

**NAMIBIA SENIOR SECONDARY CERTIFICATE**

**FIRST LANGUAGE ENGLISH ORDINARY LEVEL**

**4102/1**

PAPER 1 Reading and Directed Writing

2 hours 30 minutes

Marks 70

**2018**

Additional Material: Answer Book

**INSTRUCTIONS AND INFORMATION TO CANDIDATES**

- Write your answers in the Answer Book provided.
- Write your Centre Number, Candidate Number and Name in the spaces on the Answer Book.
- Write with blue or black pen.
- Do not use correction fluid.
  
- Answer **all** questions.
  
- Dictionaries are not permitted.
- The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of **6** printed pages and **2** blank pages.



Republic of Namibia

**MINISTRY OF EDUCATION, ARTS AND CULTURE**

**PART 1**

Read the passage and then answer the questions that follow.

**Passage A****Are E-Cigarettes Dangerous? Here's What You Need to Know**

They may look innocent, multi-coloured and fun, but do not be fooled: just because you can smoke them indoors doesn't make them any safer than traditional cigarettes. E-cigarettes are the growing trend for cigarette smokers and non-smokers alike, but just like alcohol, fatty foods, and the packs of cigarettes you can buy at the store, there are potential downfalls. If you believe your e-cigarette is at least easier on your lungs than the harsh cigarette smoke you may be used to, then you may be in for a surprise: the chemicals in your e-cigarette may be just as bad for your lung health as traditional cigarettes.

An e-cigarette itself is a small, battery-operated device that's similar in size to a pen. They come in many styles and brands, and a lot of e-cigarettes also come with refillable tanks. When they're refillable, you have the option to purchase different flavoured liquids and many of them contain nicotine. This is considered ideal for those looking to quit smoking. Most e-cigarette users are former cigarette smokers who consider inhaling the liquid in e-cigarettes to be less dangerous than the smoke from cigarettes. But studies suggest that these liquids come with their own problems.

To create the e-cigarette liquid, nicotine is extracted from tobacco and then mixed with a base, such as propylene glycol, which is an alcohol found in antifreeze and used in the plastics and perfume industries. Flavourings, colourings and chemicals are then added to this mixture to form the smoking liquid, explains the American Lung Association.

You may not be inhaling real smoke when you're vaping (inhaling e-cigarettes) but the liquids you are taking into your lungs "may be just as toxic", according to *Science News*. Researchers from the Centre for Tobacco Control Research and Education at the University of California, San Francisco, found that when you are inhaling the liquid from your e-cigarette, you're taking in very small particles, which can trigger inflammation. E-cigarettes have also been linked to asthma, stroke, heart disease and diabetes, which is doubly bad for those with a family history of these conditions.

It is also tough to tell exactly what is in the e-cigarette liquid, as the Food and Drug Administration (FDA) in the U.S. has not evaluated every product on the market, and they're unlikely to get there any time soon. There are nearly 500 brands and 7 700 flavours of e-cigarette and they'll all remain available as the FDA sorts through each and every one. In 2009, initial lab tests conducted by the FDA found detectable levels of chemicals known to cause cancer in two brands of e-cigarettes and studies have also found that the levels of toxins in the aerosol vary greatly from brand to brand.

We do know one thing for sure: nicotine is found in these products and nicotine itself poses a risk to your health, particularly for pregnant women, as it has been linked to birth defects. For adolescents, it can stall brain development, which can have an effect on memory and attention span.

Liquid nicotine has a different, and possibly more severe effect than the nicotine found in regular cigarettes. *Emergency Physicians Monthly* found these liquids are highly concentrated, so there is a higher possibility of ingesting toxic amounts. It is estimated that the lethal dose of nicotine in adults is between 30 and 60 milligrams and in these liquid solutions, it can be concentrated up to 100 milligrams per millilitre.

You may have to step outside to smoke your tobacco cigarette, but e-cigarettes are commonly allowed indoors, which might cause some nicotine-addicted users to smoke even more frequently than they normally would. Vaporised nicotine may even cause cancer, though this has not yet been proven.

E-cigarettes were originally designed to help cigarette users quit smoking, but what is really troubling is the rate at which younger children are using them. *Medical News Today* explains e-cigarettes are often marketed toward a younger crowd, and usage has more than doubled in high schools in the U.S. between 2011 and 2012. Over 1,78 million e-cigarette users were high school adolescents in 2012. Some states have prohibited the sale of e-cigarette to minors, but it's easy to buy them online. There's also concern about them acting as a gateway drug for more harmful substances as well.

While e-cigarettes may contain dangerous levels of nicotine and other chemicals, experts still believe they are less dangerous than cigarettes and are appropriate for those looking to quit smoking for good. *Public Health England* estimated in 2015 that e-cigarettes are 95% less harmful than cigarettes themselves, which is significant. However, it's still important to note that the liquids are not 100% safe either, so the best course of action is probably quitting smoking completely.

*(Taken and adapted from: <http://www.cheatsheet.com/health-fitness/dangers-of-e-cigarettes.html?a=viewall>)*

1 Choose the correct answer to the questions that follow from the options provided. Write down only the letter of your choice.

(a) The word "stall" (paragraph 6) means to

A copy.

B develop something well.

C speed up.

D stop progress.

[1]

(b) According to paragraph 9, why were e-cigarettes initially marketed?

A to allow adolescents to smoke without feeling guilty

B to help smokers to quit smoking

C to make people smoke indoors

D to smoke without any dangers

[1]

(c) According to paragraph 10, people might think e-cigarettes are not dangerous because

A it does not lead to other drugs.

B liquid appears to be less dangerous than smoke.

C minors cannot smoke them.

D vapour does not cause cancer.

[1]

2 What does the author mean when she says that e-cigarettes may “act as a gateway drug for more harmful substances”? (paragraph 9)

[1]

3 What reasons are presented in the text to explain why people might switch from normal cigarettes to e-cigarettes?

[3]

4 What is the author’s attitude towards e-cigarettes? Give reasons for your answer, based on the text.

[3]

**[10]**

5 The teachers at your high school have noticed an increase in the use of e-cigarettes by your peers.

They have asked you to **write a speech** where you explain the dangers of **e-cigarettes** and **persuade your fellow learners to stay away** from them.

You should write between **1** and **1 ½** pages, depending on the size of your handwriting.

**[20]**

**PART 2**

Read the passage and follow the instructions given.

**Passage B****How Artificial Sweeteners May Cause Us to Eat More**

A vast body of research suggests that sugar substitutes, despite having far fewer calories than sugar itself, can wreak various forms of metabolic havoc such as upping diabetes risk and, perhaps paradoxically, causing weight gain in the long term. A new study published in *Cell Metabolism* suggests that artificial sweeteners mimic a starvation state in the brain, causing some organisms to seek energy by eating more food.

In the study, a collaboration between researchers from the University of Sydney's Charles Perkins Centre and the Garvan Institute of Medical Research, fruit flies were fed either a diet of yeast and sucrose or one with the synthetic sweetener sucralose, used in a variety of low-calorie foods. Flies fed the sugar-free diet for five or more days consumed 30 percent more calories than those on sugar. When sucralose was removed from their diet, calorie consumption in the formerly sugar-free group fell back to normal.

Using a technique called the proboscis extension response (PER) assay, essentially a taste test that can determine a fly's interest in ingesting a certain food, the authors also found that sucralose consumption resulted in an increased motivation to eat real sugar. What's more, by recording electrical activity in a fly's sensillas, structures that house their taste receptors, it also appeared that a prolonged sucralose diet actually increased the insects' sensitivity to sugar, meaning they presumably grew to find it more pleasurable. "After sustained consumption of artificial sweetener, the animals could detect much smaller concentrations of real sugar, would eat more of it and respond to it physiologically with much more intensity," associate professor of genomics and study lead author Greg Neely explained.

By monitoring the expression and effects of compounds involved in appetite and energy regulation, including various enzymes and neurotransmitters, Neely and his colleagues were able to identify a network in the brain that appears responsible for the hunger-inducing effects of artificial sweeteners. In short, the compounds interfere with an evolutionary ancient interplay between insulin, taste neurons and the brain's reward circuit that normally drives us to seek out life-sustaining food when nutrients are scarce. "We found that inside the brain's reward centres, sweet sensation is integrated with energy content. When sweetness versus energy is out of balance for a period of time, the brain rewires and increases total calories consumed." In other words, when the brain detects sweetness in the absence of actual caloric energy, it compensates by increasing the deliciousness of sugar, driving increased food consumption. "The pathway we discovered is part of a starvation response that actually makes nutritious food taste better when you are starving," Neely said.

It appears that Neely's findings may not be limited to fruit flies. His team was able to replicate the findings in mice: after seven days on a sucralose diet, the rodents showed a 50 percent increase in food consumption, partly due to the activity of a neurotransmitter called neuropeptide Y that drives hunger during fasting. Yet it is too early to fully deduce these results to humans. Whereas a number of past studies suggest that artificial sweeteners can prompt us to eat more, the literature is inconsistent when it comes to people.

Still, the evidence that synthetic “sugars” are in some way metabolically detrimental via a variety of mechanisms is getting stronger. Research published in *Nature* in 2014 reported that some artificial sweeteners can alter the gut microbe population in both mice and humans to promote calorie absorption. Another recent study found that sucralose ingestion impairs the body’s ability to process regular sugar. As reported earlier this year, overindulging in sweet and fatty foods alters brain chemistry in the reward system, driving us to overeat.

If artificial sweeteners render these foods even more pleasant than usual, we could be setting ourselves up for a losing battle between chocolate and willpower. However, none of this is to say doctors should start recommending that people give up artificially sweetened food in favour of sugary alternatives; excess sugar intake comes with its own set of ills.

As Neely puts it, “I think the basic message here is that we know the artificial sweetener sucralose is not totally healthy, at least in animals. This justifies more research into how these compounds affect people as well.”

*(Taken and adapted from: <http://www.scientificamerican.com/article/how-artificial-sweeteners-may-cause-us-to-eat-more/>)*

- 6 Read passage **B** and re-read passage **A**. Using material from **both** passages, summarise the **disadvantages** of e-cigarettes and artificial sweeteners.

You should write 1 to 1½ pages, depending on the size of your handwriting.

**[20]**

- 7 You have recently read the article entitled “How Artificial Sweeteners May Cause Us to Eat More”. As a **member of the public**, you are concerned about how artificial sweeteners may harm us. **You think that artificial sweeteners should be taken off the market.**

Based on the information in passage **B**, write a letter to the CEO of Shoprite, demanding that they take all artificial sweeteners off their shelves.

You should write 1 to 1½ pages, depending on the size of your handwriting.

**[20]**

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