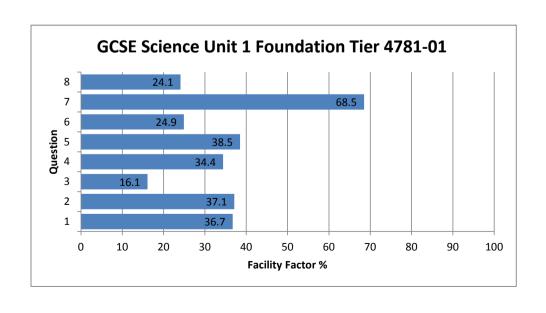


WJEC 2014 Online Exam Review

GCSE Science Unit 1 Foundation Tier 4781-01

All Candidates' performance across questions

?	?	?	?	?	?	?	
Question Title	N	Mean	SD	Max Mark	F F	Attempt %	
1	428	2.6	1.1	7	36.7	99.8	
2	423	2.2	1.4	6	37.1	98.6	
3	419	0.6	0.7	4	16.1	97.7	
4	421	2.4	1.9	7	34.4	98.1	
5	427	3.9	1.7	10	38.5	99.5	\leftarrow
6	423	2	1.7	8	24.9	98.6	\leftarrow
7	428	2.7	1	4	68.5	99.8	
8	423	5.8	4	24	24.1	98.6	\leftarrow



ice cap

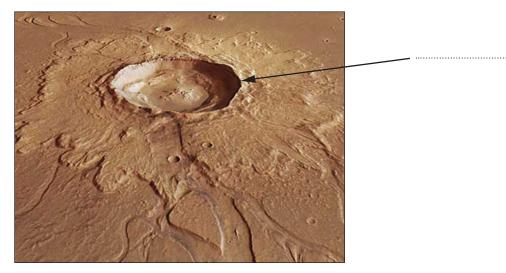
5. The photographs below show different features on Mars.

volcano

(a) Use words from the list below to complete the labels.

[2]

Photograph 1

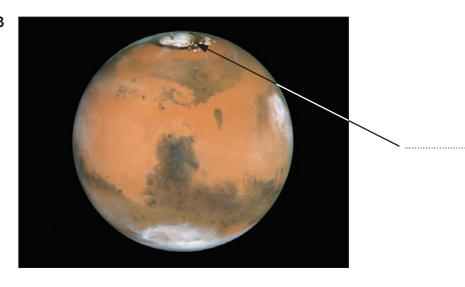


crater

Photograph 2



Photograph 3



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(4781-01)

(b)	(i)	Name the substance that flows from a volcano when it erupts.	
			[1]
	(ii)	What does the presence of a volcano suggest about the early core of Mars?	[1]
	(iii)	It has been suggested that the surface of Mars may be made from tectonic pla Give one reason how the presence of volcanoes supports this idea.	ates. [1]
(c)	Ther	e are many more craters on the surface of Mars than on the surface of Earth.	
	(i)	How were these craters formed?	[1]
	(ii)	Give one reason why this suggests there is a 'thinner' atmosphere on Mars.	[1]
(d)	(i)	Only frozen water has been found on Mars, for example, at the ice cap. What of this tell us about the climate on Mars?	does [1]
	(ii)	Carbon dioxide makes up 95% of the atmosphere on Mars. Explain how you would expect this to affect Mars' climate.	[2]

- 5. The photographs below show different features on Mars.
 - (a) Use words from the list below to complete the labels.

[2]

volcano

ice cap

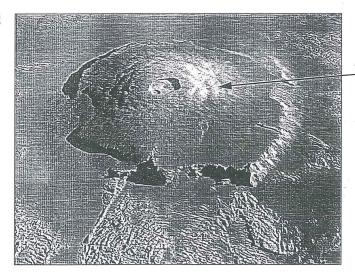
crater

Photograph 1



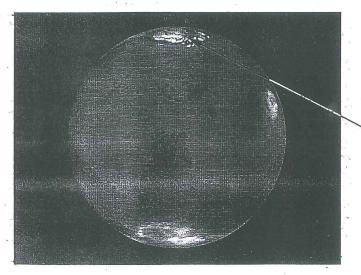
crafer

Photograph 2



vol cano

Photograph 3



ile cap

(b)	(i)	Name the substance that flows from a volcano when it erupts.
		Liwar 1
	(ii)	What does the presence of a volcano suggest about the early core of Mars? [1]
		Assert of Program to the Torfeth It also might
		meen the there are technic Plates.
	(iii)	It has been suggested that the surface of Mars may be made from tectonic plates. Give one reason how the presence of volcanoes supports this idea. [1]
		Because Semetimus when tectoric Prante history the form a lover
(c)	Ther	re are many more craters on the surface of Mars than on the surface of Earth.
	(i)	How were these craters formed? [1]
		astoroids hit mass.
	(ii)	Give one reason why this suggests there is a 'thinner' atmosphere on Mars. [1]
		because the association got to the harpers
		Faster with Get sacked in by growing and it sens morning
(d)	(i)	Only frozen water has been found on Mars, for example, at the ice cap. What does this tell us about the climate on Mars? [1]
		It is cold.
	14	
	(ii)	Carbon dioxide makes up 95% of the atmosphere on Mars.
		Explain how you would expect this to affect Mars' climate. [2]
		It should trap in more heat margine mass
		very hot.
		vers hot.

- 5. The photographs below show different features on Mars.
 - (a) Use words from the list below to complete the labels.

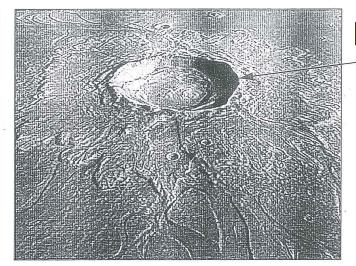
[2]

volcano

ice cap

crater

Photograph 1



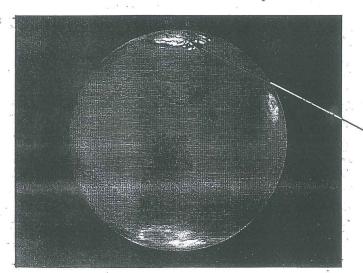
crafer

Photograph 2



vol cano

Photograph 3



ile cap

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(4781-01)

(ii) Name the substance that flows from a volcano when it erupts. What does the presence of a volcano suggest about the early core of Mars? [1] What does the presence of a volcano suggest about the early core of Mars? [1] What does the presence of a volcano suggest about the early core of Mars? [1] What does the presence of a volcano suggest about the early core of Mars? [1] What does the presence of a volcano suggest about the early core of Mars? [1] What does the presence of a volcano suggest about the early core of Mars? [1] Because Senethus when the surface of Mars may be made from tectonic plates. [1] Because Senethus when the form a volcano suggest ship of the form a volcano suggest s	1
(iii) It has been suggested that the surface of Mars may be made from tectonic plates. Give one reason how the presence of volcanoes supports this idea. [1] **Becasse Sending Water Felling Plates have the Germa water from the surface of Mars than on the surface of Earth. (i) How were these craters formed? [1] **Giproids** hit **PMS** (ii) Give one reason why this suggests there is a 'thinner' atmosphere on Mars. [1] **Leasse Har associated In by growing and it get manual* (d) (i) Only frozen water has been found on Mars, for example, at the ice cap. What does this tell us about the climate on Mars? [1]	
(iii) It has been suggested that the surface of Mars may be made from tectonic plates. Give one reason how the presence of volcanoes supports this idea. [1] Becaste Senethas wan technic places have the form a local place. [1] Becaste Senethas wan technic place have the form a local place of Mars than on the surface of Earth. (i) How were these craters formed? [1] Asproids hit mas [1] Give one reason why this suggests there is a 'thinner' atmosphere on Mars. [1] becaste the accordance place to the form a local place p	
(iii) It has been suggested that the surface of Mars may be made from tectonic plates. Give one reason how the presence of volcanoes supports this idea. [1] Becasse Senektins with Helping Plants his idea. [1] Becasse Senektins with Helping Pl	0
Give one reason how the presence of volcanoes supports this idea. [1] Becasse Semethas Wan Helping Proved history of the form a way of t	
(i) How were these craters formed? (ii) Give one reason why this suggests there is a 'thinner' atmosphere on Mars. [1] because Mars accorded gas for the faster with Get Sacred In by gravity and it gas remains (ii) Only frozen water has been found on Mars, for example, at the ice cap. What does this tell us about the climate on Mars? [1]	. 1
(ii) How were these craters formed? (iii) Give one reason why this suggests there is a 'thinner' atmosphere on Mars. [1] because the associated in by growing and it sets mounts (d) (i) Only frozen water has been found on Mars, for example, at the ice cap. What does this tell us about the climate on Mars? [1] [1]	
(ii) Give one reason why this suggests there is a 'thinner' atmosphere on Mars. [1] because He accorded has be the purpose of the property and it sets that the ice cap. What does this tell us about the climate on Mars? [1] If is coul.	
(ii) Give one reason why this suggests there is a 'thinner' atmosphere on Mars. [1] because May actorised to the parties of the few manual of the control o	1
because the associated in by ground and it see morning (d) (i) Only frozen water has been found on Mars, for example, at the ice cap. What does this tell us about the climate on Mars? [1] [1]	1
(d) (i) Only frozen water has been found on Mars, for example, at the ice cap. What does this tell us about the climate on Mars? [1]	0
(d) (i) Only frozen water has been found on Mars, for example, at the ice cap. What does this tell us about the climate on Mars? [1]	
this tell us about the climate on Mars? [1]	
It is cold.	
	* 1
(ii) Carbon dioxide makes up 95% of the atmosphere on Mars. Explain how you would expect this to affect Mars' climate. [2]	
It should trap in more heat making mars	. 1
vers bot	
	7
	10

[2]

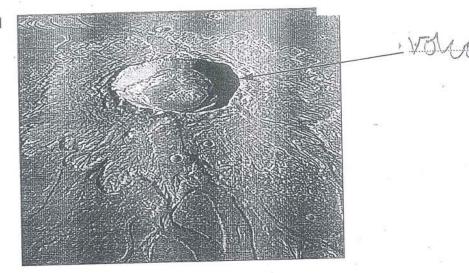
- 5. The photographs below show different features on Mars.
 - (a) Use words from the list below to complete the labels.

volcano

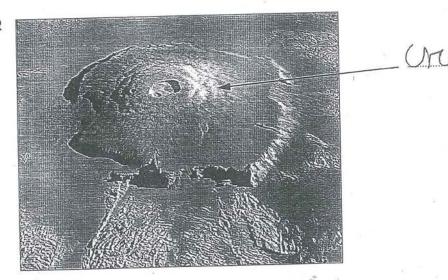
ice cap

crater

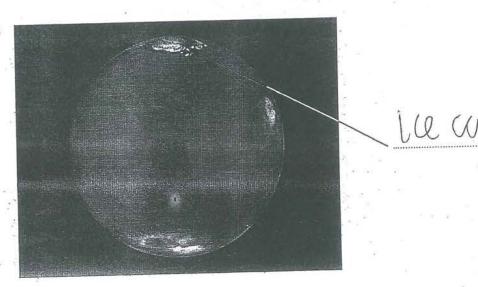
Photograph 1



Photograph 2



Photograph 3



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(b)	(1)	Name the substance that flows from a volcano when it erupts.	[1]
	(ii)	What does the presence of a volcano suggest about the early core of Mars?	[1]
	(iii)	It has been suggested that the surface of Mars may be made from tectonic pla Give one reason how the presence of volcanoes supports this idea.	tes. [1]
· /-\	Thor	TO THE CHART BY THE MONTH THE ARE MANUAL PLANTS THE ARE MANY MORE CRATERS ON THE SURFACE OF MARS than on the Surface of Earth.	nt.
(c)	160		[1]
	(i)	How were these craters formed? MUTUL MUSUAL MUSUA MUSUA MUSUAL MUSUAL MUSUAL M	
	(ii)	Give one reason why this suggests there is a 'thinner' atmosphere on Mars.	[1]
		Become there is no heart to be thropped in because of the	2
(d)	(i)	The temperature. Only frozen water has been found on Mars, for example, at the ice cap. What dethis tell us about the climate on Mars?	
	(ii) ⁶	Carbon dioxide makes up 95% of the atmosphere on Mars. Explain how you would expect this to affect Mars' climate. blumble Combine Attack and the things when the combine are the combined and the combined are the comb	[2]

5. The photographs below show different features on Mars.

(a) Use words from the list below to complete the labels.

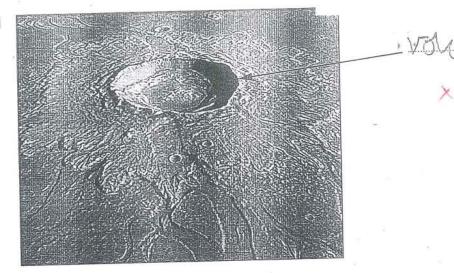
[2]

volcano

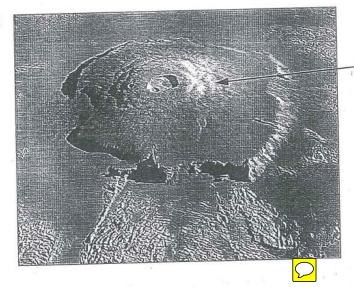
ice cap

crater

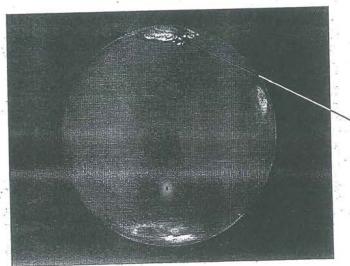
Photograph 1



Photograph 2



Photograph 3



ile com

(b)	(i)	Name the substance that flows from a volcano when it erupts.	only
		Lava [1] 1
	(ii)	What does the presence of a volcano suggest about the early core of Mars? [1	1
(c)	(iii)	It has been suggested that the surface of Mars may be made from tectonic plates Give one reason how the presence of volcanoes supports this idea. [1] [1] [2] [3] [4] [5] [6] [6] [7] [7] [8] [9] [9] [9] [9] [9] [9] [9	o (i.)
	(i)	How were these craters formed? [1] o
	(ii)	Give one reason why this suggests there is a 'thinner' atmosphere on Mars. 1 Because there is no heart to be through in because of the atmosphere the lawy has hundered houselike of the temperature.	o
(d)	(i)	Only frozen water has been found on Mars, for example, at the ice cap. What doe this tell us about the climate on Mars?	1
	(ii)	Carbon dioxide makes up 95% of the atmosphere on Mars. Explain how you would expect this to affect Mars' climate. [2] Line Common August 4555 Line Common August 4555 Line Common August 4555 [2]	1
			5
			10

Examiner

5. The photographs below show different features on Mars.

(a) Use words from the list below to complete the labels

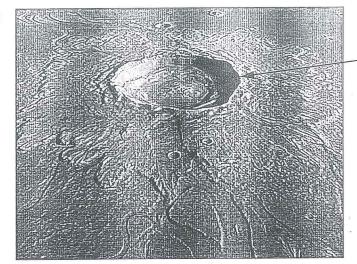
[2]

volcano

ice cap

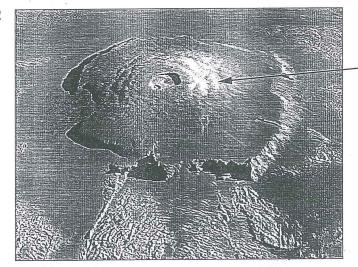
crater

Photograph 1



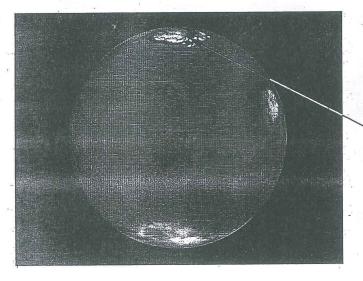
crotter

Photograph 2



Volcano

Photograph 3



Ice cap

(b)	(i)	Name the substance that flows from a volcano when it erupts.	[1]
Pa	(ii)	What does the presence of a volcano suggest about the early core of Mars? IF USECL TO NOT MARK US MUCH CO 2 In The CUIT	[1]
	(iii)	It has been suggested that the surface of Mars may be made from tectonic place one reason how the presence of volcanoes supports this idea. When techtonic places move it couses volcanoes.	[1]
(c)	Ther	re are many more craters on the surface of Mars than on the surface of Earth.	
	(i)	How were these craters formed? ASTROICS.	[1]
	(ii)	Give one reason why this suggests there is a 'thinner' atmosphere on Mars. When the control of	[1]
(d)	(i)	Only frozen water has been found on Mars, for example, at the ice cap. What of this tell us about the climate on Mars?	loes [1]
g*	(ii)	Carbon dioxide makes up 95% of the atmosphere on Mars. Explain how you would expect this to affect Mars' climate. Nothing can grow or live because most of it is Carbon dioxide.	[2]
	X		10

Examiner only

2

5. The photographs below show different features on Mars.

(a) Use words from the list below to complete the labels

[2]

volcano

ice cap

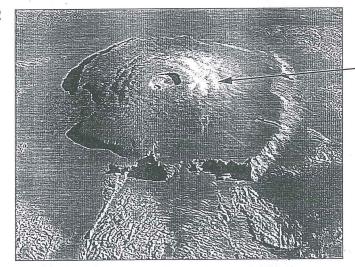
crater

Photograph 1



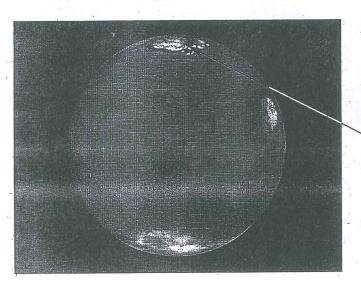
crotter

Photograph 2



Volcano

Photograph 3



ice cap

		w .		Examiner
(b)	(i)	Name the substance that flows from a volcano when it erupts.		only
		ICIVA	[1]	1
	(ii)	What does the presence of a volcano suggest about the early core of Mars?	[1]	0
The contract of		It used to not use as		
7		much. Co2 in. the cur		6
	(iii)	It has been suggested that the surface of Mars may be made from tectonic plate. Give one reason how the presence of volcanoes supports this idea.	es. [1]	* * 1
		When techtonic plates move it causes volca	00	
(c)	Ther	re are many more craters on the surface of Mars than on the surface of Earth.		
	(i)	How were these craters formed?	[1]	1
		Astroids. D		. 1
	(ii)	Give one reason why this suggests there is a 'thinner' atmosphere on Mars.	[1]	0
		The Mana Us very ciry		
		100 per tuncal gent anough.		
(d)	(i)	Only frozen water has been found on Mars, for example, at the ice cap. What do this tell us about the climate on Mars?	oes [1]	, and
		11-18 COID		1
	(ii)	Carbon dioxide makes up 95% of the atmosphere on Mars.		
y	(11)	Explain how you would expect this to affect Mars' climate.	[2]	. 0
		nothing can grow or live		7
		because most of it is		
		Carbon dioxide.		
	×			5
				10
	-			

(a)	Expl	ain why the supply of wood chips is renewable.
(b)	(i)	Name one gas given out when wood chips are burned.
	(ii)	Name the gas used by trees during photosynthesis.
	(iii)	Give one reason why using wood chips as a fuel is carbon neutral.
(c)	The The House	ne coal power stations have been converted to run on wood chips. y also act as combined heat and power (CHP) stations. se make use of the heat in water to provide central heating for the power station ses nearby. CHP station receives 500 MW of power from burning wood chips. Of this, 220 stributed for district heating and 180 MW is transferred to the National Grid.
(c)	The The House	y also act as combined heat and power (CHP) stations. se make use of the heat in water to provide central heating for the power station ses nearby. CHP station receives 500 MW of power from burning wood chips. Of this, 220

Efficiency = %

		as of land are used to grow trees that will be cut up to make wood chips. The woused instead of gas, coal or oil, as fuel in boilers.	boc
(a)	Be	lain why the supply of wood chips is renewable. LEUSE WE CEIN FLOM MORE FRES AND KEEP THIS THE DOWN FOR CAPPAIN CHIPS AND HIN PLANT WE TREES.	[2]
(b)	(i)	Name one gas given out when wood chips are burned.	[1]
	(ii)	Name the gas used by trees during photosynthesis.	[1]
	(iii)	Give one reason why using wood chips as a fuel is carbon neutral. Because year gom't contain it.	[1]
(c)	They Thes	ne coal power stations have been converted to run on wood chips. y also act as combined heat and power (CHP) stations. se make use of the heat in water to provide central heating for the power station a ses nearby.	and
		CHP station receives 500 MW of power from burning wood chips. Of this, 220 M stributed for district heating and 180 MW is transferred to the National Grid.	1W
,	(i)	Calculate the total useful output power.	[1]
			Λ Ε
	•	Useful output power = 400 M	1
	(ii)	Calculate the efficiency of the power station using the equation:	[2]
6	a.	% efficiency = $\frac{\text{useful output power}}{\text{total input power}} \times 100$	
	24		8

Efficiency = 80 %

6.

		land are used to grow trees that will be cut up to make wood chips. The woo instead of gas, coal or oil, as fuel in boilers.	d Examin
(a)	Explain v	why the supply of wood chips is renewable. [2] [3] We Clin Flant more fres and Keep [3] The down for attachs whis and then Prant	2
(b)	' <i>More</i> (i) Na		
		me the gas used by trees during photosynthesis. [1] 1
		ve one reason why using wood chips as a fuel is carbon neutral. [1	-
(c)	They als	al power stations have been converted to run on wood chips. o act as combined heat and power (CHP) stations. ake use of the heat in water to provide central heating for the power station and earby.	d
		station receives 500 MW of power from burning wood chips. Of this, 220 MV sted for district heating and 180 MW is transferred to the National Grid.	V .
*	(i) Cal	culate the total useful output power. [1	1
a a			
	A.,	Useful output power = 400 MV	/
	(ii) Cal	culate the efficiency of the power station using the equation: [2	2
5	g g	% efficiency = useful output power total input power × 100	
			8 5 6 8 3

Efficiency = ____%

7

6.			s of land are used to grow trees that will be cut up to make wood chips. The wood sed instead of gas, coal or oil, as fuel in boilers.
	(a)	Expl	ain why the supply of wood chips is renewable
مهر		Ĺ	secure you Mr flunt thees
	(b)	(i)	Name one gas given out when wood chips are burned. [1]
	* s	(ii)	Name the gas used by trees during photosynthesis. [1]
2		(iii)	Give one reason why using wood chips as a fuel is carbon neutral. [1] Dlumber to neutrolises the cumbon
267	(c)	They Thes	e coal power stations have been converted to run on wood chips. v also act as combined heat and power (CHP) stations. the make use of the heat in water to provide central heating for the power station and les nearby.
		One is dis	CHP station receives 500 MW of power from burning wood chips. Of this, 220 MW stributed for district heating and 180 MW is transferred to the National Grid.
		(i)	Calculate the total useful output power. [1]
	n 122	*	
			Useful output power = 1200 MW
	8	(ii)	Calculate the efficiency of the power station using the equation: [2]
	a		% efficiency = useful output power total input power × 100
×		ø	

Efficiency = 80...%

6.

	e areas of land are used to grow trees that will be cut up to make wood chips. The wood are used instead of gas, coal or oil, as fuel in boilers.	Examine: only
(a)	Explain why the supply of wood chips is renewable [2]	1
	because you Mr plant their	
(b)	(i) Name one gas given out when wood chips are burned. [1]	1
	(ii) Name the gas used by trees during photosynthesis. [1]	1
	(iii) Give one reason why using wood chips as a fuel is carbon neutral. [1] blumse it neutrouses the components.	0
(c)	Some coal power stations have been converted to run on wood chips. They also act as combined heat and power (CHP) stations. These make use of the heat in water to provide central heating for the power station and houses nearby.	
	One CHP station receives 500 MW of power from burning wood chips. Of this, 220 MW is distributed for district heating and 180 MW is transferred to the National Grid.	
	(i) Calculate the total useful output power. [1]	1
T 186		
	Useful output power = 1100 MW	
8	(ii) Calculate the efficiency of the power station using the equation: [2]	2
a.	% efficiency = useful output power × 100	
		× ×
		12
	♦	

(4781-01)

6.			is of land are used to grow trees that will be cut up to make wood chips. The wood sed instead of gas, coal or oil, as fuel in boilers.	Exa
^d	(a)	K	ain why the supply of wood chips is renewable. [2] LOUSE CAN DE LOUSE '	
	(b)	(i)	Name one gas given out when wood chips are burned. [1] COVION DIBXIDE (0^2)	2
		(ii)	Name the gas used by trees during photosynthesis. [1]	
ω· :		(iii)	Give one reason why using wood chips as a fuel is carbon neutral. [1]	,
	(c)	They Thes	e coal power stations have been converted to run on wood chips. y also act as combined heat and power (CHP) stations. see make use of the heat in water to provide central heating for the power station and sees nearby.	
	næ		CHP station receives 500 MW of power from burning wood chips. Of this, 220 MW stributed for district heating and 180 MW is transferred to the National Grid.	E.
		(i)	Calculate the total useful output power. [1]	
				0
			Useful output power =18.0 MW	
		(ii)	Calculate the efficiency of the power station using the equation: [2]	
			% efficiency = useful output power total input power × 100	

900 × 100

Efficiency = $\frac{90}{100}$ %

6.

		as of land are used to grow trees that will be cut up to make wood chips. The woused instead of gas, coal or oil, as fuel in boilers.	od examine only
(a		secause they can be	0
Ja.	¥.	enewed,	
(b) (i)	Name one gas given out when wood chips are burned. COVION DIEXI DE CO2	1
	(ii)	Name the gas used by trees during photosynthesis.	[1] 0
	(iii)		[1] 0
(c,	They Thes	ne coal power stations have been converted to run on wood chips. y also act as combined heat and power (CHP) stations. se make use of the heat in water to provide central heating for the power station assess nearby.	nd
		CHP station receives 500 MW of power from burning wood chips. Of this, 220 M stributed for district heating and 180 MW is transferred to the National Grid.	W
	(i)	Calculate the total useful output power.	[1] 0
			5
		Useful output power =18.0 M	W
	(ii)		2] 0
		% efficiency = useful output power total input power × 100	
	500	000 × 100	
. 6 V	(8	Efficiency = $\frac{90}{100}$	% -
	- 0		

SECTION B

Answer all questions in the spaces provided.

Use the information in the separate Resource Folder to answer the following questions.

8.	(a)	Use	the information in Dia	agram 1 and Table 1 to answer t	the following questions.
		(i)	Arrange the houses house that loses lea	A, B and C in order of amount east energy.	of energy loss starting with the [2]
			House	House	House
			Loses least energy		► Loses most energy
		(ii)	Compare the cost insulation.	effectiveness of loft insulation, of	double-glazing and cavity wall [6 QWC]
			In your answer you	should compare:	
			the energy sathe value for r	ved by each type of insulation money of each type of insulation.	
	•••••				
	•••••				
	•••••				
	•••••				

				Examine
(b)		er to th stions.	e information about double-glazing and Graph 1 to answer the following	
	(i)	I.	Describe how the rate of loss of energy is related to the size of the air gap. [1]	
		II.	Give one reason why makers of double-glazing are unlikely to use an air gap larger than 20 mm. [1]	
	(ii)		use has a window area of 24m^2 . The air gap used in the windows is 15 mm. e is a 20°C temperature difference between the inside and outside of the e.	
		Calcu	ulate the rate of loss of energy through the windows of the house. [2]	
			Rate of loss of energy =W	,

SECTION B

Answer all questions in the spaces provided

Use the information in the separate Resource Folder to answer the following questions.

Use the information in Diagram 1 and Table 1 to answer the following questions.

(i) Arrange the houses A, B and C in order of amount of energy loss starting with the house that loses least energy.

House House

Loses least energy — ▶ Loses most energy

(ii) Compare the cost effectiveness of loft insulation, double-glazing and cavity wall insulation. [6 QWC]

In your answer you should compare:

- · the energy saved by each type of insulation
- the value for money of each type of insulation.

Dubble glazing windows you lose 12003 compared to 2000s for single stazing. So con love and extra 8003 for the single glazing and albert glazing costs floco.

Par For loft inswerten you lose 400, convered to the 1600s without it and it onto costs \$750 so it is very good wave for money. The dapt glazing windows is not worth it so much for form fixed cavits will institution you would lose 700, and for any warm you lose 700, and for without without con fixed cavity warm you lose 2003 and without without sith good value for money showy formed filled conty warms.

				wingled	1					
				s		ss. "				
)	Refer quest		e inform	ation abou	t double-ç	glazing and	d Graph	1 to answ	ver the fo	llowing
	(i)	I.	Describ	e how the	ate of loss	of energy i	s related	to the size	of the air	gap. [1]
				bigger energg	the is					ef.
		IL.	Give on	ne reason w	hy makers					air gap [1]
×		II.	Give on	ie reason w	hy makers	of double-	glazing ar	e unlikely 1	o use an	[1]
¥		II.	Give on larger the	ne reason w	hy makers	of double-	glazing ar	e unlikely t	o use an	[1] CehCe
*	(ii)	A ho	Give on larger the Becals Hen use has e is a 20	ne reason w nan 20 mm.	thy makers de(n') Verence	of double-of the second of the	glazing ar muh 30. gap used	e unlikely to the control of the wire in the wire	o use an	[1] <i>ChCe</i> 15 mm.

Rate of loss of energy = ____60 W

SECTION B

Answer all questions in the spaces provided

Use the information in the separate Resource Folder to answer the following questions.

Use the information in Diagram 1 and Table 1 to answer the following questions.

(i) Arrange the houses A, B and C in order of amount of energy loss starting with the house that loses least energy.

House House House

Loses least energy

▶ Loses most energy

(ii) Compare the cost effectiveness of loft insulation, double-glazing and cavity wall insulation. [6 QWC]

In your answer you should compare:

- the energy saved by each type of insulation
- the value for money of each type of insulation.

Duble grazing windows you lose 12003 compared to 2000s for single stazing. So con love and extra 8003 for the single stazing and duble grazing costs flood.

Par For loft insuration you lose 400, conferred to the 1600s without it and it onto costs f250 so it is very good value for money. The dufit grazing windows is not worth it so much, for form fixed courts.

Were good value for money for form fixed courts.

While cally want you lose 2000, and for either the fitted cally wants.

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	········			***************************************										

(b)	Refer quest		e inforr	nation a	about c	double-ç	glazing a	and G	raph 1	to ans	swer the	e follov	wing	
	(i)	I.	Descri	be how	the rate	e of loss	of energy	y is re	lated to	the siz	ze of the	e air ga	ip. [1]	1
						121	Gal			1250	~ ra	He e	P	
			1055	ent	NG	15	1055.							
		II.		ne reas than 20		makers	of double	e-glaz	ing are	unlikel	y to use	an air	gap [1]	0
*			Becau	ife l	<i>f</i> 0	de(n'}	make	JV.	uCh	OF C	i SIF	Leveh	Ce	
			then	no.	diffe	rence	PaSt	30			4	,		
*	(ii)	A hou There house	is a 2	a wind 20°C te	ow are mperat	a of 24 r ure diffe	m ² . The a	iir gap etweei	used in the in	n the v	vindows nd outs	s is 15 is ide of	mm.	
		Calcu	late the	e rate of	loss of	energy	through t	he wi	ndows	of the h	ouse.		[2]	1
	1 (4) 8.				4									
									и В	6 20			0 101	
					*			÷ 2		(d B

Rate of loss of energy = ____60 ___ W

SECTION B

Answer all questions in the spaces provided.

Use the information in the separate Resource Folder to answer the following questions.

Use the information in Diagram 1 and Table 1 to answer the following questions.

(i)	Arrange the houses A, B and C in order of amount house that loses least energy.	of energy loss starting with the
	House House	House
	Loses least energy —	Loses most energy
(ii)	Compare the cost effectiveness of loft insulation, insulation.	double-glazing and cavity wa [6 QWC
	In your answer you should compare:	
	the energy saved by each type of insulationthe value for money of each type of insulation	k.*,
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	¥	ä
The	most exceptive is t	he courter
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Muk	at it a grown how	t insulation.
The	2 Lower city & Est C	uso cont
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Mot	the best, as the	D-5140
F (50	in filled curitly 1	Mall'
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(J	,	2 thun the Ca Ctandent	
I' Wi	7 [7	C C/W/1 (NX D/ L DY VOOC)	
b	MC	K Wyll a	

(b)	Refer questi	to the information about double-glazing and Graph 1 to answer the following ions.	
	(i)	Describe how the rate of loss of energy is related to the size of the air gap. [1]	
		untill the our grop is 23 m mide	
		the sigger the gap the MOHE W	
		will so tompsel between which is	
		II. Give one reason why makers of double-glazing are unlikely to use an air gap	
		II. Give one reason why makers of double-glazing are drinkery to use arrain 949 [1] larger than 20 mm.	
		because cutter 20 MM it stuffs	
		to KOOD the Life of operary at the	
		Sand Vatl	
	(ii)	A house has a window area of 24 m ² . The air gap used in the windows is 15 mm. There is a 20 °C temperature difference between the inside and outside of the	
		house.	
		Calculate the rate of loss of energy through the windows of the house. [2]	

Rate of loss of energy = 960 W

1

SECTION B

Answer all questions in the spaces provided.

Use the information in the separate Resource Folder to answer the following questions.

8.7	(a)	Use :	the information in Diagram 1 and Table 1 to answer the following questions:
		(i)	Arrange the houses A, B and C in order of amount of energy loss starting with the house that loses least energy. [2]
			House House House
			Loses least energy — ▶ Loses most energy
	,	(ii)	Compare the cost effectiveness of loft insulation, double-glazing and cavity wall insulation. [6 QWC]
a			In your answer you should compare:
			 the energy saved by each type of insulation the value for money of each type of insulation.
			*
		he	2 most exective is the curity
, i	h	MN	Il foan filled, because it
		7	pper out in the four which
	<u>(</u>	M	et it a good hear insulation.
		h	2 form filed For also isn't
	۷	t h	2 Most expensive either, or
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	M	VOS	t expensive option, It's Myo
	n	107	the best as the Double !
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it much better it somes z700)	Examiner only
More than the SA Standard	
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(b) Refer to the information about double-glazing and Graph 1 to answer the following questions.	g
(i) I. Describe how the rate of loss of energy is related to the size of the air gap.	1] 0
until the our gap is 23 mm wide	
the bigger the grap the MOTE CUT	
II. Give one reason why makers of double-glazing are unlikely to use an air ga	ар
II. Give one reason why makers of double-glazing are unlikely to use arrain go larger than 20 mm.	1] 1
because after 20 MM LESTERY	
to keep the lock of energy at the	
(ii) A house has a window area of 24 m ² . The air gap used in the windows is 15 m. There is a 20 °C temperature difference between the inside and outside of the house.	n. ie
,	[2] 0
	1

Rate of loss of energy = 960 W

SECTION B

Answer all questions in the spaces provided.

Use the information in the separate Resource Folder to answer the following questions.

8. (a) Use the information in Diagram 1 and Table 1 to answer the following questions.

(i) Arrange the houses A, B and C in order of amount of energy loss starting with the house that loses least energy.

House House House Loses most energy

Loses least energy

(ii) Compare the cost effectiveness of loft insulation, double-glazing and cavity wall insulation.

the energy saved by each type of insulationthe value for money of each type of insulation.

In your answer you should compare:

By mot baying NOFE insutaltion It
By that baying Noft insutation it
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noving Loft insulation costs £250
but it saves 1200 J. If you had not
loft insulation you are wasting
1600 J per second But, If you do
have loft ingulation unu spania
ONMAN DOW YOUR SOCIAL TOO I DEV SECOND.
Double glazing costs 24000
Its saves 800 J per second It
I I

100SPS 1200 T	Examiner only
· Cavitu wall insulation	
<u> </u>	
*	
· · · · · · · · · · · · · · · · · · ·	*
(b) Refer to the information about double-glazing and Graph 1 to answer the follow questions.	wing
(i) I. Describe how the rate of loss of energy is related to the size of the air ga	ap. [1]
The bigger the air gap the more energy is lost	, , ,
II. Give one reason why makers of double-glazing are unlikely to use an air larger than 20 mm.	gap [1]
It would let more	
(ii) A house has a window area of 24 m ² . The air gap used in the windows is 15 in There is a 20 °C temperature difference between the inside and outside of house.	
Calculate the rate of loss of energy through the windows of the house.	[2]
	9

Rate of loss of energy =

2

SECTION B

Answer all questions in the spaces provided.

Use the information in the separate Resource Folder to answer the following questions.

- Use the information in Diagram 1 and Table 1 to answer the following questions.
 - Arrange the houses A, B and C in order of amount of energy loss starting with the house that loses least energy.

House . C

House A

House ... R

Loses least energy

Loses most energy

Compare the cost effectiveness of loft insulation, double-glazing and cavity wall insulation. [6 QWC]

In your answer you should compare:

- the energy saved by each type of insulation
- the value for money of each type of insulation.

**-Ittimergig-page	00SeS 1200 J	Examiner only
	· Cavity wall insulation	
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, s		
(b)	Refer to the information about double-glazing and Graph 1 to answer the following questions.	8
*	(i) I. Describe how the rate of loss of energy is related to the size of the air gap. [1] The bigger the air gap the	0
	more energy is lost	5
	II. Give one reason why makers of double-glazing are unlikely to use an air gap larger than 20 mm. [1]	0
	It would let more Envoyen	
	(ii) A house has a window area of 24 m ² . The air gap used in the windows is 15 mm. There is a 20 °C temperature difference between the inside and outside of the house.	27
	Calculate the rate of loss of energy through the windows of the house. [2]	1
		3 e
		DESCU

Rate of loss of energy = A

... W

