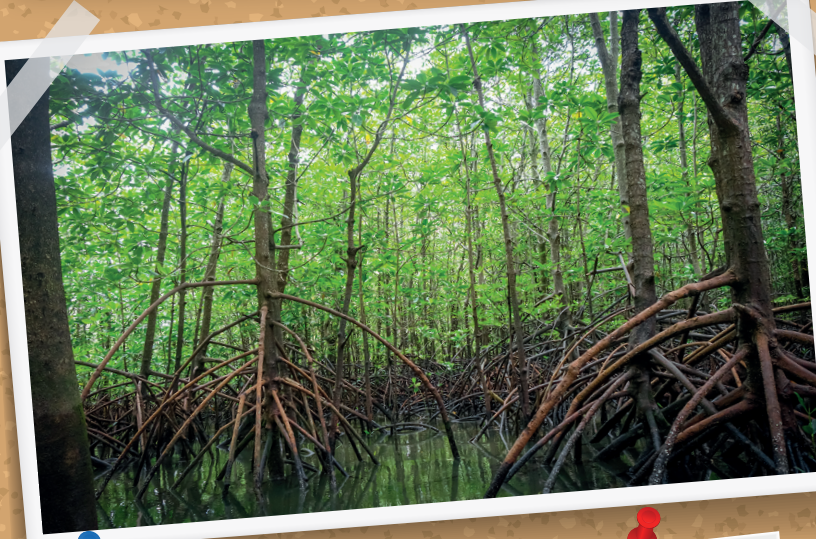
Water:
Mangrove forests help filter water so it is cleaner.

Food:
Mangrove forests are home to more than 3000 species of fish.

Resources:
Mangrove forest are a valuable source of timber.

Climate:
Mangrove forests can store 3 to 5 times as much carbon as a tropical forest.

Livelihoods:
120 million people live near mangrove forests.

Figure 6 – Jakarta and the new site

Fact File 3 – A new capital city

Indonesia is not the first country to change its capital. Brazil, Pakistan, and Nigeria have all changed their capital cities.

Most of the country's wealth is concentrated in Jakarta and many Indonesians living elsewhere have felt forgotten.

The project will cost 466 trillion rupiah (US$30bn).

Proposed plan to move to a new capital city

Jakarta is the home of Indonesia's national newspapers and television stations.

Jakarta traffic jams alone cost the economy 100 trillion rupiah (US$6bn) a year.

Jakarta is 8 metres above sea level.

Jakarta earns 17% of Indonesia's GNI.

Jakarta is home to 10.5 million people.