KYS Department of English

Quarter II Examination

Student's name: .....
Teacher's name: .....
Sex: Male Female:
Date: ...../...../.....
Class: ...../Grade: 8
Time Allowance: 60mn

Deadly Snake Hunted for Lifesaving Venom

In Australia, life-threatening poisonous animals have always posed a hazard to humans. But some of the most dangerous also act as lifesavers. Such is the case with the death adder, a snake that's essential to the production of antivenins—drugs that can save the lives of people bitten by snakes.

For more than 50 years, the staff of the Australian Reptile Park has raised and milked[1] hundreds of venomous spiders and snakes—including the death adder—for their poisonous venom in order to create life-saving medicines.

The work is time-consuming and dangerous. Hundreds of milkings are necessary to create a single dose of antivenin. It's a difficult job, but one that greatly benefits people. As John Weigel, director of the Australian Reptile Park, notes, the program helps save hundreds of lives each year. "Producing the venom that's used to make the antivenin, that's part of the soul of us, part of our heritage and what we do. We've done it for 55 years and it saves perhaps 280 to 300 lives a year. That's something we feel really good about." And thanks to the widespread availability of effective antivenins, snakebite fatalities in Australia have become rare in recent decades.

The nation's antivenin program suffered a setback,[2] however, after a fire raged through the Australian Reptile Park. The blaze destroyed much of the park and killed most of its captive animals—including snakes used in the venom-milking program. Since this disaster, staff members have traveled Australia to collect venomous snakes in order to rebuild the program.

Death adder venom in particular remains in short supply. Snake wranglers[3] are looking all over Australia for these hard-to-find reptiles. "We need something like 50 to 60 death adders to milk every two weeks in order to provide a sufficient quantity of venom," Weigel estimated.

Like that of other snakes, death adder venom is a form of saliva.[4] When a venomous snake bites, it injects venom into its victim through hollow fangs—though this does not happen with every bite. In the milking process, a snake is prompted to bite through a rubber covering stretched over a glass container. Venom is collected in the container and then later dried, weighed, and packaged by staff members, who must wear protective masks.

[1] To **milk** is to remove liquid from an animal, such as milk from a cow.
[2] A **setback** is a problem or an obstacle.
[3] Snake **wranglers** handle or look for snakes.
[4] **Saliva** is liquid formed in the mouth.

I. Indicate the statement whether it's T (true) or F (false)

1. The word "hazard" (underlined) in the 1st paragraph means "danger." _____
2. According to the passage, death adder venom is used to make drugs to treat various diseases. _____
3. Snakes are not the only type of animal milked for venom at the Australian Reptile Park. _____
4. According to the passage, hundreds of snakes are needed to create one dose of antivenin. _____

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5. According to the passage, the staff of the Australian Reptile Park have difficult, dangerous jobs, but they are willing to perform them because of the high salaries they are paid.
6. The word "blaze" (underlined) in the 4th paragraph means "storm."_____
7. The number of deaths from snakebites in Australia has decreased in recent decades. _ _____
8. It can be inferred from the last sentence that the venom can be dangerous to people if they breathe it in._____

Young Chimp[1] Outscores College Students in Memory Test

Japanese researchers had young chimpanzees compete against human adults in two tests of short-term memory and, overall, the chimps won.

This challenges the belief of many people, including a number of scientists, that "humans are superior to chimpanzees in all cognitive[2] functions," said researcher Tetsuro Matsuzawa of Kyoto University. "No one can imagine that chimpanzees—young chimpanzees at the age of five—have a better performance in a memory task than humans," he said in a statement.

The Tests

One memory test included three five-year-old chimps who were taught the order of Arabic numerals 1 through 9, and a dozen human volunteers. Participants saw nine numbers displayed on a computer screen. **(A)** When they touched the first number, the other eight turned into white squares. The test was to touch all these squares in the order of the numbers that used to be there.

Results showed that the chimps, while no more accurate than the people, could do this faster. One chimp, Ayumu, did the best. **(B)** Researchers included him and nine college students in a second test. This time, five numbers flashed on the screen only briefly before they were replaced by white squares. The challenge, again, was to touch these squares in the proper sequence.

When the numbers were displayed for about seven-tenths of a second, Ayumu and the college students were both able to do this correctly about 80 percent of the time. But when the numbers were displayed for just four-tenths or two-tenths of a second, the chimp was the champion.

The briefer of those times is too short to allow a look around the screen, and in those tests Ayumu still scored about 80 percent, while the humans' scores dropped to 40 percent. That indicates Ayumu was better at remembering the whole pattern of numbers at a glance, the researchers wrote.

What's Going on Here?

Even with six months of training, three students failed to catch up to the three young chimps, Matsuzawa said in an email. **(C)** He thinks two factors gave his chimps the edge. For one thing, he believes human ancestors gave up much of this skill over time to make room in the brain for developing language abilities. The second factor is the youth of Ayumu and the other chimps in the study. The memory for images that is needed for the tests resembles a skill found in children, but which is gradually lost with age.

(D) In fact, the young chimps performed better than older chimps in the new study. (Ayumu's mom did even worse than the college students!) So, the next logical step is to give Ayumu some real competition on these tests: little kids.

[1] **Chimp** is an abbreviation for chimpanzee, an African animal that looks like a large monkey.
[2] **Cognitive behavior** relates to how we think, understand, and learn.

9. How many chimps took part in the first test?

a. 3
b. 5
c. 9
d. 12

10. What were participants required to do in the first test?

a. Put white squares in numerical order, from one to nine.

b. Remember the order of a dozen squares shown on the screen.
c. View nine squares and reproduce them in the right order.
d. Touch eight numbered squares as quickly as possible.

11. Were the chimps more accurate than the people in the first test?

a. Yes, the chimps were more accurate.
b. Ayumu was the only accurate participant.
c. No, the people were more accurate.
d. People and chimps were about the same.

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12. Which underlined sentence shows a cause and effect?

a. Sentence A
b. Sentence B
c. Sentence C
d. Sentence D

13. What does the phrase "at a glance" (underlined) in the 6th paragraph mean?

a. numbers in a pattern
b. a very quick look
c. a long-term memory
d. a very short time

14. Which of these is believed to be a factor in the chimp's success?

a. training
b. ancestors
c. language
d. age

Section II IELTs

Time travel took a small step away from science fiction and toward science recently when physicists discovered that sub-atomic particles known as neutrinos – progeny of the sun's radioactive debris – can exceed the speed of light. The unassuming particle – it is electrically neutral, small but with a "non-zero mass" and able to penetrate the human form undetected – is on its way to becoming a rock star of the scientific world.

Researchers from the European Organisation for Nuclear Research (CERN) in Geneva sent the neutrinos hurtling through an underground corridor toward their colleagues at the Oscillation Project with Emulsion-Tracing Apparatus (OPERA) team 730 kilometres away in Gran Sasso, Italy. The neutrinos arrived promptly – so promptly, in fact, that they triggered what scientists are calling the unthinkable – that everything they have learnt, known or taught stemming from the last one hundred years of the physics discipline may need to be reconsidered.

The issue at stake is a tiny segment of time – precisely sixty nanoseconds (which is sixty billionths of a second). This is how much faster than the speed of light the neutrinos managed to go in their underground travels and at a consistent rate (15,000 neutrinos were sent over three years). Even allowing for a margin of error of ten billionths of a second, this stands as proof that it is possible to race against light and win. The duration of the experiment also accounted for and ruled out any possible lunar effects or tidal bulges in the earth's crust.

Nevertheless, there's plenty of reason to remain sceptical. According to Harvard University science historian Peter Galison, Einstein's relativity theory has been "pushed harder than any theory in the history of the physical sciences". Yet each prior challenge has come to no avail, and relativity has so far refused to buckle.

So is time travel just around the corner? The prospect has certainly been wrenched much closer to the realm of possibility now that a major physical hurdle – the speed of light – has been cleared. If particles can travel faster than light, in theory travelling back in time is possible. How anyone harnesses that to some kind of helpful end is far beyond the scope of any modern technologies, however, and will be left to future generations to explore.

Certainly, any prospective time travellers may have to overcome more physical and logical hurdles than merely overtaking the speed of light. One such problem, posited by René Barjavel in his 1943 text Le Voyageur Imprudent is the so-called grandfather paradox. Barjavel theorised that, if it were possible to go back in time, a time traveller could potentially kill his own grandfather. If this were to happen, however, the time traveller himself would not be born, which is already known to be true. In other words, there is a paradox in circumventing an already known future; time travel is able to facilitate past actions that mean time travel itself cannot occur.

Other possible routes have been offered, though. For Igor Novikov, astrophysicist behind the 1980s' theorem known as the self-consistency principle, time travel is possible within certain boundaries. Novikov argued that any event causing a paradox would have zero probability. It would be possible, however, to "affect" rather than "change" historical outcomes if travellers avoided all inconsistencies. Averting the sinking of the Titanic, for example, would revoke any future imperative to stop it from sinking – it would be impossible. Saving selected passengers from the water and replacing them with realistic corpses would not be impossible, however, as the historical record would not be altered in any way.

A further possibility is that of parallel universes. Popularised by Bryce Seligman DeWitt in the 1960s (from the seminal formulation of Hugh Everett), the many-worlds interpretation holds that an alternative pathway for every conceivable occurrence actually exists. If we were to send someone back in time, we might therefore expect never to see him again – any alterations would divert that person down a new historical trajectory.

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A final hypothesis, one of unidentified provenance, reroutes itself quite efficiently around the grandfather paradox. Non-existence theory suggests exactly that – a person would quite simply never exist if they altered their ancestry in ways that obstructed their own birth. They would still exist in person upon returning to the present, but any chain reactions associated with their actions would not be registered. Their "historical identity" would be gone.

So, will humans one day step across the same boundary that the neutrinos have? World-renowned astrophysicist Stephen Hawking believes that once spaceships can exceed the speed of light, humans could feasibly travel millions of years into the future in order to repopulate earth in the event of a forthcoming apocalypse. This is because, as the spaceships accelerate into the future, time would slow down around them (Hawking concedes that bygone eras are off limits – this would violate the fundamental rule that cause comes before effect).

Hawking is therefore reserved yet optimistic. "Time travel was once considered scientific heresy, and I used to avoid talking about it for fear of being labelled a crank. These days I'm not so cautious."

Write T(True) , F(False) or NG (not given)

1. It is unclear where neutrinos come from. _____

2. Neutrinos can pass through a person's body without causing harm._____

3. It took scientists between 50-70 nanoseconds to send the neutrinos from Geneva to Italy._____

4. Researchers accounted for effects the moon might have had on the experiment._____

5. The theory of relativity has often been called into question unsuccessfully._____

6. This experiment could soon lead to some practical uses for time travel._____

Question 34-39

Complete the table below.

Choose NO MORE THAN THREE WORDS from the passage for each answer.

Original Theorist	Theory	Principle
René Barjavel	Grandfather paradox	Time travel would allow for 34 ..... that would actually make time travel impossible.
Igor Novikov	Self-consistency principle	It is only possible to alter history in ways that result in no 35 ..... .
36	Many-worlds interpretation	Each possible event has an 37 ....., so a time traveller changing the past would simply end up in a different branch of history than the one he left.
Unknown	38	If a time traveller changed the past to prevent his future life, he would not have a 39 ..... as the person never existed.

34._____

35._____

36. _____

37_____

38. _____

39. _____

Choose the correct letter, A, B, C or D.

Stephen Hawking has stated that

A. Human time travel is theoretically possible, but is unlikely to ever actually occur.

B. Human time travel might be possible, but only moving backward in time.

C. Human time travel might be possible, but only moving forward in time.

D. All time travel is impossible

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