Surname			Centre Number	Candidate Number
First name(s)				0
	GCSE			
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	TUESDAY, 17 NO	OVEMBER 2020 – MO	ORNING	
	GEOGRAPHY	B – Component 2	2	

Problem Solving Geography

1 hour 30 minutes

For Examiner's use only					
	Maximum Mark	Mark Awarded			
Part A	35				
Part B	25				
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

Answer **all** of the questions in this examination.

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

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

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 lined 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.



Examiner

[1]

[2]

Growing cites in High Income Countries (HICs) need to plan for the future to ensure that they have a sustainable water supply. This is proving to be a challenge.

Some cities experience a Mediterranean type climate (warm wet winters, hot dry summers). Summer is usually a time when demand for water is greater than the supply. In recent years climate change has created even greater challenges. Average temperatures have increased, whilst rainfall amounts have become unreliable.

Part A:	provides information	about the	causes	and	effects	of	water	shortages	in	the
	Mediterranean climat	e zone.						35	ma	irks

- Part B:provides information about four strategies (ways) that cities have used to reduce
the threat of water shortages.25 marks
- Part C: asks you to choose two of the strategies that you think would work well together, to help the city of Valencia (Spain) avoid water shortages in the future. 16 marks

Part A – The causes and effects of water shortages in cities in the Mediterranean climate zone.

You are advised to spend about **35 minutes** on this part.

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

Identify two features that all four locations have in common. Use map evidence only. [2]

- 1: ______2: _____
- (b) Study **Figures 2** and **3** on **page 3** of the Resource Folder.
 - (i) San Diego (**Figure 2**) records its lowest rainfall figure and its highest temperature in August.

Identify the month that this pattern occurs in Perth (Figure 3).

(ii) Explain why latitude has an impact on temperature.



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	(iii)	Calculate the range of temperature for San Diego.	, ,
			.1
		The range of temperature for San Diego is:°C	
~)	The	Mediterranean climate, in San Diego, creates a number of challenges for people and	d
•)	the e	environment. Use Figure 2 .	
	(i)	Suggest one challenge for people. [3	8]
		One challenge for people would be:	
	••••••		
	•••••		
	••••••		
	 (ii)	Suggest one challenge for the environment. [3	
	()	One challenge for the environment would be:	1
	•••••		
	•••••		



		Population (in millions)			
	City	1979	2019	% increase in 40 years	_
;	San Diego	1.5	1.9	26.67%	
	Perth	1.6	2.1	31.25%	
	Valencia	1.4	1.7		_
ow you	ir working her	e:			
ow you	ir working her	e:			
ow you	The perce	e: ntage (%) incre	ease for Valenc	cia was	%
ow you (ii)	The perce A geography each city as	e: ntage (%) incre student decide proportional cir	ease for Valence es to represer rcles.	cia was nt the 1979 and 2019 populati	% ion data fo
ow you (ii)	The perce A geography each city as Suggest one	e: ntage (%) incre student decid proportional cir advantage and	ease for Valence es to represer rcles. d one disadva	cia was Int the 1979 and 2019 populati Intage of using this graphical t	ion data fo echnique.
ow you (ii)	The perce A geography each city as Suggest one Advantage:	e: ntage (%) incre student decid proportional cir advantage and	ease for Valend es to represer rcles. d one disadva	cia was ht the 1979 and 2019 populati intage of using this graphical t	ion data fo echnique. [2

(e)	Much	h of the growth of the three cities can be explained by migration.		Examiner only
	(i)	Describe what effects migration has had on a city in a HIC.	[4]	
		The HIC city I studied was:		
	·····			
	······			
	(ii)	Explain one push factor that causes people to migrate to cities in HICs.	[2]	
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ocial	EN – environmental EC – economic SO – se
EN or EC or SO	Issues related to water shortages
	we abstract (take) too much water from underground stores aquifers), surface rivers can dry up and ecosystems suffer.
	he cost of providing fresh water can be very high, so water bills or industry are constantly rising, which means lower profits for ompanies.
	eighbourhood arguments break out when some households nore appeals to save water and continue to water their gardens nd wash their cars.
	ome farmers have abandoned the idea of growing highly rofitable crops that need lots of water. These farmers earn less noney.
	he look of the city is changing. There is less greenery. Grassed reas and borders planted with flowers are being removed in an ttempt to save water.
	urning sea water into fresh water (desalination) can damage oastal ecosystems reducing biodiversity.



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(g) In recent years the water authorities in cities like San Diego and Perth have warned people that the situation is serious.



When water demand exceeds supply we can't continue to ignore the problem. It's just not sustainable.

The situation has been made worse in recent years as droughts have become more frequent.

The comment refers to **sustainability** and **drought**. Tick (\checkmark) the two boxes that best gives an accurate meaning for each term. [2]

Sustainable means using a resource:	Tick (✓) the correct box
when it is needed, without worrying about the future.	
carefully, so that the cost remains low for all to afford.	
wisely, so that it is not depleted or permanently damaged.	

Drought means:	Tick (✓) the correct box
a time when people use up all of the available water.	
a period of short, heavy rainfall.	
a prolonged period when expected rains do not fall.	



		Examiner only
(h)	Transferring water between countries can be used to solve water shortages.	
	Describe two challenges of managing water in this way. [4	1]
	Challenge 1	
.		
••••••	Challenge 2	
·····		
	End of Part A	



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		Examiner
Par	rt B – Four strategies (ways) that cities have used to reduce the threat of water shortages.	only
	You are advised to spend about 35 minutes on this part.	
In th used featu	is part you will be introduced to four strategies that cities like San Diego and Perth have I to manage their water supplies more effectively. Each strategy has positive and negative ures.	
	Strategy 1 – Using underground water stores (aquifers).	
(a)	Study the information on page 4 of the Resource Folder.	
	(i) Explain why climate influences stores and flows of water. [4]	
		0112U201
	(ii) If the wells used by farmers dry up, their profits will fall. Suggest one reason why. [2]	



<i>(</i> b)	Stud	v the information on page 5 of the Resource Folder.
~)	Des	alination plants remove salt from the water. They burn large amounts of fossil fuels
	0030	
	(1)	Explain why environmentalists are against the use of fossil fuels. [3
	.	
	(ii)	Desalination plants are rarely found in LICs (low income countries) and NICs (newly industrialised countries). They may seek help from MNCs (multi-national companies) to develop such infrastructure.
		Give one reason to explain why these countries might need investment from MNCs [3
	•••••	
	••••••	

Examiner only

Strategy 3 – Persuading people to use less water.

(c) Study the information on **page 6** of the Resource Folder.

The table below shows how people living in different cities feel about three strategies used to overcome water shortages.

Using groundwater is the best option	Using desalination is the best option	Passing strict new laws is the best option	_
50%	%	10%	
45%	45%	10%	
85%	10%	5%	
omplete the table by addin	g the % figure for desalir	nation use in Perth.	[1
lusion:			
uggest one reason why th ay to reduce water use.	ne introduction of strict ne	ew laws can be an unpop	oula [2
	Image: the best option 50% 45% 85% omplete the table by addin hat conclusions can you relusion: clusion: uggest one reason why the ay to reduce water use.	The best option The best option 50%	The best option The best option Taws is the best option 50%



			Exami
	Stra	tegy 4 – Stopping the future growth of 'thirsty' industries.	only
(d)	Stud	ly the information on page 7 of the Resource Folder.	
	Gro req	wing crops, such as almonds and avocados, and mining for rocks, such as bauxite, uire a huge quantity of water. These processes have a large water footprint.	
	(i)	What is a water footprint?	[2]
	 (ii)	When MNCs are prevented from expanding in an area, they are likely to move other locations.	to
		Explain why social problems can occur in areas that lose major employers.	[4]
	•••••		
	••••••		
]

	Examine
(e) The city of Valencia in Spain is facing a difficult decision about its water supply . The city has many of the same challenges as San Diego and Perth.	only /
 the population is increasing 	
 the Mediterranean climate has natural periods when water supply is short 	
 the city has a growing tourist industry 	
With climate change the warm temperatures often last well into the autumn and the low rainfall figures make it a more attractive destination for tourists. The problem is the city is already facing some water shortages. I'm not sure what decisions will be reached about how we deal with this.	
Suggest why the tourist industry has a large water footprint. [2	
End of Part B	
	-





15

•					
I have chosen this	combination and	d not other co	mbinations bec	ause:	



16	
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	••••••
	,



	Examiner
Additional space for Part C only:	only
End of Part C	
END OF PAPER	

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