

Please write clearly in block capitals.
Centre number Candidate number
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Candidate signature I declare this is my own work.

A-level **GEOGRAPHY**

Paper 1 Physical Geography

Time allowed: 2 hours 30 minutes

Materials

For this paper you must have:

- the colour insert (enclosed)
- a pencil
- a rubber
- a ruler.

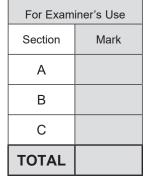
You may use a calculator.

Instructions

- Use black ink or black ball-point pen.
- Fill in the boxes at the top of this page.
- Answer **all** questions in Section A.
- Answer either Question 2 or Question 3 or Question 4 in Section B.
- Answer either Question 5 or Question 6 in Section C.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- If you need additional extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The total number of marks available for this paper is 120.





Section A

Water and carbon cycles

Answer all questions in this section.

Explain the concept of negative feedback within the carbon cycle.	[4 marks]
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	Explain the concept of negative feedback within the carbon cycle. Extra space



	Figure 1 is in the insert.	
	Figure 1 shows changes in the terrestrial water system in response to hur activity and climate change between 2012 and 2016.	man
0 1.2	Analyse the changes in the terrestrial water system shown in Figure 1 .	[6 marks]
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	Question 1 continues on the next page	



	Figure 2 is in the insert.
	Figure 2 shows regional changes in forest cover between 1990 and 2010.
0 1.3	Using Figure 2 and your own knowledge, assess the challenges arising out of the changing forest cover.
	[6 marks]
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0 1.4	'Human activity needs to focus more on adapting to the expected negative in of climate change than on taking measures to restore atmospheric carbon to pre-industrial levels.'	npacts
	How far do you agree with this view? [20	marks]





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End of Section A
Turn over for Section B



Section B

guestion in this section

	Answer one question in this section.	
	Answer either Question 2 or Question 3 or Question 4.	
Question 2	Hot desert systems and landscapes	
0 2 - 1	Outline the sources of water in deserts.	[4 marks]
	Extra space	



	Figures 3a and 3b are in the insert.
	Figure 3a shows annual mean temperatures in Australia in 2018 compared to historical temperature observations.
	Figure 3b shows annual rainfall in Australia in 2018 compared to historical rainfall observations.
0 2 . 2	Analyse the extent of the relationships shown in Figure 3a and Figure 3b. [6 marks]
	Extra space
	Question 2 continues on the next page



Figure 4 shows a landscape feature in the White Desert in western Egypt.





Note: The White Desert extends over 300 km^2 of the Egyptian Sahara Desert. Sedimentary rocks formed from oceanic deposition in an earlier geological era are now subject to hot desert conditions. Features such as those illustrated protrude above the landscape to give the White Desert its distinctive character. Mushroom-shaped formations can be as high as 4.5 metres.

0 2 . 3	of this landscape.
	[6 marks]



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0 2 . 4	How far can an understanding of systems in physical geography help to mitigate
	against the expansion of deserts into semi-arid areas?
	[20 marks]





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End of Question 2





Question 3	Coastal systems and landscapes	
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0 3 . 1	Outline factors leading to the formation of fjords.	
	[4 ma	ırks]
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	Figures 5a and 5b are in the insert.
	Figure 5a shows geographical variation in the 1992–2014 global sea level change using satellite data.
	Figure 5b shows geographical variation in the 1992–2019 global sea level change using another source of satellite data.
0 3.2	Using only Figures 5a and 5b , evaluate the relative usefulness of these sources in demonstrating eustatic sea level change.
	[6 marks]
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	Question 3 continues on the next page



Figure 6 is a photograph of part of the Mersey Estuary at Runcorn, Cheshire in 2019.

Figure 6



Note: Runcorn lies about 25 kilometres from the sea on the south bank of the tidal estuary of the River Mersey where the tidal range can be as high as 9 metres. This particular photograph was taken at low tide looking towards the north bank of the estuary. The River Mersey ends its approximately 110 km course in this tidal estuary.

0 3 . 3	most important factor in the development of this landscape.			
		[6 marks]		



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	Extra Space
0 3 . 4	With reference to a coastal landscape from beyond the UK, assess the role of
	human intervention in shaping the physical environment.
	[20 marks]







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End of Question 3



Question 4	Glacial systems and landscapes	
นูนชอนบท 4	Giaciai systems and ianuscapes	
0 4 . 1	Outline processes leading to the formation of kames.	
0 4 . 1	Outline processes leading to the formation of kames.	[4 marks]
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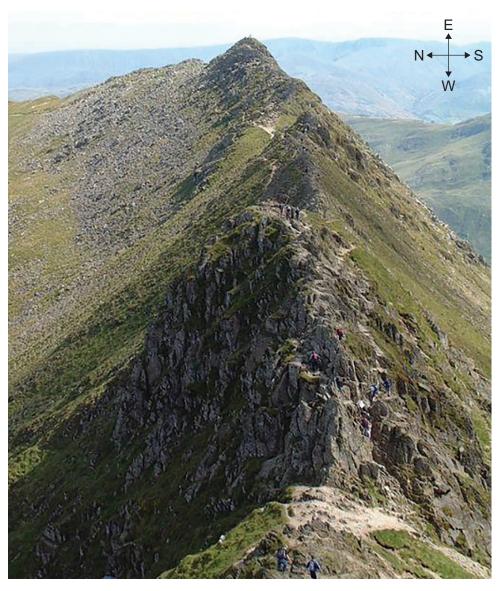


	Figures 7a and 7b are in the insert.
	Figure 7a shows the distribution, size and type of selected Himalayan glaciers.
	Figure 7b shows the change in mass balance of the selected glaciers between 2000 and 2016.
0 4.2	Analyse the data shown in Figures 7a and 7b . [6 marks]
	[e mane]
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	Question 4 continues on the next page



Figure 8 shows a glacial landscape feature, Striding Edge, in the Lake District National Park, England.





Note: Striding Edge runs for several kilometres from Helvellyn Peak (950 metres) in the west towards Ullswater in the east. To the north is Red Tarn, a large corrie lake. The predominant rock type is igneous and dates back to a period of vulcanicity around 450 million years ago.

0 4 . 3	Using Figure 8 and your own knowledge, assess the role of erosion in the development of this landscape feature.	[6 marks]



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	Question 4 continues on the next page



0 4 . 4	'Human activity is having a devastating impact upon cold environments veridence of a sustainable future emerging.'	vith little
	To what extent do you agree with this view?	[20 marks]



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End of Question 4
End of Section B



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Section C

Answer one question in this section.

Answer either Question 5 or Question 6.

Question 5	Hazards	
0 5.1	Outline factors which lead to the formation of mudflows, a volcanic hazard.	4 marks]
		+ marksj
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Question 5 continues on the next page



	Figure 9 is in the insert.	
	Figure 9 shows responses by some companies and individuals to the Haiti earthquake, 2010.	
0 5 . 2	Analyse the data shown in Figure 9 .	
	[6 ma	arks]
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	Figures 10a, 10b and 10c are in the insert.
	Figures 10a , 10b and 10c show data related to coastal flooding risk in Louisiana, USA, based upon a 2017 master plan. The information is based upon a 1 in 100 year extreme flood event.
0 5.3	Using Figures 10a , 10b , 10c and your own knowledge, assess the challenges in managing flood risk associated with tropical storms in Louisiana.
	[9 marks]
	Extra space





0 5 - 4	Assess the usefulness of prediction in the management of wildfire.	[9 marks]
		[5 marks]



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0 5.5	'Seismic hazards will always be harder to manage than volcanic hazards due to their unpredictability and scale.' To what extent do you agree with this view?
	[20 marks]







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End of Question 5



Question 6	Ecosystems under stress	
0 6 . 1	Outline the concept of climatic climax in vegetation succession.	[4 marks]
	Extra space	



	Figure 11a and Figure 11b are in the insert.
	Figure 11a shows the cause of deforestation in equatorial west Africa, 2000–2014.
	Figure 11b shows national estimates of forest loss by area and cause in equatorial west Africa, 2000–2014.
0 6 . 2	Analyse the data shown in Figure 11a and Figure 11b. [6 marks]
	[o marks]
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	Question 6 continues on the next page





	Figure 12 is in the insert.
	Figure 12 shows a range of issues facing game parks and reserves in Kenya, east Africa.
0 6 . 3	Using Figure 12 and your own knowledge, assess the implications of this data for sustainability in areas of savanna grassland in east Africa.
	[9 marks]
	Extra space



		
0 6.4	Analyse the interconnections between climate, vegetation and soils in the development of temperate deciduous woodland.	[9 marks]
		[9 marks]





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0 6 . 5	With reference to an ecosystem at a local scale, evaluate the extent to which management has created a viable future for the area. [20 marks]

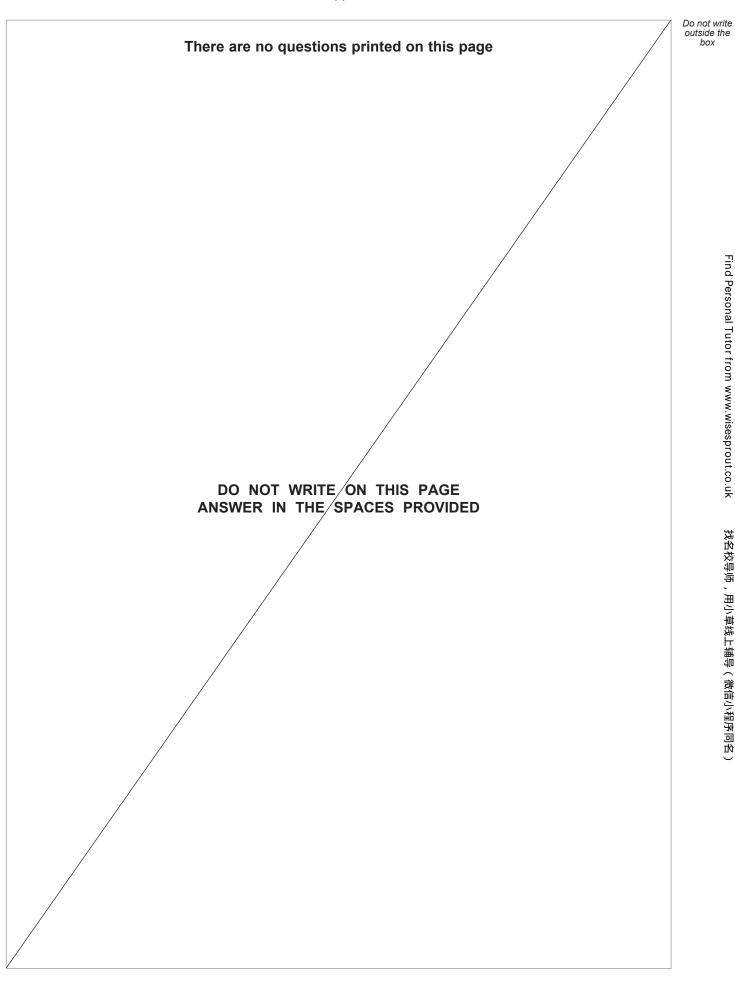






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END OF QUESTIONS	







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