

# JUNIOR SECONDARY CERTIFICATE

**ENGLISH FIRST LANGUAGE**

**1101/1**

PAPER 1 Reading and Directed Writing

2 hours

Marks 60

**2017**

Additional Materials: Answer Book

## INSTRUCTIONS AND INFORMATION TO CANDIDATES

- Write your answers in the Answer Book provided.
- Write your Candidate Number and Name in the spaces on the Answer Book.
- Write in dark blue or black pen.
- Do not use correction fluid.
  
- Answer **all** questions.
  
- You should pay attention to spelling, punctuation and handwriting.
- The number of marks is given in brackets [ ] at the end of each question or part question.

This document consists of 7 printed pages.



Republic of Namibia

**MINISTRY OF EDUCATION, ARTS AND CULTURE**

**SECTION A**

Read the following passage carefully and answer Questions 1 – 12.

**Passage 1****THINK IT, DO IT! by Lara Atson**

Quadriplegic Ian's everyday world has opened up dramatically thanks to a life-changing medical breakthrough.

The fact that Ian Burkhart (24), a quadriplegic from Dublin, Ohio in the US, was able to move his hand again in 2014 after three-and-a-half years of immobility is being hailed as one of the most important advancements in the field of neural\* engineering.

“Doctors told me that most likely I'd be able to move my shoulders around but nothing else for the rest of my life,” says Ian, who snapped his neck in a diving accident six years ago. Now he can accomplish a host of activities and is “most excited about the movements that are just everyday movements in life.” After a groundbreaking experiment – the first of its kind – he revels in being able to bring a cup to his lips after relying on someone for help every time he needed so much as a sip of water. He enjoys swiping his credit card through a card reader and loves playing the guitar again – even if it's via a video game.

Previous studies have suggested the brain undergoes “reorganisation: a rewiring of connections” after spinal-cord injury. Chief researcher Chad Bouton expresses the hope that there are perhaps not as many neural changes in the brain as we might have imagined, and we can bypass damaged areas of the spinal cord to regain movement. This sort of “neural bypass” had previously been tried in monkeys, and signals had been decoded in humans and used to animate a robotic prosthetic arm. However, Ian's case proved that for the first time someone's own limb has been “reanimated”. A big disadvantage is that Ian cannot take the equipment home with him and can use it only when in the laboratory, but Ian has renewed hope for others like him.

Ian had always been sporty and adventurous. He was a Boy Scout and a lacrosse player at school and went on to study video production at Ohio University. He was on holiday with friends in North Carolina in 2010 when disaster struck. He went swimming in the ocean with friends, dived under a wave, hit a sandbank and broke his neck. Desperate for anything that offered even the slightest chance of improvement, he jumped at the chance to volunteer in clinical trials when he heard researchers at Ohio State University were working on reanimation technology.

So Ian found himself on an operating table in 2014 and a small computer microchip was implanted in the motor cortex of his brain. This chip picks up signals from the part of the brain that controls hand movements. Weeks of recuperation followed the surgery. Ian had headaches and was advised not to think too deeply and avoid watching TV. Then the training began.

The microchip enables his brain activity to be picked up by a computer that transforms it into electric pulses linked to a cuff on his forearm. From there 130 electrodes send the pulses through his skin to the muscles that control wrist and finger movements.

Ian spent weeks focussing on moving his hand so that scientists could build patterns (algorithms) to determine which neurons he was using. In up to three sessions a week he learnt how to control his hand movements in a time span of over 15 weeks. When Ian could eventually close his hand for the first time neurosurgeon Dr Ali Rezai said, “It was a surreal\* moment. We all

just looked at one another and thought, 'Okay, the work is just starting.' ”

Ian's microchip will be removed once the clinical trials end. Ian reacts to this, "I've enjoyed it so much. I wish I could take the thing home. It would give me so much independence. Now I've got to rely on someone else again for so many things, like getting dressed, brushing my teeth – all that. I just want other people to hear about this and know that there's hope. Something will come around that makes living with this injury better."

Dr Rezai responds, "I wish we didn't have to remove the chip, but this is an \*impetus to develop longer-term implants in future. Ten years ago we couldn't do this. Imagine what we can do in another 10."

*(Abridged and adapted, YOU, 28 April 2016, pp 132 – 133)*

\*neural - relating to a nerve or a nervous system

\*surreal – very strange or unusual

\*impetus – a driving force

In answering Questions 1 – 6 write down the number of the question and the correct answer next to it, for example **1A**.

- 1 A breakthrough is a  
A book of importance.  
B burst of water through a dam wall.  
C passage through a mall.  
D sudden important development or discovery. [1]
- 2 A quadriplegic is a person who  
A cannot move all four limbs.  
B cannot use his arms.  
C cannot use his legs.  
D is agonised by shoulder pain. [1]
- 3 Ian Burkhart's diving accident happened  
A 15 months ago.  
B in 2010.  
C in 2014.  
D three-and-a-half years ago. [1]
- 4 Ian had always been  
A a Boy Scout and a soccer player.  
B a lacrosse player and a cricket player.  
C a student and a surfer.  
D sporty and adventurous. [1]
- 5 The computer microchip implanted in Ian's brain  
A causes nausea.  
B makes Ian close his hand.  
C picks up signals from the part of the brain that controls hand movements.  
D transforms brain activity into electric pulses. [1]
- 6 Dr Rezai is hopeful that people will be able to use the technology at home in  
A twenty years' time.  
B a decade.  
C a century.  
D fifty years' time. [1]
- 7 Why is Ian excited at being able to make everyday movements? [2]
- 8 Give **three** examples of movements Ian can accomplish again? [3]
- 9 What does chief researcher, Chad Bouton, hope for? [3]

- 10** Ian was desperate for any improvement after three-and-a-half years of immobility. What did he do? [2]
- 11** What is a disadvantage of the method applied to Ian's hand? [2]
- 12** State whether the following is **true** or **false** and give a reason for your answer: "It took Ian at least 15 weeks of up to three sessions a week to learn how to control his hand movements." [2]

**[20]**

**SECTION B**

Read the following passage carefully and answer Questions 1 – 6.

**Passage 2****WILD ABOUT THE WAVES by Saskia Hill**

Ashtan has cerebral palsy but that does not stop him from hitting the surf – and he will soon be competing overseas!

If the sun is shining and the surf is up, chances are you will find Ashtan Davids and his sister paddling out in search of the perfect wave. Ashtan, however, is no ordinary surfer. The 18-year-old from Muizenberg, Cape Town, has cerebral palsy\* and is wheelchair-bound.

“The water gives him freedom,” his mother, Shireen (56) says.

Ashtan loves nothing more than heading out into the ocean on his specially adapted surfboard, his adoring sister, Megan (26) at his side. The teenager is clearly the apple of his mom’s and sister’s eye – and it is their love for him that spurred them on to start an initiative that would help not only Ashtan but also others like him. Shireen and Megan launched the non-profit organisation *Believe In Schatzi* in 2014 to support disabled young people on the cusp of adulthood.

‘Schatzi’ means “a treasure” in German and that is exactly what Ashtan is to them. *Believe In Schatzi* arranges for young people to help with beach cleanups and other activities that benefit the community. It also campaigns for better wheelchair access for the disabled.

One pillar of the non-governmental organisation is “Smile and Wave”, which supports youngsters keen to brave the waves, and no one is keener than Ashtan, who has always been a water baby, his sister comments.

Megan is her brother’s biggest supporter as well as his “voice” as Ashtan’s speech is affected by his condition. He, therefore, relies on her to help him communicate. She never allows him to enter the water without her.

Surfing is not Ashtan’s only passion: he is also a dance champion. In 2014 he took top honours at the Western Cape ballroom championships in the division for disabled dancers. The family’s seaside flat is full of his trophies.

Shireen and Megan have always gone out of their way to ensure Ashtan has as independent a life as possible. They taught him basic maths and reading, and when he was 16 he completed a rehabilitation programme in order to master everyday tasks such as putting on a T-shirt, making sandwiches and brushing his teeth.

When they were younger Megan and their elder brother, Jochaid (29), would take Ashtan to the beach and bury him in a standing position in the sand. This served as physiotherapy as it allowed him to bear weight on his feet.

Ashtan loved the water so much that Shireen and Megan decided to explore ways of allowing him to spend time in the surf safely. They worked with the occupational therapy department of the Groote Schuur Hospital and designed a surfboard with Velcro strips that attach to his wetsuit to prevent him from rolling off. It has been such a success that his instructors, Chrisjan Bredenkamp and Paul Jurgens, are now preparing him to take part in the World Adaptive Surfing Championship in California in September. This will be Ashtan’s first overseas trip

and he will be the only participant with cerebral palsy in the competition. Most of the other competitors will be amputees.

Both Chrisjan and Paul get into the water with Ashtan. One helps steady him and catch waves, the other waits ahead in the water to direct him to the shore. They are on track for the competition, they say. Ashtan just needs to remember to look ahead so that he can follow his instructors' commands. However, there is plenty of time to practise and Ashtan is up for it. His eyes sparkle as Megan carries him to the beach and Chrisjan and Paul strap him to the board. Then he is carried to the water, and he is off. No time to waste when there are waves to be caught!

(Adapted, YOU, 28 April 2016, p 124)

\*cerebral palsy – a condition marked by impaired muscle coordination and spastic paralysis caused by damage to the brain before or at birth

Questions **1 – 5** should be answered in full sentences and in your **own words** as far as possible.

- 1 “If the sun is shining and the surf is up, chances are you’ll find Ashtan Davids and his sister paddling out in search of the perfect wave.” (par. 1, first sentence)  
This is a normal scene for a surfer. Could there be anything special about it? [3]
  - 2 What enables Ashtan to go surfing? [4]
  - 3 What is *Believe In Schatzi*? What is its purpose? [5]
  - 4 Ashtan is a twofold champion. Why? [3]
  - 5 Mention the effects of cerebral palsy Ashtan has to cope with in everyday life. [5]
- [20]**

- 6 You have recently read about Ian Burkhart and Ashtan Davids and are full of admiration for what they have taken on in their lives.

You have a friend who broke his/her neck falling off a cliff when mountaineering and has been wheelchair-bound since then.

You feel your friend should know about Ian and Ashtan and their remarkably positive attitudes.

Therefore you write a **friendly letter** to your friend telling him/her about Ian and Ashtan, as well as encouraging him/her in his/her efforts not to give up.

Base the content of your letter on **both Passage 1** and **Passage 2**.

The body of your letter should be about **200** words in length.

**[20]**