



CANDIDATE
NAME

--

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--

8291/12

October/November 2020

1 hour 30 minutes

3 1 9 1 6 9 8 0 6 3

You will need: Answer booklet/paper

- Section A: answer **all** questions. Write your answer to each question in the space provided on the question paper.
- Section B: answer **one** question. Write your answer on the separate answer booklet/paper provided.
- 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.
- 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.
- At the end of the examination, fasten all your work together. Do **not** use staples, paper clips or glue.

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

For Examiner's use	
Section A	
1	
2	
Section B	
Total	

DC (JC/CT) 186095/5
© UCLES 2020

[Turn over

Section A

Answer **all** questions in this section.

Write your answers in the spaces provided.

- 1 (a) Fig. 1.1 is a cross-section through a plate boundary.

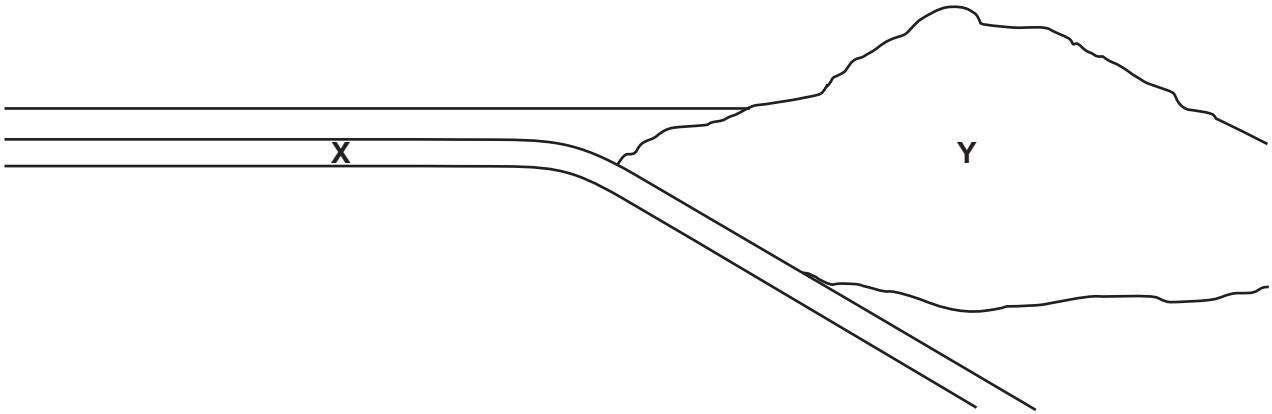


Fig. 1.1

- (i) Label the relative movement of the two tectonic plates shown by adding **two** arrows to the diagram shown in Fig. 1.1. [1]
- (ii) Name the type of crust in Fig. 1.1 labelled:
- X [1]
- Y. [2]
- (iii) State the name of the type of plate boundary shown in Fig. 1.1. [1]
- (iv) Explain how differences between the two types of crust result in the plate boundary shown in Fig. 1.1. [4]

- (b)** Fig. 1.2 is a map of the Pacific Plate and the surrounding area, showing the sites of some major earthquakes.

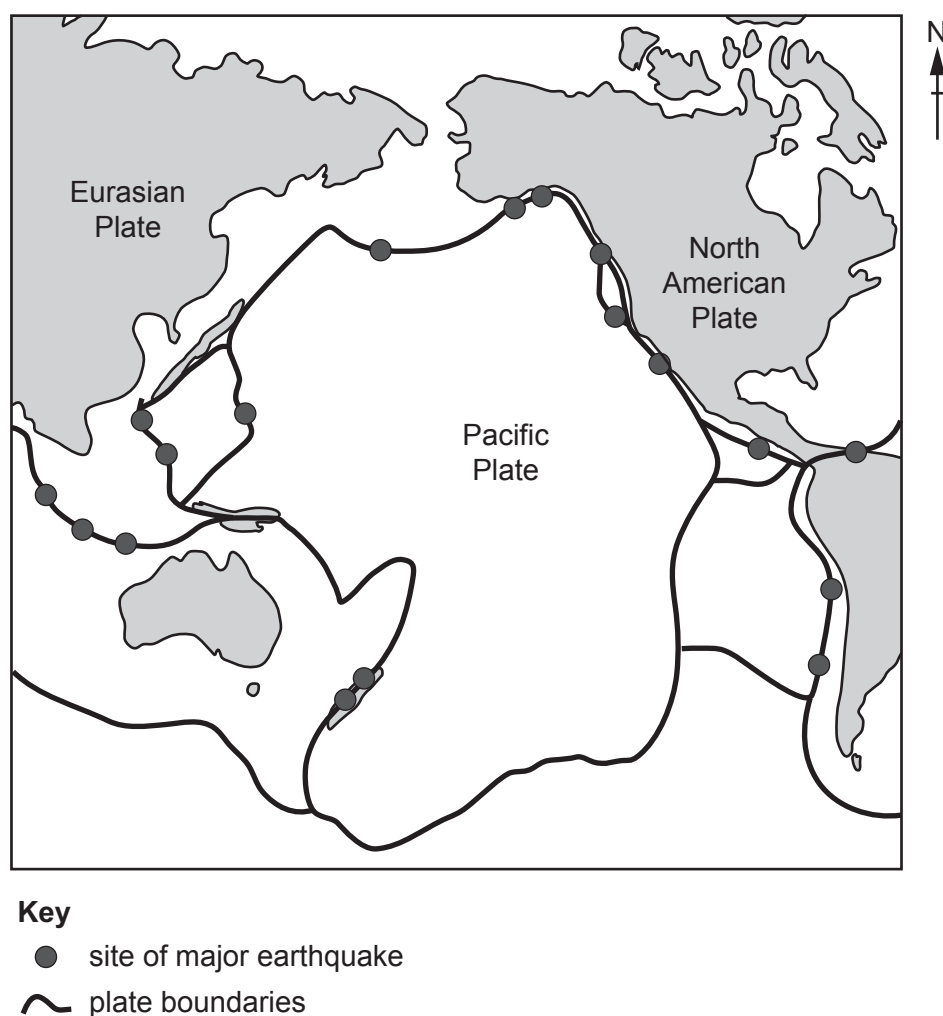


Fig. 1.2

- (i) Describe and explain the distribution of major earthquakes shown in Fig. 1.2.

..... [4

- (ii) Suggest **two** reasons why people choose to live close to the Pacific Plate boundary despite the risks involved.

.....

.....

.....

..... [2]

- (iii) Discuss the strategies used to reduce the scale of damage and loss of life which can be caused by living close to a plate boundary.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

[Total: 20]

- 2 (a) Describe the difference between *renewable* and *non-renewable* resources.

.....

.....

.....

..... [1]

- (b) Wind energy is an alternative energy resource.

Suggest three reasons why a wind energy farm would **not** be built.

1.

.....

2.

.....

3.

..... [3]

- (c) Fig. 2.1 shows the predicted range of carbon dioxide emissions during the production of electricity using different resources for one year.

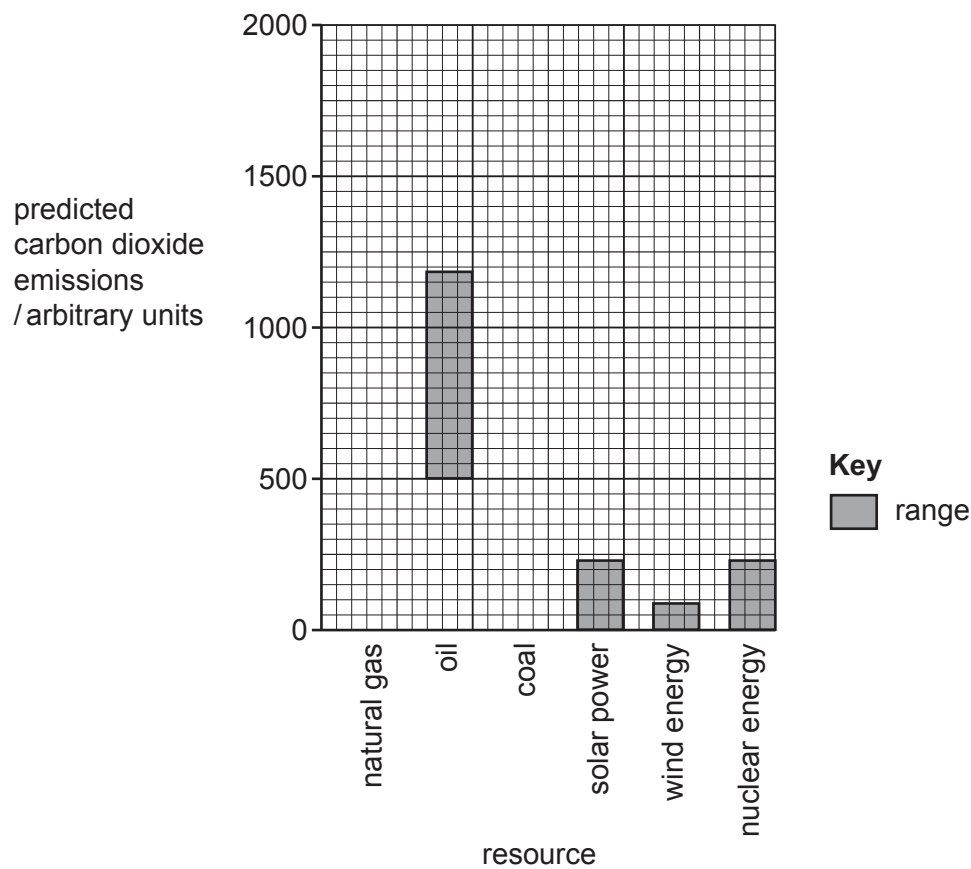


Fig. 2.1

- (i) Complete Fig. 2.1 by using data from Table 2.1 to show the predicted range of carbon dioxide emissions during the production of electricity using:
- coal
 - natural gas.

Table 2.1

	minimum carbon dioxide emissions / arbitrary units	maximum carbon dioxide emissions / arbitrary units
natural gas	300	950
oil		
coal	700	1700
solar power	0	225
wind energy	0	75
nuclear energy	0	225

[2]

- (ii) Calculate the range in predicted carbon dioxide emissions when oil is used to produce electricity.

..... arbitrary units [1]

- (iii) Suggest **two** reasons for the wide range in predicted carbon dioxide emissions for producing electricity using coal.

.....

 [2]

- (iv) Biofuels are fuels which can be derived directly from plants.

Suggest why biofuels are **not** considered to significantly contribute to the overall concentration of carbon dioxide in the atmosphere.

.....

 [2]

- (v) Explain how the enhanced greenhouse effect leads to increased global temperatures.

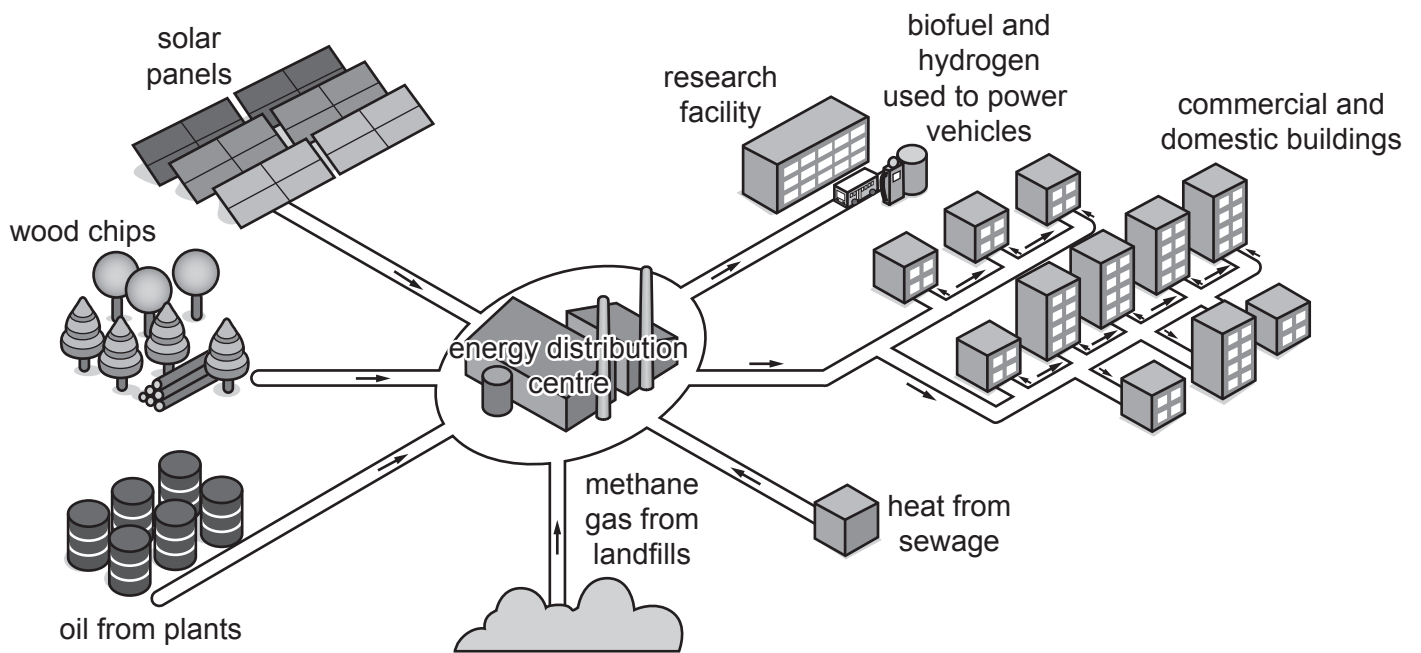
.....

 [4]

- (vi) Describe **one** consequence of increased global temperatures.

.....
 [1]

- (d) Fig. 2.2 is a plan of a renewable energy scheme that supplies commercial and domestic buildings.



Key

→ direction of energy transfer

Fig. 2.2

Describe how the scheme in Fig. 2.2 aims to manage atmospheric pollution on a local scale.

.....

.....

.....

.....

.....

.....

.....

.....

..... [4]

[Total: 20]

Section B

Answer **one** question from this section.

Write your answers on the separate answer paper provided.

- 3 Fig. 3.1 shows the global urban population and global rural population from 1950 to 2030 (predicted).

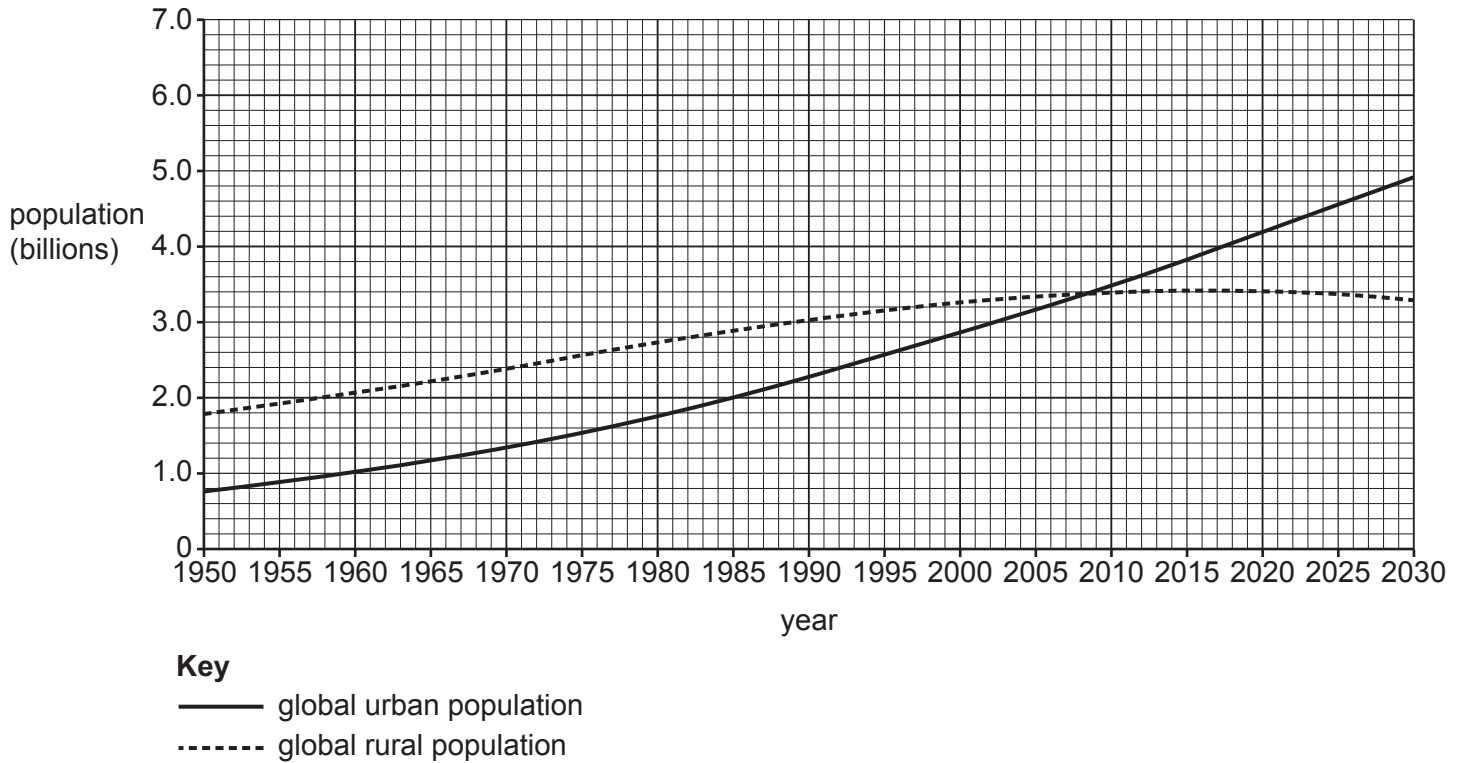


Fig. 3.1

- (a) Describe the challenges associated with the change in global urban population shown in Fig. 3.1. [10]
- (b) 'By creating conservation areas and National Parks, land is protected from the challenges of an increasing urban population.'

Discuss the extent to which you agree with this statement.

[30]

[Total: 40]

- 4 Fig. 4.1 is a plan of a house designed for locations at risk from tropical cyclones (hurricanes).

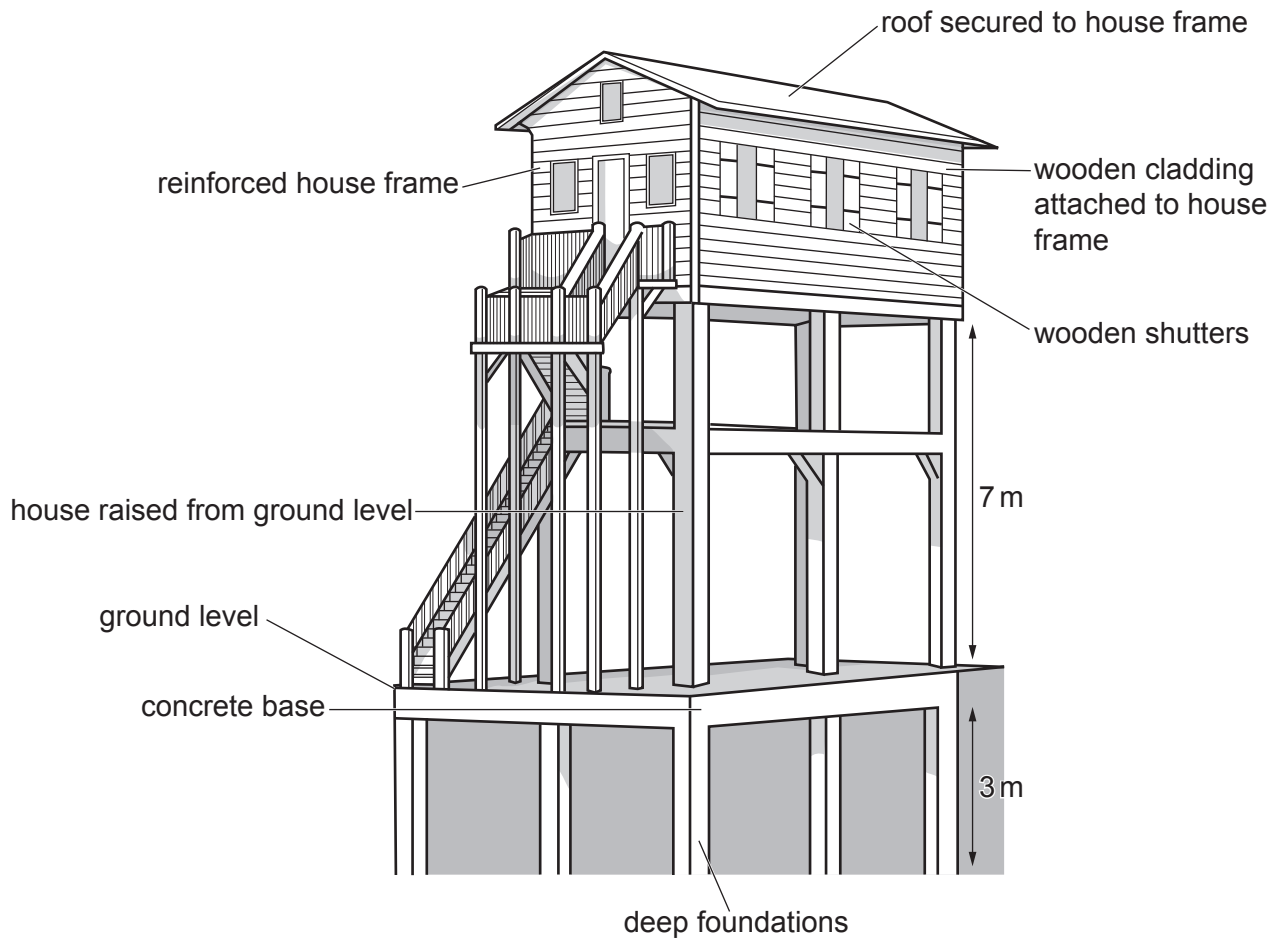


Fig. 4.1

- (a) Describe the effects a tropical cyclone has on an area and explain how the house design shown in Fig. 4.1 may help to manage the effects of tropical cyclones. [10]
- (b) Compare the impacts of a widespread drought on countries of contrasting levels of economic development. [30]

[Total: 40]

- 5 Fig. 5.1 shows a range of natural factors which influence mass movement processes.

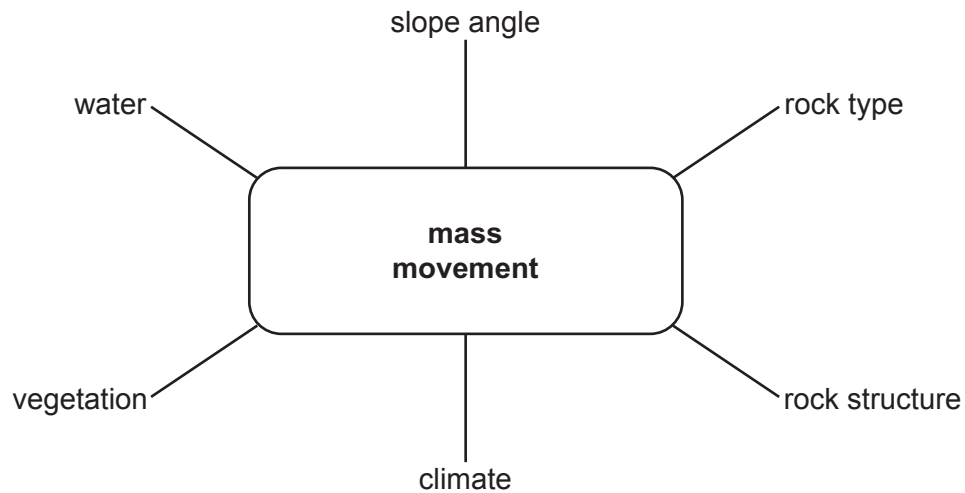


Fig. 5.1

- (a) Describe how **three** of the factors shown in Fig. 5.1 would influence the risk of mass movement processes. [10]
- (b) 'Large-scale farms could learn from small-scale farms when aiming to manage soil in a sustainable way.'

Using examples, discuss the extent to which you agree with this statement. [30]

[Total: 40]

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of the Cambridge Assessment Group. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which itself is a department of the University of Cambridge.