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Section C

Text 4

In the article below, the writer explains how the level of carbon dioxide can be reduced in the atmosphere.

Read the article carefully and answer Questions 15 – 20 in the Question Paper.

- 1 Trees are our original carbon removal technology: Through photosynthesis, they take in carbon dioxide. They have lately been touted as a climate saviour, a way to rapidly reduce the carbon dioxide that has accumulated in the atmosphere as we cut our emissions.
- 2 Planting trees and protecting forests are a major part of many corporate efforts to offset carbon dioxide emissions. They are an important natural solution. Trees can quickly and cost-effectively remove carbon dioxide from the atmosphere by absorbing it through pores in their leaves and stash it away in their branches and trunks. But there's a catch. To effectively undo emissions, the carbon dioxide we take out of the atmosphere needs to stay out, but carbon dioxide removed from the atmosphere is only temporarily stored in trees, vegetation and soil. A sizeable part of our emissions remains in the atmosphere, much of it for centuries and some of it for millennia to come. When companies rely on trees to offset their emissions, they risk merely hitting the climate "snooze" button. 5 10
- 3 There is another option for removing carbon dioxide from the atmosphere. Our current emissions come primarily from burning fossil fuels that spent millions of years underground before being dug up. If we put carbon dioxide back into the ground, put it into deep oceans or turn it into rocks, we can keep it out of the atmosphere for tens of thousands of years, effectively counteracting the long-term impact of our current emissions. 15
- 4 There are a handful of facilities in Europe and North America that are currently doing permanent carbon dioxide removal; not much is known about these technologies that have been developed for less than a decade, and they are still quite expensive, with prices typically in the hundreds of dollars per tonne of carbon removed. But a growing number of scientists are working toward scaling them up and reducing costs. 20
- 5 In a recent report, it was found that society needs to rapidly reduce our carbon dioxide emissions over the coming decades to avoid potentially catastrophic changes to our climate. It also showed that removing carbon dioxide already in the atmosphere would be an "essential element", alongside rapid reductions in emissions, to meet our climate goals. Why will we need so much carbon dioxide removal? The science is clear that to stop the world from continuing to warm, we need to get emissions to "net zero". But there will always be some remaining emissions, and some greenhouse gases, like carbon dioxide, will be extremely difficult and costly to fully eliminate. 25 30
- 6 To date, carbon removal efforts by companies and governments have largely relied on trees and soil. But even under a best-case scenario, these can provide only around half of the removal needed. Furthermore, where will people and nations allow the large-scale planting of trees? There's virtually no available arable land that is available for us to do large-scale planting. 35
- 7 The scale of permanent carbon dioxide removal that will be needed to meet our most ambitious climate goals is staggering compared with the small amount of removal that has taken place to date. We are playing catch-up here, as we are on many climate fronts.

- 8 To tackle climate change, we need to reduce emissions as quickly as possible. But we also need to invest in bringing down the cost of technologies to remove billions of tonnes of carbon dioxide from the atmosphere in the future. Though trees and soil are not a panacea for removing carbon, governments should still be encouraged to enhance the amount of carbon stored in trees, plants and soil. 40

Adapted from:
The Straits Times, "Let's not pretend planting trees will save the world."

Section C [25 marks]

Refer to **Text 4** on pages 5 and 6 of the Insert for Questions 15 - 20.

- 15 The writer says that trees "have lately been touted as a climate saviour" (line 2). With reference to Paragraph 1, give one detail to support this claim.

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

- 16 From Paragraph 2, give two reasons why planting trees is not the perfect solution to improve the climate.

.....
.....
.....
..... [2]

- 17 In Paragraph 3, explain why the writer said that relying on trees to remove carbon dioxide is akin to 'hitting the climate "snooze" button'.

.....
.....
.....
..... [2]

- 18 Here is a part of a conversation between two students, Lina and Subhas, who have

read the article:



Lina

it is impossible to remove carbon dioxide from the atmosphere.

I disagree. There is evidence that we can.



Subhas

(a) Give two pieces of evidence from Paragraph 5 to support Lina's view.

(i)

..... [1]
...

.....

(ii)

..... [1]
...

.....

(b) Quote one piece of evidence from Paragraph 4 to support Subhas' statement.

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

- 19 (a) In Paragraph 7, the writer compares the scale of permanent carbon removal that is needed with the small amount of removal that has taken place to date (line 41). Why did the writer describe this comparison as 'staggering'?

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

- (b) 'We are playing catch-up here, as we are on many climate fronts' (line 33). What does this suggest about the state of the world's climate?

.....

[1]

- 20** Using your own words as far as possible, summarise how carbon dioxide levels can be managed, as well as the challenges faced in doing so.

Use only information from Paragraphs 2 to 6 of Text 4.

Your summary must be in continuous writing (not note form). It must not be longer than 80 words (not counting the words given to help you begin).

Carbon dioxide levels can be managed by

.....

.....

.....

.....

..... [No. of words:
.....]

3EXP EOY P2 ANSWER KEY

Section A

1. Look at Text 1. Tick (✓) the most effective title for the image in this advertisement.

- ☐ Looking After Our World
- ☐ Taking Good Care of Our Health
- ☒ Our Planet, Our Health

2. The advertisement encourages readers to 'reimagine a world where clean air, water and food are available to all?'

What does the world 'reimagine' suggest?

It suggests that we should think again about people who are deprived of clean water, air and food.

3. Identify the phrase in text 2 which implies an urgent need for change.

13 million deaths around the world each year are due to avoidable environmental causes.

4. Look at Texts 1 and 2 and statements (a) and (b) below.

Decide whether the statements refer to Text 1, Text 2, both texts or neither text.

Circle the answer you have chosen for each statement.

(a) Readers are encouraged not to take basic needs for granted.

Text 1/ Text 2/ Both/ Neither

(b) The text/s aims to educate readers on the health and climate crisis.

Text 1/ Text 2/ Both/ Neither

Section B

- 5 Give **two** pieces of evidence from Paragraph 1 which show that the writer is getting better at looking for and catching chameleons.

He was more skilled at spotting the chameleons (as they sat in the bushes and trees) [1m] and he could assemble a collection of over a dozen chameleons in a short time [1m].

- 6 In Paragraph 1, what do “both difficulties” (line 5) refer to?

The difficulties of feeding [1m] and housing [1m] the chameleons.

- 7 “Understandably, he was a little puzzled” (line 12). **In your own words**, explain why the writer said that Geoff felt this way.

From the text : “like an over-extravagant Japanese flower arrangement”.

Geoff must have felt that the construction was too elaborate/too complicated [1m] and it looked too decorative or fanciful [1m].

- 8 (a) The writer explained to Geoff “the cunning ingenuity” (line 13) of his creation. Explain in what way the construction is cunning with reference to **two** pieces of evidence in Paragraph 4.

It was cunning as it was meant to lure flies to the meat [1m] and also prevent the chameleons from escaping [1m].

- 8 (b) The writer was very pleased with his construction. Explain how the language used in Paragraph 4 and 5 shows the writer’s sense of pride in his work. Support your answer with three details from Paragraph 4 and 5.

“a thing of beauty” suggests that the writer was very pleased with his elegant creation.

“suitable admiration” suggests that the writer noted that Geoff was also very impressed with/in awe of his creation and he was very proud of that.

“we sat down proudly to watch them” suggests the writer was filled with satisfaction as he observed the chameleons explore their new home.

“watch them explore the amenities of their new home” suggests the writer was very impressed with how he had built a very well-equipped home for the chameleons.

Accept any 3 of the above.

- 9 In Paragraph 6, the writer said “it was as I had predicted.” (lines 25-26). Why did he predict this outcome would happen?

He knew that chameleons could not swim and when they retreated from the water, it was

exactly what he had predicted. [1m]

Answer must show student's understanding of his initial knowledge that chameleons could not swim, hence their subsequent behaviour of retreating from the water.

- 10** In Paragraph 6, the writer described the chameleon to have “proceeded to make off with an air of wounded vanity” (lines 30-31). Suggest a reason why the chameleon is described in this way, paying close attention to the words in *italics*.

The chameleons had to run away quickly but they were not built for speed. Their awkward/clumsy way of escaping made them look silly/unglamorous/pathetic/desperate/ embarrassed /hurt their pride and hence they are described in this way. [1m]

Accept any reasonable answer that links the clumsy way they move to the chameleons losing their pride.

- 11** From Paragraph 7, identify an expression which is a contrast to the writer's description of his creation as an “elegant construction” (line 34).

“(a) total failure” [1m]

- 12** In Paragraph 7, it is clear that the writer realised his misconception about the relation between meat and flies. Explain briefly what his misconception is.

He had mistakenly thought that any piece of meat left out in the open would be covered with flies in a few seconds. [1m]

- 13** Quote a word from Paragraph 8 that suggests that the task of feeding the chameleons is a difficult one.

“laborious” [1m]

Not to be confused with “Laboriously” (line 40) as it was used to describe the task of shifting the bath and branch to a new position.

- 14** The structure of the text reflects the writer's feelings at different stages of his attempt to catch, house and feed the chameleons. Complete the flow chart by choosing one word to summarise his dominant feeling at each stage. There are some extra words that you do not need to use.

Main feelings

Paragraph 1 – 2 : **confident**

Paragraph 3 - 5: **self-satisfied**

Paragraph 6 : **incredulous**

Paragraph 7 - 8: **defeated**

- 15 The writer says that trees “have lately been touted as a climate saviour” (line 2). With reference to Paragraph 1, give one detail to support this claim.

Trees rapidly reduce carbon dioxide that has accumulated in the atmosphere. [1]

Students are allowed to rephrase as long as the meaning of their answer does not differ from the intended meaning from the text.

- 16 From Paragraph 2, give two reasons why planting trees is not the perfect solution to improve the climate.

Carbon dioxide removed from the atmosphere is only temporarily stored in trees, vegetation and soil/ only stored in trees, vegetation and soil for a short period of time [1].

A sizable part of our emissions will remain in the atmosphere for centuries and millennia/for a very long time to come. [1]

Answers must contain the underlined phrases.

Not accepted: “they are merely hitting the climate ‘snooze’ button – not giving a clear reason why planting trees is not the perfect solution. The answer can be found in the same paragraph in lines 10 – 11.

- 17 In Paragraph 2, explain why the writer said that relying on trees to remove carbon dioxide is akin to ‘hitting the climate “snooze” button’.

Relying on trees is not a permanent solution/ long-term solution OR Relying on trees only a temporary solution / Relying on trees is just a short-term solution [1]....

Students failed to realize that trees were thought of as ‘natural solution’ (line 5) to the climate issues. Hitting snooze would mean that trees is not the actual solution to the issue/ does not provide a permanent or long-term answer to the issue.

A sizeable number of students were able to identify that the snooze button refers to trees not being a permanent solution to the climate problem.

-but instead, it pushes the problem for future generations to deal with / delays the worsening of the climate problem / the climate problem will surface again in the future.

Students also fail to understand that snooze button symbolizes a halt in the process. So when the problem bubbles up again, it would not be the issue for the current generation to deal with – but the next generation instead. Many students mentioned that snooze button means carbon dioxide is temporarily stored in tress. This is incorrect because the climate button refers to the bigger issue of climate problem, hence hitting snooze means a pause/delay in the worsening of the climate issue.

Many students left this part out of their answer.

18a Give two pieces of evidence from Paragraph 5 to support Lina's view.

- (i) **There will always be some remaining emissions. [1]**
- (ii) **Some greenhouse gases, like carbon dioxide, will be extremely difficult and costly to fully eliminate. [1]**

Most students scored full marks for this question.

18b Quote one piece of evidence from Paragraph 4 to support Subhas' statement.

There are a handful of facilities in Europe and North America that are currently doing permanent carbon dioxide removal. [1]

Most students scored full marks for this question.

19 (a) In Paragraph 7, the writer compares the scale of permanent carbon removal that is needed with the small amount of removal that has taken place to date (line 41). Why did the writer describe this comparison as 'staggering'?

The current efforts to remove carbon dioxide is very/grossly/severely insufficient to meet our climate goals [1]

Also accepted:

- huge/vast difference between what has been done versus what needs to be done
- The difference between permanent carbon removal and the small amount of removal done to date is massive/shocking/very far off

Do not accept answers that simply state 'insufficient' or 'not enough'. Students must display understanding that the current efforts are very insignificant compared to what is needed to permanently remove carbon dioxide. Answers must contain a degree adverb.

(b) 'We are playing catch-up here, as we are on many climate fronts' (lines 42 – 43). What does this suggest about the current climate situation?

There are various climate problems that need our attention/need to be managed. [1]

Do not accept: deteriorating, very bad etc

This question was very badly done. Sentence is saying that besides the high amount of carbon dioxide in the air, there are also other climate issues that we need to address.

- 20 **Using your own words as far as possible**, summarise how carbon dioxide levels can be managed, as well as the challenges faced in doing so.

Use only information from Paragraphs 2 to 6 of Text 4.

Your summary must be in continuous writing (not note form). It must not be longer than 80 words (not counting the words given to help you begin).

Carbon dioxide levels can be managed by...

From the passage	Summarized
How carbon dioxide levels can be managed	
1. <u>Planting trees and protecting forests</u> (are a major part of many corporate efforts to offset emissions.)	<u>...planting trees and preserving forests.</u>
2. <u>... quickly and cost-effectively remove carbon</u> (from the atmosphere)	Trees can eliminate carbon dioxide <u>fast and inexpensively.</u>
3. (To effectively undo emissions,) the <u>carbon we take out of the atmosphere needs to stay out</u>	<u>Eliminated gas should not return to the atmosphere</u>
4. If we <u>put carbon back into the ground, put it into deep oceans or turn it into rocks</u> , (we can keep it out of the atmosphere for tens of thousands of years...)	They can be kept <u>underground, underwater or solidified into rocks.</u>
5. There are only a handful of <u>facilities in Europe and North America that are currently doing permanent carbon removal;</u>	We can also leverage on <u>technology</u> to remove carbon permanently.
Challenges	
6. but carbon dioxide removed from the atmosphere is <u>only temporarily stored in trees, vegetation and soil,</u>	However, trees only store carbon dioxide <u>temporarily..</u>
7. <u>...not much is known</u> about these technologies that have been developed for less than a decade...	The technology used to get rid of carbon dioxide permanently is also <u>new....</u>
8. and they are still quite <u>expensive</u> , with prices typically in the hundreds of dollars per tonne of carbon removed.	<u>....and exorbitant.</u>
9. But there will always be some <u>remaining emissions,</u>	There will always be <u>residual</u> carbon dioxide in the air...
10. and some greenhouse gases will be extremely <u>difficult and costly</u> to fully eliminate.	<u>...and removing them permanently is challenging and expensive.</u>
11. But even under a best-case scenario, these can provide only around <u>half of the removal</u> needed.	Trees can only <u>remove half of the carbon dioxide</u> in the air.

12. Furthermore, where will people and nations allow the large-scale planting of trees? There's virtually no available arable land that is available for us to do large-scale planting. There is not enough suitable land to do mass-planting of trees.

Carbon dioxide levels can be managed by planting trees and preserving forests, because trees can eliminate carbon dioxide fast and inexpensively. Eliminated gas should not return to the atmosphere. Instead, it can be kept underwater or solidified into rocks. However, trees only store the gas temporarily and can only remove half of it, so there will always be residual gas in the air. Removing it permanently is challenging and expensive. There is also not enough land to plant many trees. (73 words)