Unit 7. ARTIFICIAL INTELLIGENCE

PART 3: READING

I. Fill each of the numbered blanks in the following passage. Use only one word in each space.

ability	*adapt*	*interpret*	*arise*	*trained*
navigate	*artificial*	*range*	*diagnosis*	*system*

APPLICATIONS AND USERS OF ARTIFICIAL INTELLIGENCE

A neural network is an electronic model of the brain consisting of many interconnected simple processors. This imitates how your actual brain works. Applications of (1) …………………. neural systems consist of vision systems, speech recognition, handwriting recognition and intelligent robots.

Artificial Intelligence is used to (2) …………………. and understand an image in industrial, military use, or in satellite photo interpretation. Police use the computer to come up with a photo fit drawing of a criminal, and doctors use the system to make (3) …………………. of patient.

Speech recognition is the (4) …………………. of the computer to understand a human talking to it. There are many problems associated with this - humans have different accents, slang words, noise in the background, feeling poorly (flu, cold, etc.). This means that the computer has to be (5) …………………. to recognize the voice of the human. Honda CRV has the following (6) …………………. of voice commands that the driver can use while driving - using the mobile phone, turning the temperature up or down, turning the air conditioner on or off, asking the car to (7) …………………. using the satellite navigation system, turning the radio on or off or up or down.

An intelligent robot has many different sensors, large processors and a large memory in order to show that they have intelligence. The robots will learn from their mistakes and be able to (8) …………………. to any new situation that may (9) …………………. An intelligent robot can be programmed with its own expert (10) ……………………. For example, a factory is blocked with fallen boxes, then an intelligent robot will remember this and take a different route.

II. Choose the word or phrase among A, B, C or D that best fits the blank space in the following passage.

We won't have robot doctors for a long time, (1) _____ the human doctors we have now are beginning to learn on specialized artificial intelligence to help save time.

Google DeepMind has just announced a partnership with University College London Hospital(UCLH) which will explore (2) _____ artificial intelligence to treat patients with head and neck cancers. The goal is to develop tools to automatically identify cancerous cells for radiology machines.

Currently, radiologists employ a manual process, called image (3) _____, to make CT and MRI scans and use them to create a map of the patient's anatomy with clear guidelines of where to direct the (4) _____. Avoiding healthy areas of the head and neck requires that map to be extraordinarily detailed; typically it takes four hours to create. Google believes it can do the same job or better in one hour.

DeepMind, Google's research arm, works primarily in deep learning, a form of artificial intelligence that learns to identify patterns from looking at large amount of data. In this case, DeepMind researchers will

(5) ____ access to anonymized radiology scans from up to 700 former UCLH patients, and then feed them into (6) ____ that would process the scans to learn the visual difference between healthy and cancerous tissue.

The partnership will (7) ____ researchers to train their algorithms with highly-specialized, high-quality data, which theoretically will enable the algorithm to (8) ____ at a higher rate of success than if they had been using publicly available scans.

For those concerned about machines making health (9) ____ decisions, UCLH made it clear in a statement to the newspaper Guardian that clinicians will be in complete control of diagnoses and treatment.

DeepMind isn't the first care. Samsung Medison, the South Korean (10) ____ company's medical device arm, recently released an ultrasound machine that uses deep learning to quickly recommend whether breast tissue is cancerous or benign. The machine's algorithm was trained on 9,000 breast tissue scans, and is pending FDA approval in the US.

1. A. what	B. why	C. when	D. but
2. A. using	B. translating	C. expressing	D. performing
3. A. judgment	B. discovery	C. segmentation	D. identification
4. A. intelligence	B. radiation	C. level	D. strength
5. A. grow	B. ask	C. repair	D. obtain
6. A. limit	B. distance	C. algorithms	D. arrangement
7. A. move	B. allow	C. sail	D. stop
8. A. perform	B. access	C. adopt	D. change
9. A. develop	B. exist	C. rise	D. care
10. A. way	B. method	C. technology	D. organization

III. Read the following passage and choose among A, B, C or D the correct answer to each of the questions from 1 to 6.

FIRST TIME IN THE AIR

When John Mills was going to fly in an aero plane for the first time, he was frightened. He did not like the idea of being thousands of feet up in the air. "I also didn't like the fact that I wouldn't be in control," says John.

"I'm a terrible passenger in the car. When somebody else is driving, I tell them what to so. It drives everybody crazy."

However John couldn't avoid flying any longer. It was the only way he could visit his grandchildren in Canada.

"I had made up my mind that I was going to do it, I couldn't let my son, his wife and their three children travel all the way here to visit me. It would be so expensive for them and I know Tom's business isn't doing so well at the moment - it would also be tiring for the children - it's a nine-hour flight!" he says.

To get ready for the flight John did lots of reading about aero planes. When he booked his seat, he was

told that he would be flying on a Boeing 747, which is better known as a jumbo jet. "I needed to know as much as possible before getting in that plane. I suppose it was a way of making myself feel better. The Boeing 747 is the largest passenger aircraft in the world at the moment. The first one flew on February 9th 1969 in the USA. It can carry up to 524 passengers and 3.400 pieces of luggage. The fuel for aero planes is kept in the wings and the 747 is wings are so big that they can carry enough fuel for an average car to be able to travel 16,000 kilometers a year for 70 years. Isn't that unbelievable? Even though I had discovered all this very interesting information about the jumbo, when I saw it for the first time, just before I was going to travel to Canada, I still couldn't believe that something so enormous was going to get up in the air and fly. I was even more impressed when I saw how big it was inside with hundreds of people!"

The biggest surprise of all for John was the flight itself. "The take-off itself was much smoother than I expected although I was still quite scared until we were in the air. In the end, I managed to relax, enjoy the food and watch one of the movies and the view from the window was spectacular. I even managed to sleep for a while! Of course," continues John, "the best reward of all was when I arrived in Canada and saw my son and his family, particularly my beautiful grandchildren. Suddenly, I felt so silly about all the years when I couldn't even think of getting on a plane. I had let my fear of living stop me from seeing the people I love most in the world. I can visit my son and family as often as I like now!"

1. Why did John Mills fly in an aero plane?

    A. He wanted to go on holiday.   B. He wanted to try it.

    C. He wanted to see his family.   D. He had to travel on business.

2. Why did John read about aero plane?

    A. He wanted to know how they work.   B. It was his hobby

    C. It made him feel safer.   D. He had found a book on them.

3. What happened when he saw the jumbo jet for the first time?

    A. He felt much safer.   B. He liked the shape of it.

    C. He couldn't believe how big it was.   D. He thought the wings were very small

4. How did John feel when the aero plane was taking off?

    A. excited   B. happy   C. sad   D. frightened

5. What surprised John most about the flight?

    A. That he liked the food.   B. That he was able to sleep.

    C. That there was a movie being shown.   D. That the view was good.

6. How did John feel about his fears in the end?

    A. He thought he had wasted time being afraid.

    B. He realized it was okay to be afraid.

    C. He hoped his grandchildren weren't afraid of flying.

    D. He realized that being afraid kept him safe.

IV. Read the following passage and choose among A, B, C or D the correct answer to each of the questions from 1 to 8.

The first two decades of this century were dominated by the microbe hunters. These hunters had tracked down one after another of the microbes responsible for the most dreaded scourges of many centuries: tuberculosis, cholera, diphtheria. But there remained some terrible diseases for which no microbe could be **incriminated**: scurvy, pellagra, rickets, beriberi. Then it was discovered that these diseases were caused by the lack of vitamins, a trace substance in the diet. The diseases could be prevented or cured by consuming foods that contained the vitamins. And so in the decades of the 1920's and 1930's, nutrition became a science and the vitamin hunters replaced the microbe hunters.

In the 1940's and 1950's, biochemists **strived** to learn why each of the vitamins was essential for health. They discovered that key enzymes in metabolism depend on one or another of the vitamins as coenzymes to perform the chemistry that provides cells with energy for growth and function. Now, these enzyme hunters occupied center stage.

You are aware that the enzyme hunters have been replaced by a new breed of hunters who are tracking genes - the blueprints for each of the enzymes - and are discovering the defective genes that cause inherited diseases - diabetes, cystic fibrosis. These gene hunters, or genetic engineers, use recombinant DNA technology to identify and clone genes and introduce them into bacterial cells and plants to create factories for the massive production of hormones and vaccines for medicine and for better crops for agriculture. Biotechnology has become a multi billion dollar industry.

In view of the inexorable progress in science, we can expect that the gene hunters will be replaced in the spotlight. When and by whom? Which kind of hunter will dominate the scene in the last decade of our waning century and in the early decades of the next? I wonder whether the hunters who will **occupy the spotlight** will be neurobiologists who apply the techniques of the enzyme and gene hunters to the funtions of the brain. What to call them? The head hunters. I will return to them later.

1. What is the main topic of the passage?

    A. The microbe hunters.   B. The potential of genetic engineering.

    C. The progress of modern medical research.   D. The discovery of enzymes.

2. The word "**incriminated**" in the first paragraph is closest in meaning to _____.

    A. blamed   B. eliminated   C. investigated   D. produced

3. Which of the following can be cured by a change in diet?

    A. Tuberculosis   B. Cholera   C. Cystique fibroses   D. Pell Agra

4. The word "**strived**" in the second paragraph is closest in meaning to _____.

    A. studied   B. tried   C. experimented   D. failed

5. How do vitamins influence health?

    A. They protect the body from microbes.

B. They are broken down by cells to produce energy.

C. They keep food from spoiling.

D. They are necessary for some enzymes to function.

6. The phrase "**occupy the spotlight**" in the last paragraph is closest in meaning to ____.

    A. go to furthest   B. lighten to load

    C. conquer territory   D. receive the most attention

7. The author implies that the most important medical research topic of the future will be ____.

    A. the functions of the brain   B. inherited diseases

    C. the operation of vitamins   D. the structure of genes

8. With which of the following statements would the author be most likely to agree?

    A. Most diseases are caused by defective genes.

    B. The focus of medical research will change in the next two decades.

    C. Medical research throughout the twentieth century has been dominated by microbe hunters.

    D. Medical breakthroughs often depend on luck.