ANS Racibórz

English Competition 2026

Phase 1

*Student's name :*____

Score: ________/78

PART 1 – Listening comprehension

Task 1 (*Recording 1)*

Listen and match speakers 1–6 with aspects of their lifestyles a)–g). There is **one** extra answer you do not need. You will hear the recording **twice.**

1 Judy _____ **2** David _____ **3** Alison _____ **4** Patricia _____ **5** Doug _____ **6** Moira _____	**a)** struggles to find time outside of work to keep fit. **b)** is keen to work less and relax more. **c)** generally offloads on friends at the weekend. **d)** finds messing around in the garden therapeutic. **e)** only gets time to relax on Sundays. **f)** is having to process a lot of new information. **g)** regrets not being able to find time for her favourite hobby.

Task 2 *(Recording 2)*

Listen and write *true* (**T**) or *false* (**F**) next to each sentence. You will hear the recording **twice.**

1. Sharon is aggressive towards Ben. ____
2. Sharon's really into discussing the political situation with Ben. ____
3. Lizzie likes factual programmes. ____
4. Fred believes he was unfairly dismissed. ____
5. Fred wasn't expecting to lose his job. ____
6. Claire thinks the critics views were a fair reflection on the exhibition. ____
7. Claire was surprised when she heard others praising the originality of the exhibition. ____
8. Dan only ever listens to the news on his way to work. ____
9. Dan is embarrassed to admit that he enjoys a bit of gossip. ____
10. Toby says he looks forward to getting up every day. ____

PART 2 - Reading comprehension

How to Build an Artificial Heart - Part 1:

Task 1. Reading comprehension

Decide if the statements about the following text are true [T] or false [F].

Daniel Timms started working on his artificial heart in 2001, when he was twenty-two years old. A graduate student in biomedical engineering, he was living with his parents in Brisbane, Australia. He was searching for a dissertation topic when his father, Gary, who was fifty, suffered a massive heart attack. At first, the problem seemed to be a faulty valve; soon they learned that Gary's entire heart was failing. Heart failure is a progressive condition—a person can live for years while his heart slowly gives out. There was a narrow window of time. A course of study had presented itself.

Gary was a plumber, and Timms's mother, Karen, was a high-school science assistant. Theirs was a tinkering, experimenting household; as a kid, Timms and his father had spent countless afternoons in the back yard building an elaborate system of fountains, ponds, and waterfalls. It was only natural that he and his dad would work together on a heart. They bought tubes, pipes, and valves at the hardware store and, in their garage, constructed a crude approximation of the circulatory system. Timms started reading about the history of the artificial heart. The first human implantation had been done in 1969, by a surgeon named Denton Cooley, of the Texas Heart Institute, in Houston. The patient, Haskell Karp, had been sustained for sixty-four hours—a great success, considering that his heart had been cut out of his chest. Engineers felt sure that, within a few years, they'd have the problem licked.

From there, however, the story became uncertain, even contentious. It was hard to design a small, implantable device that could beat thirty-five million times annually, pumping two thousand gallons of blood each day, for years on end. In the following decades, patients survived for days, months, even years on various kinds of artificial hearts, but their quality of life was often poor.

Reviewing the designs, Timms saw that many had taken shape in the nineteen-sixties, seventies, and eighties. He thought that improving them substantially should be straightforward. In the past, most artificial hearts had been made of flexible plastic; he'd create one from durable titanium. Their pumps had often been driven pneumatically, by air pushed into the body through tubes; he'd use an electromagnetic motor. Most crucially, where traditional artificial hearts had been "pulsatile"—they squeezed blood rhythmically out of artificial ventricles—his would move blood in a continuous flow: instead of beating, it would *whoosh*. In a lab notebook, he sketched a possible heart. Blood would flow into a small chamber with a spinning metal disk at its center; the disk, like a propeller, would push blood outward into the lungs and the rest of the body. It was a clever, parsimonious design that, instead of seeking to emulate the biological heart, completely reimagined it.

In their garage, he and his dad built a prototype. Made of clear plastic, it successfully moved water through their mock circulatory system, in which tiny beads served as blood cells. But there was a problem—a spot beneath the rotating disk where the currents stalled and the beads got stuck. This eddy was dangerous; blood cells that hang around together tend to coagulate, creating clots that can cause strokes. Over Skype, Timms talked with a researcher in Japan who worked on the magnetic-levitation systems used in high-speed trains. They decided that stronger magnets could be used to suspend the disk away from the walls of the heart, so that blood could flow around it more easily. This "maglev" approach would also eliminate wear and tear: none of the parts would touch.

Timms was still a graduate student when he finagled a meeting with some cardiologists at the Brisbane hospital where his father was receiving treatment. He pulled the plastic pump out of his backpack and explained how a heart based on his design would function. One doctor, incredulous, walked out of the meeting. Another secured Timms a small stipend and a room in the basement. By 2004, while Gary was recovering from valve-replacement surgery upstairs, Timms was working on prototypes downstairs. Soon he used one to keep a sheep alive for a couple of hours. Like the artificial-heart engineers of the past, he anticipated that further progress would come quickly.

Today, more than a decade and a half later, Timms's company, Bivacor, has an engineering office in Cerritos, a suburb of Los Angeles. About a dozen engineers work in a building surrounded by palm trees and flowering hedges. The Bivacor and human hearts work on entirely different principles. A human heart has two distinct sides. Blood first loops from the smaller, right side to the lungs and back, so that its oxygen can be replenished; it then crosses over to the larger, stronger left side, which pumps it forcefully into the body. The Bivacor heart is one combined chamber. It sends blood in two directions using its spinning disk, or "rotor," which has two differently contoured sides, each shaped to create the appropriate level of blood pressure. Where the heart of a healthy adult beats anywhere between sixty and a hundred times a minute, the Bivacor spins at between sixteen hundred and twenty-four hundred r.p.m.

Bivacor is in a transitional stage. It has never sold a product and is still run entirely on venture capital, angel investment, and government grants. Its hearts have been implanted in sheep and calves, which have survived for months, occasionally jogging on treadmills; it's preparing to submit an application to the Food and Drug Administration for permission to perform human implantations. To cross the animal-human threshold is to enter a harsh regulatory environment. In the early days of artificial-heart research, a team could implant a device in a dying person on an emergency basis - as a last-ditch effort to save his life - and see how it functioned. Ethicists were uneasy, but progress was swift. Today, such experimentation is prohibited: a heart's design must be locked in place and approved before a clinical trial can begin; the trial may take years, and, if it reveals that the heart isn't good enough, the process must start again. Bivacor is currently deciding which features will be included in the clinical trial of its heart. A wrong decision would likely sink the company; almost certainly, there wouldn't be a second attempt on the summit.

1. Daniel Timms and his father had a crude approximation of the human circulatory system built after the latter suffered a heart attack. ____
2. The first artificial heart surgery was a great success but it lasted sixty-four hours. ____
3. Having reviewed the existing artificial heart designs, Daniel regarded improving them as an easy task. ____
4. Compared to other improvements he made, the fact that traditional artificial hearts had squeezed blood rhythmically out of artificial ventricles while Daniel's would move blood in a continuous flow wasn't of great importance. ____
5. The Brisbane hospital doctors were unanimous that Daniel's was a great idea. ____
6. The Bivacor and the human heart work in a pretty similar manner. ____
7. The human heartbeat rate and that of the Bivacor are comparable. ____
8. According to the text the Bivacor has never been implanted in a dying person. ____

How to Build an Artificial Heart - PART 2:

Task 2. Reading comprehension

Fill in the gaps with the sentences below the text. There are two extra sentences that you don't need to use. Put a letter from A to J in the numbered spaces from 1 to 8.

Timms, trim and sandy-haired, is now forty-two. Since his days in Brisbane, he has devoted almost all of his working life to the heart, moving to Japan, Germany, Taiwan, and Houston to work with particular surgeons or engineers. **(1)** ________ Wearing jeans, running shoes, and a rumpled dress shirt unbuttoned to the third button, he led me into a back room where half a dozen prototype hearts had been operating continuously for as long as sixteen months. "It's really important to show that they never, ever stop," he said, above the hum of moving water. Timms himself looked as if he hadn't slept properly in a couple of decades.

On our way out of the lab, we passed a conference room where an engineer was discussing, on video chat, how the Bivacor could be tested before implantation: "Your thumb goes on the left inlet port, and you're going to very gently push," she said. In Timms's office, the furniture might have belonged in a home study. (It was a gift from an early investor—the owner of a Houston furniture store.) A pressed shirt haunted a hanger on the wall, and a road bike leaned in one corner.

From his creaky desk chair, Timms recalled driving his father to the hospital, in 2006. **(2)** ________ "It was backing the blood flow up into the left side of his heart and into his lungs." Timms mimed the buildup with his hands, tracing a path from his left breast to his sternum and up his neck—the blood piling up, like water struggling to navigate a drain. "That's when you get edema," he said. "You cough up blood because it's transferring across the pulmonary membrane."

Two weeks later, Timms was in Germany, meeting with pump engineers, when he learned that his father had taken a decisive turn for the worse. **(3)** ________ "He was in I.C.U., with the trach and everything," Timms said. "His dying made me even more resolute. It was, like, That's it. We're gonna do it, at any cost."

I asked Timms if, two decades ago, he'd actually believed that he might invent an artificial heart in time to save his father. He swivelled back and forth, nodding. "At that stage, I was, like, if there was a device that could be implanted for him, then maybe he could stay around for another five or ten years—for the time when I got married and had kids. He could experience that. That was the philosophy then. Just another five or ten years of life." He laughed. "That still hasn't happened," he said, referring to marriage and children. He gestured around his office. "I've been stuck on *this*."

Before the heart was replaceable, it was untouchable—a forbidding marker of the surgical frontier. **(4)** ________ . In the first half of the twentieth century, anesthesia made surgeons braver; they began darting in to mend arteries and valves while the heart was still beating. They tried cooling patients to hypothermic levels, then operating on their hearts quickly, while they were stopped. It wasn't until the 1950s, with advances in the heart-lung machine, that open-heart surgery became routine. Blood travels out of the body and into the machine, bypassing the heart and lungs, and giving surgeons access to a still and bloodless heart, which they can treat almost like an ordinary muscle.

Early heart-lung machines were desk-size, and could be used safely only for short intervals; still, they made an artificial heart seem both desirable and feasible. **(5)** ________ More people were living into their sixties and seventies, when hearts start to deteriorate; by mid-century, as many as forty per cent of American deaths were caused by heart disease. These statistics were of grave concern to policymakers. In 1948, Congress—a group of aging men—passed the National Heart Act, initiating a decades-long expansion in federal funding for cardiological research.

It was the Apollo era, and the artificial heart seemed like an inner moon shot to rival the outer one. **(6) ________** Structured like a NASA project, it awarded grants and contracts to teams of engineers who competed to develop the best valve, pump, or power source; a few groups experimented, unsuccessfully, with nuclear-powered hearts.

The true difficulty of the challenge quickly became apparent. **(7) _______** He landed on a clever approach: instead of replacing the heart, he would install a pump just outside it, compensating for the failing heart and perhaps giving it time to heal. His prototype pumps were tested on dogs, and by 1966 he was ready to implant them in people. But the first human patient to receive one died after bleeding extensively; the second—a sixty-three-year-old bedridden diabetic woman who'd had two heart attacks—survived for twelve days but died after a series of strokes. **(8) _______** He had encountered an obstacle that would become known as "hemocompatibility." Subjected to too much force or pressure, blood cells can tear apart; caught in eddies or crevices, they can stick together; on textured surfaces, they can catch and form tangled beds that narrow passages. Kantrowitz's devices mangled the blood they pumped, and, as the "blood damage" mounted, the consequences spread.

(...)

A. Nineteenth-century physicians thought that, when it came to surgery, the heart was "the limit set by nature."

B. In 1964, the National Institutes of Health launched the Artificial Heart Program, a multimillion-dollar engineering effort that aimed to put hearts into patients by the end of the decade.

C. So did several other converging trends.

D. When he retrieved his pump and opened it up, he found clots.

E. At Maimonides hospital, in Brooklyn, Adrian Kantrowitz, a surgeon-inventor who had helped perfect the pacemaker and the heart-lung machine, began working on pump designs.

F. Gary's valve-replacement surgery had helped him regain heart function, but only temporarily. "He'd got a clot on his mechanical valve," Timms said.

G. In the nineteenth century they just carried the patient into the operating room and laid them on a wooden table.

H. He flew home immediately, but arrived too late for a final conversation with his dad.

I. Quiet and alert, he is the opposite of a ted talker: he prefers not to tell people what he does for a living, lest the ensuing conversation tempt him to hype a project that has blown every deadline.

J. Having this kind of artificial heart would turn back time.

Based on an article published in the New Yorker on March 8, 2021

PART 3 - Use of English

TASK 1

Choose the best option.

1. I shouldn't have gone _______________ my promise to tell nobody about this.

   a. back into b. back on c. forward to d. forward with

2. It's just stopped raining! Why not _____________ for a romantic walk in the park, Becca?

   a. going b. to go c. go d. to going.

3. The student's rude remark resulted _____________ asked to leave the office.

   a. with his having b. in her having c. in her being d. to his being

4. All that they say should be taken with a _____________ of salt.

   a. pinch b. punch c. patch d. porch

5. She is too _____________ person to answer you back.

   a. polite b. a polite c. polite a d. the polite

6. The children have eaten all the soup, _____________ is very unusual.

   a. that b. what c. which d. so

7. Despite there _____________ a lot of opposition, there are many who think as we do.

   a. is b. is being c. being d. are being

8. *Interstellar* is a very good film and it will surely live _____________ your expectations.

   a. down to b. down on c. up on d. up to

9. If you _____________ at the party, why didn't you manage to have a word with her?

   a. were b. are c. had been d. would have been

10. The car _____________ exhaust pipe is broken, should be repaired.

    a. whose b. which c. where d. that

TASK 2

For each of the sentences below, write a new sentence as similar as possible in meaning to the original sentence.

1. Sally doesn't like it when people treat her like a child.

Sally resents ____

2. The washing machine has been mended twice by a mechanic.

I have ____

3. There was a rumour that the President had won the election unfairly.

The President was ____

4. If she needs guidance, let her consult Professor Smith.

Should ____

5. She had only just arrived at the airport when the plane landed.

No sooner ____

6. Scientists believe the probe reached the surface of the planet on March 8th.

The probe is ____

7. The weather was so nice that we went for a picnic

It was such ____

8. Even though she is ill, she still plays chess professionally.

Despite ____

9. You booked the flight, which wasn't necessary.

You needn't ____

10. I am sure the police are questioning Mt Robertson now.

The police must ____

Task 3. Choose the correct option, out of the three provided in square brackets, to fill in the spaces.

e.g.: Tom is a pain in the _____ [head, guts, **neck**]. I don't know how Kate puts up with him.

1. I'm afraid she's got hold of the wrong end of the ____ [weight, stick, sword]. Let me explain it to you.
2. There's no need to make such ____ [heavy, nasty, poor] weather of this assignment. It's not that hard at all.
3. Bob's car has certainly seen better ____ [times, years, days] but it serves its purpose.
4. Dad has been feeling a bit under the ____ [clouds, weather, rain] for the last few days, we need to cheer him up.

5. The children were as good as ____ [gold, silver, copper] all weekend. Why don't we take them to the cinema as a treat.
6. Find some nice dry ____ [pollen, buds, twigs] and we'll try to start a bonfire.
7. The boat had a glass bottom so we could see ____ [schools, shoals, packs] of colourful fish swimming below us.
8. She was attacked by a ____ [pack, swarm, herd] of bees and got badly stung.
9. The cat has ruined that chair with its sharp ____ [claws, nails, thorns].
10. John trained his horse to stamp its ____ [mane, horn, hoof] once for yes and twice for no.

Task 4. Complete each sentence using an adjective from the box. There is one extra adjective you do not need to use.

casual	***close***	***complete***	***cordial***	***moral***	***social***	***stable***

1. I don't know her well – we're just _____________ acquaintances.
2. For many people the Internet plays an important role in developing new _____________ networks.
3. Jack Whitley was a ____________ confidant of the Prime Minister in the 1980s.
4. Their relationship hasn't been very ____________ . They've broken up and got back together again several times.
5. Thanks for all the _____________ support you gave me what I needed it.
6. Despite their political differences the two leaders have always enjoyed _____________ relations.

PART 4. Culture

Task 1. Circle the correct answer.

1. What is the biggest state in the USA?
   a) Texas
   b) California
   c) Alaska

2. What is the name of the oldest national park in the USA?
   a) Yosemite
   b) Grand Canyon
   c) Yellowstone

3. Queen Elizabeth II's husband, Prince Philip was:
   a) Duke of Sussex
   b) Duke of Edinburgh
   c) Duke of Cambridge

4. The city that is the seat of the archbishops, heads of the Church of England is:
   a) Canterbury
   b) London
   c) Cadbury

5. What is a traditional British dish called:
   a) Plum pie
   b) Turkey
   c) Beef Wellington

6. The red cross on a white background is the flag of:
   a) Wales
   b) England
   c) Scotland

7. The Statue of Liberty is in:
   a) New York
   b) Washington
   c) Philadelphia

8. Who was the first president of the USA:
   a) George Washington
   b) Thomas Jefferson
   c) Abraham Lincoln

9. What holiday is celebrated on the fourth Thursday of November in the USA?
   a) Guy Fawkes Night
   b) Thanksgiving Day
   c) Memorial Day

10. When was Queen Elizabeth II’s birthday officially celebrated?
   a) in April
   b) in August
   c) in June
