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Cambridge Assessment International Education

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CANDIDATE NAME

CENTRE NUMBER

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7722428863

ENVIRONMENTAL MANAGEMENT **0680/13**

Paper 1 Theory **October/November 2024**

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. Any blank pages are indicated.

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Section A

1 **(a)** The diagram shows part of the water cycle.

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(i) Interception is one process in the water cycle.

State **two** other processes in the water cycle shown in the diagram.

1 .....

2 .....

[2]

(ii) State **two** places shown in the diagram where water is stored.

1 .....

2 .....

[2]

(b) State the meaning of the term interception in the water cycle.

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..... [1]

(c) State the source of energy for the water cycle.

..... [1]

(d) In some places there is a layer of frozen soil under the Earth's surface.

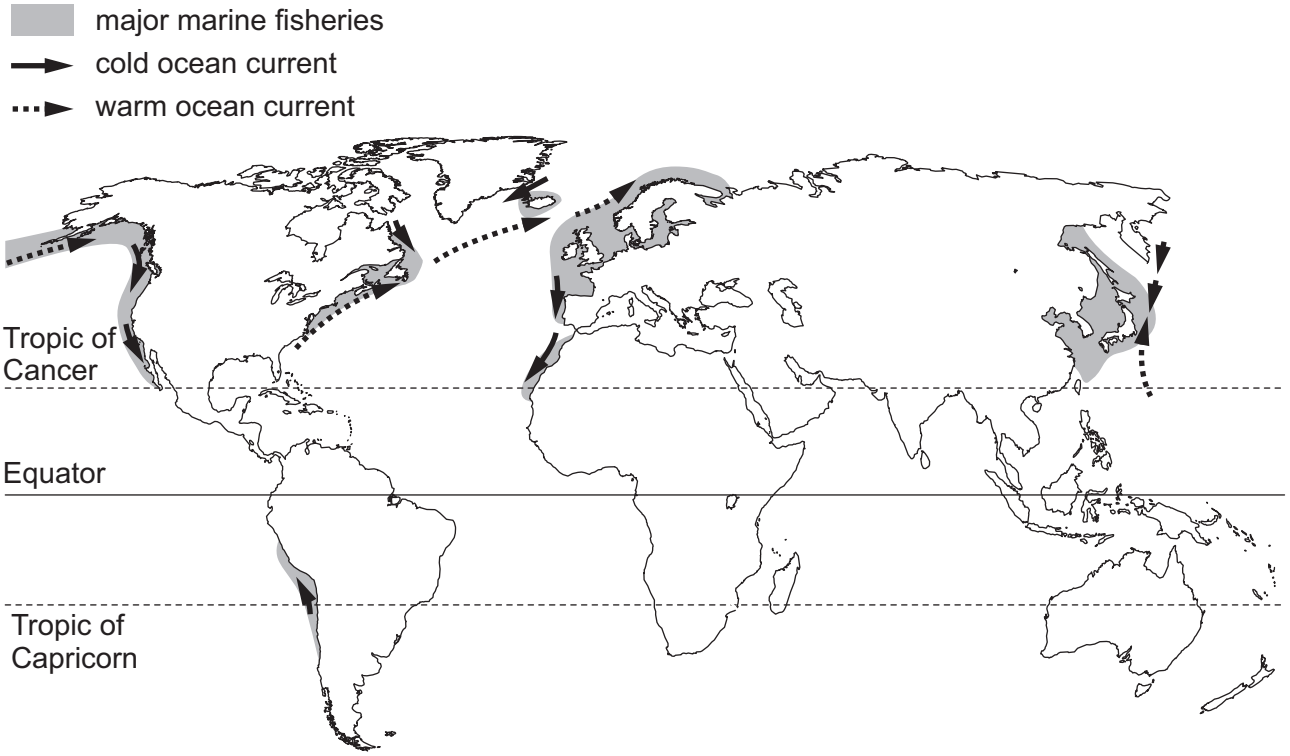
State the name of this layer of frozen soil.

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2 The map shows the locations of some major marine fisheries and some cold and warm ocean currents.



(a) The major marine fisheries shown on the map are located near coasts and on continental shelves.

Explain why these fisheries are in these locations.

coasts .....

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continental shelves .....

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[4]

(b) State **two** strategies for the sustainable harvesting of marine fish populations.

1 .....

2 .....

[2]

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3 **(a)** Different types of agriculture are shown.

Draw **one** straight line from each type of agriculture to the correct description.
One has been drawn for you.

type of agriculture	description of agriculture
arable	production is for sale to make a profit
commercial	production of crops
subsistence	production of animals or animal products
pastoral	production of food for the farmer and the farmer's family

[2]

(b) State **one** negative impact on the environment for each of these agricultural practices.

overuse of insecticides .....

.....

overuse of fertilisers .....

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mismanagement of irrigation .....

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[3]

(c) Explain how agroforestry can be a sustainable agricultural practice.

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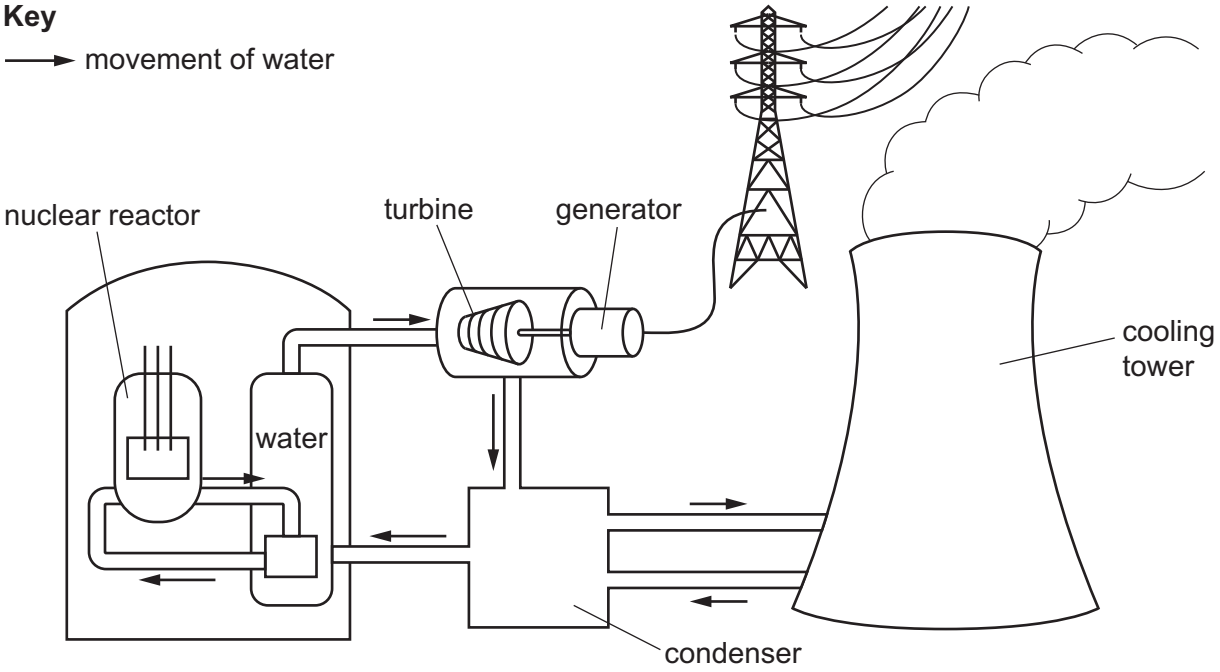
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Section B

4 **(a)** The diagram shows how nuclear power is used to generate electricity.



Describe how nuclear power is used to generate electricity.

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(b) Describe environmental advantages of using nuclear power compared to fossil fuels to generate electricity.

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..... [3]

(c) In December 2021, the government of France announced plans to build more nuclear power stations.

Suggest **three** reasons why some people do **not** want nuclear power stations.

1 .....

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2 .....

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3 .....

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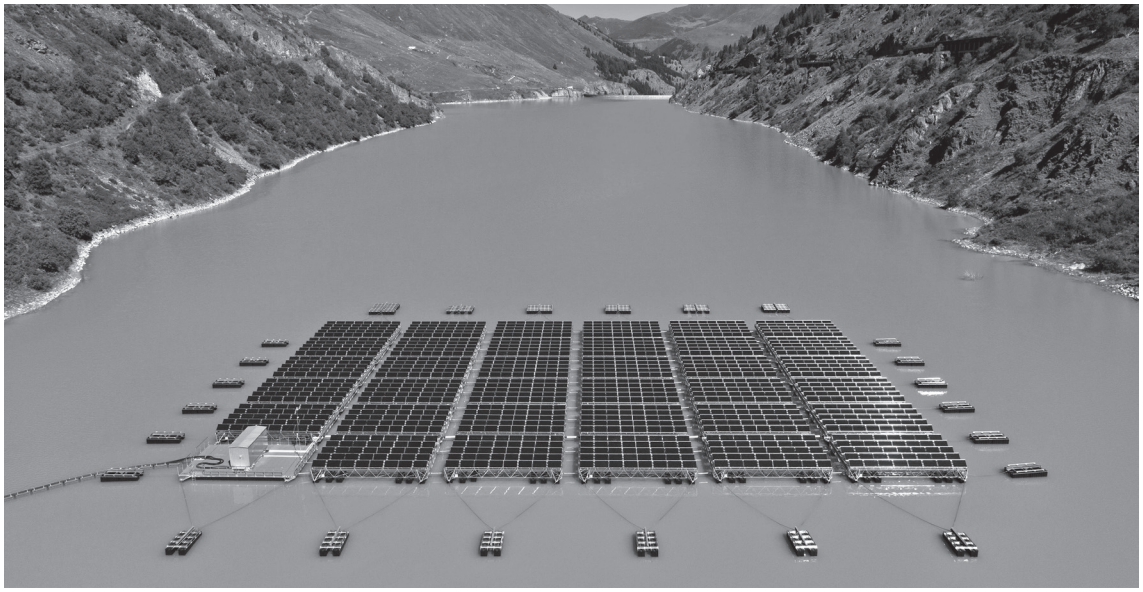
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(d) In 2019, Switzerland reduced the number of nuclear power stations and increased the electricity generated by solar power.

The fact sheet gives information about a new solar power station.

Lac des Toules Solar Power Station



Lac des Toules is a reservoir that supplies a hydro-electric power station. The reservoir is 1810 m above sea level and is in mountains where there is strong solar radiation.

The solar panels float on the reservoir. The panels capture direct light and light reflected from the water. This means 50% more electricity is generated than a solar power station that is the same size built on land.

The reservoir is drained each year for maintenance.

(i) Suggest environmental benefits of the solar power station shown in the fact sheet.

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..... [3]

(ii) Suggest **one** reason why draining the reservoir every year has a negative impact on the ecosystem.

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..... [1]

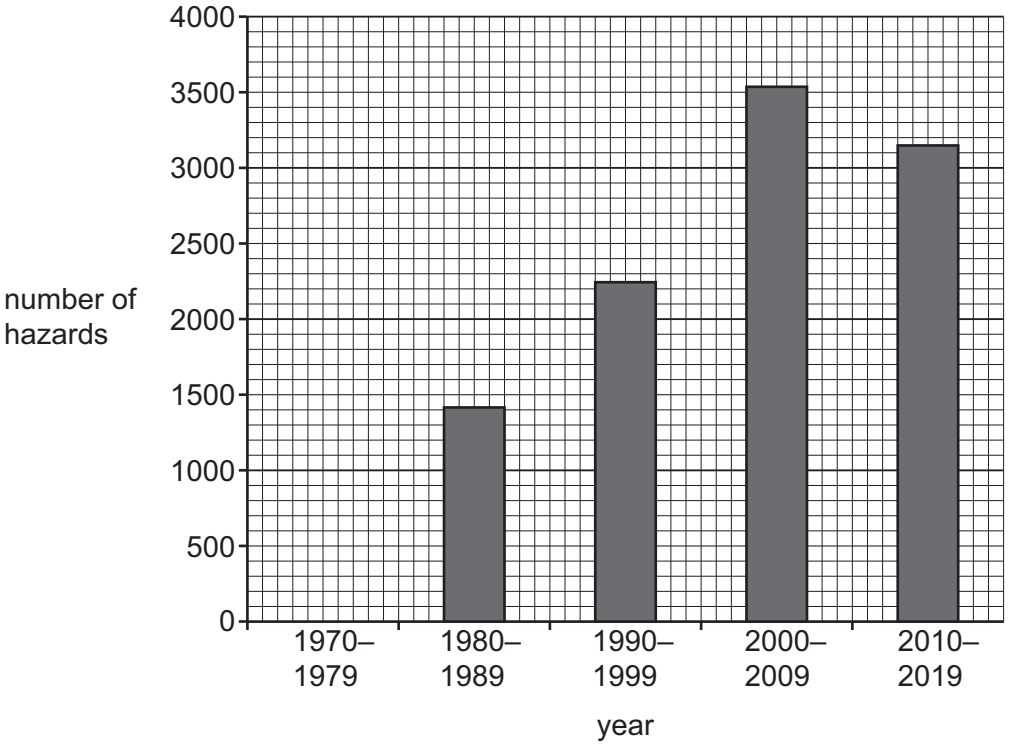
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5 **(a)** The bar chart shows the number of reported natural hazards caused by extreme weather from 1970 to 2019.



(i) There were 710 reported natural hazards caused by extreme weather between 1970 and 1979.

Plot this data on the bar chart. [2]

(ii) Describe the trends shown in the bar chart from 1980–2019.

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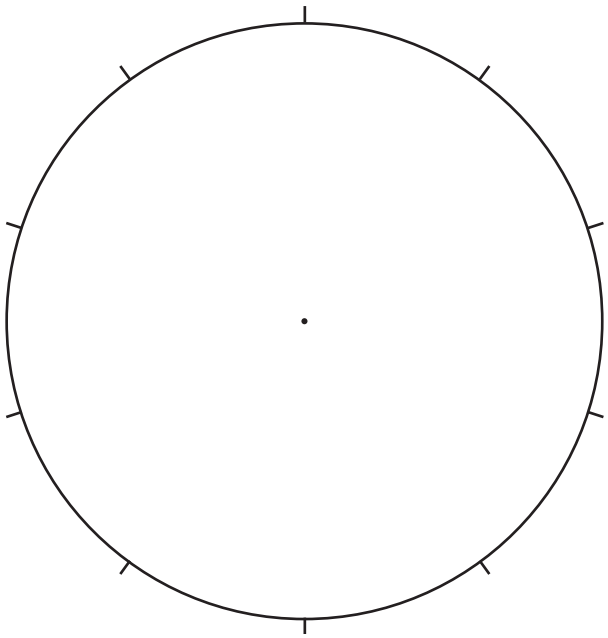
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(b) The table shows data for six natural hazards caused by extreme weather from 1970 to 2019.

natural hazard	percentage of total events	number of deaths	percentage of total deaths
drought	5	701 133	34
extreme temperature	5	185 594	9
flood	45	329 945	16
landslide	5	41 243	2
storm	35	804 241	39
wildfire	5	2 773	0
total		2 064 929	

(i) Plot the **percentage of total events** as a pie chart.

Complete the key.



Key

☐ .....

☐ .....

☐ .....

☐ .....

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[4]

(ii) State the **three** natural hazards that caused the largest numbers of deaths.

1 .....

2 .....

3 .....

[1]

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(iii) Calculate the range in the number of deaths for the six natural hazards.

range = ... [1]

(iv) There were a total of 11 072 natural hazard events.

17% of the storms were classified as tropical cyclones.

Calculate the number of tropical cyclones.

number = ... [1]

(v) State the latitudes north and south of the Equator where tropical cyclones form.

..... and ..... [1]

(vi) Suggest **three** reasons why the number of deaths from extreme weather hazards reduced between 1970 and 2019.

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2 .....

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3 .....

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[3]

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(vii) Flooding was the most common of the natural hazards recorded.

Describe the causes of flooding.

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(viii) Suggest reasons why most of the deaths from the natural hazards were in less economically developed countries (LEDCs).

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Question 5 continues on page 14.

(c) A student investigates the financial losses caused by six storm events.

The student records the financial losses in a notebook.



(i) Record the data from the notebook in a suitable table.

[3]

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(ii) Write **two** conclusions about the financial losses caused by the six storm events.

1 .....

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2 .....

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[2]

(d) State **two** tectonic natural hazards.

1 .....

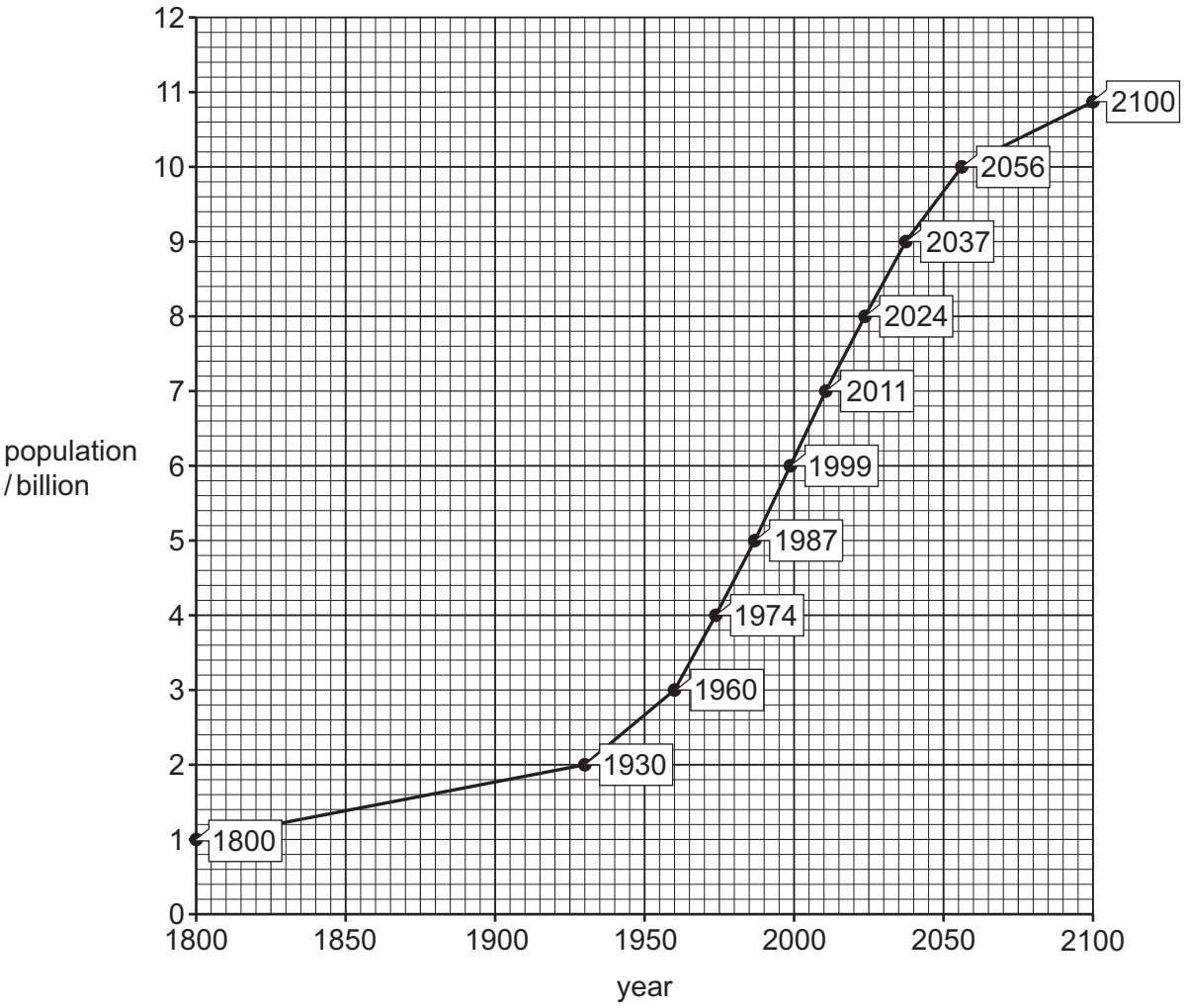
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6 **(a)** The graph shows world population growth since 1800 and estimated between 2024 and 2100.



Describe the changes shown in world population growth between 1800 and 2100.

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(b) Suggest the impact on fossil fuel reserves if the world population continues to increase.

Give reasons for your answer.

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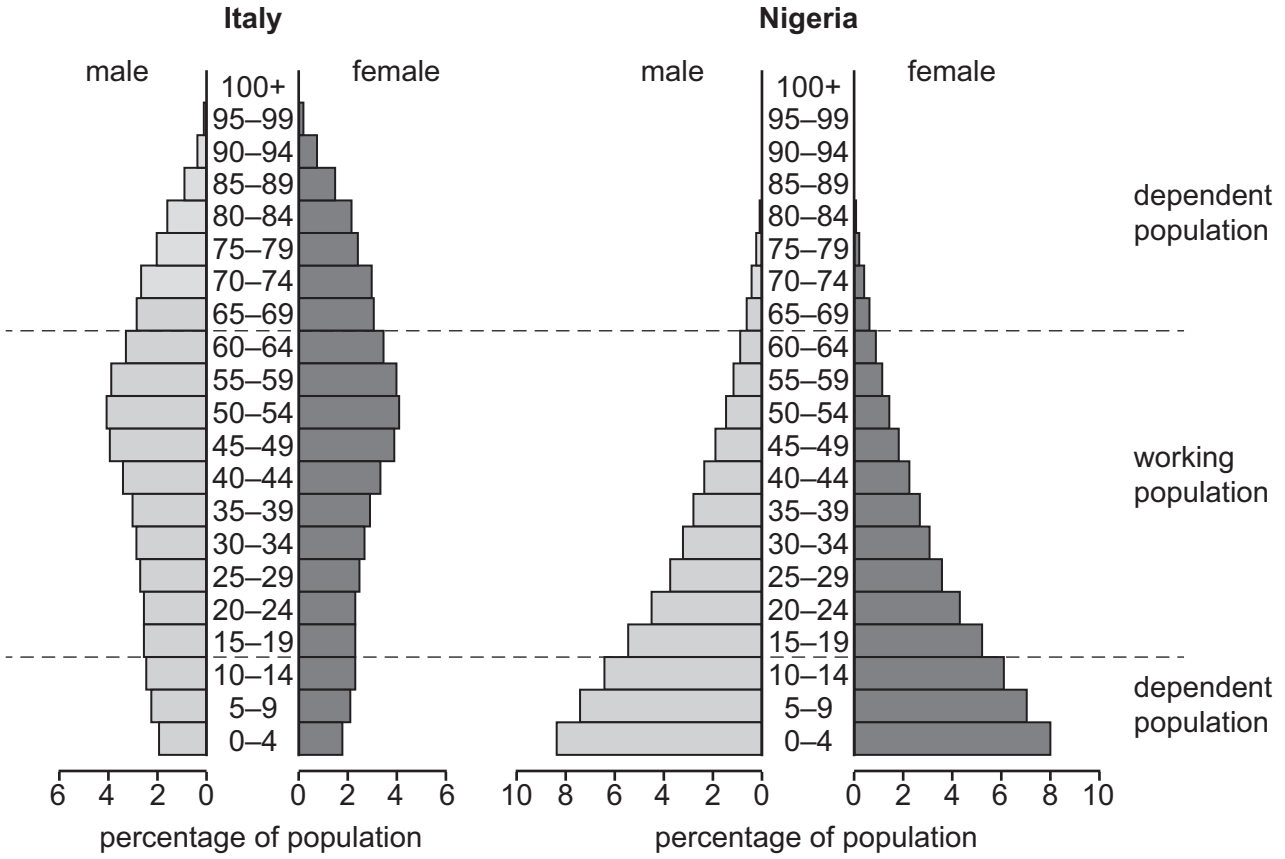
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(c) Italy is a more economically developed country (MEDC).

Nigeria is a less economically developed country (LEDC).

The diagram shows population pyramids for the two countries in 2021.



(i) Compare the dependent and working populations of Italy with those of Nigeria in 2021.

dependent populations .....

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working populations .....

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[3]

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(ii) Suggest **two** impacts of an ageing population on a country.

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[2]

(d) A student says:

The education of girls in LEDCs is the best strategy for managing world population growth.

To what extent do you agree with this statement. Give reasons for your answer.

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[6]

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