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Unit 7. ARTIFICIAL INTELLIGENCE

LANGUAGE FOCUS

Phonetics

Sentence stress (stress on the most important words in the sentence):

I can't decide yet if I will join your team this summer.

Grammar

The active and passive causatives

The chef wanted the other cooks to prepare all the ingredients before he cooked the dish.

→ The chef got all the ingredients prepared before cooking the dish.

Vocabulary

Words and phrases related to artificial intelligence:

Automated, cyber-attack, interaction, ...

I. Mark the letter A, B, C, or D to indicate the word whose underlined part differs from the other three in pronunciation in each of the following questions.

1. A. artificial	B. remarkable	C. smartphone	D. carrot
2. A. robot	B. controller	C. operator	D. global
3. A. intelligent	B. invention	C. image	D. survive
4. A. automated	B. controlled	C. invented	D. substituted
5. A. advances	B. diseases	C. escape	D. watches

II. Mark the letter A, B, C or D to indicate the word that differs from the other three in the position of primary stress in each of the following questions.

1. A. intelligence	B. diversity	C. automated	D. exterminate
2. A. navigation	B. application	C. incredible	D. artificial
3. A. faraway	B. combustion	C. attitude	D. dominant
4. A. hacker	B. implant	C. deplete	D. connect
5. A. resurrect	B . activate	C. talented	D. centralize

III. Mark the letter A, B, C, or D to indicate the underlined part that needs correction in each of the following sentences.

1. Artificial intelligence is also known for machine intelligence.
   A B C D
2. Artificial intelligence (AI) is the ability of a digital computer to perform tasks commonly associated with
   A B C
   intelligence beings.
   D
3. Psychologists generally do not characterize human intelligence by just one trait but by the combinations of
   A B C D
   many diverse abilities.
4. There are a number of different forms of learning as applied in artificial intelligence.
   A B C D
5. It is relatively easy to write computer program that seem able to respond fluently in a human language to
   A B C D
   questions and statements.

IV. Mark the letter A, B, C, or D to indicate the correct answer to each of the following sentences.

1. The earliest substantial work in the field of artificial intelligence was ____ in the mid-20th century by the British logician and computer pioneer Alan Mathison Turing.

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A. made B. done C. taken D. put

2. The first true Al programs had to await the ____ of stored-program electronic digital computers.

A. arrive B. arriving C. arrival D. arriver

3. ____ earliest successful Al program was written in 1951 by Christopher Strachey, later director of the Programming Research Group at the University of Oxford.

A. A B. An C. The D. That

4. The ability to reason logically is an important aspect of intelligence and has always been a major focus ____ Al research.

A. on B. about C. of D. at

5. Researchers at the Institute for New Generation Computer Technology in Tokyo have used PROLOG as the ____ for sophisticated logic programming languages.

A. basis B. bases C. basic D. basing

6. To cope with the bewildering ____ of the real world, scientists often ignore less relevant details.

A. complex B. complexion C. complexity D. complexions

7. Robots may be equipped ____ the equivalent of human senses such as vision, touch, and the ability to sense temperature.

A. by B. of C. with D. for

8. Nowadays, automobile manufacturers have industrial robots ____ human workers in factory operations.

A. replace B. to replace C. replacing D. replaced

9. As surgeons become more familiar with using robots for surgery, there will come a day when robots are used in ____ every hospital.

A. most B. mostly C. almost D. at most

10. Now gardeners find their job easier by getting the grass ____ by automatic lawn mowers.

A. cut B. to cut C. cutting D. cut

11. The Nanda Clocky is the alarm clock that gives users one chance to snooze before it drives away, ____ the user to get up and find it to turn off its alarm

A. forces B. to force C. forcing D. forced

12. Four years ago, the German conglomerate Siemens introduced a robot ____ to iron shirts using hot air.

A. design B. designs C. designing D. designed

13. ____ computers in the classroom certainly come with many benefits, there are also some disadvantages to keep in mind when incorporating this technology into lessons.

A. Despite B. But C. While D. However

14. Before computers were common in the classroom, teachers ____ in front of the room and talk endlessly about a subject.

A. would have to stand up B. will have to stand up

C. would have had to stand up D. will have had to stand up

15. ____, the more dependent we are on computer technologies to communicate, as well as, to create, share, and store information.

A. The more "automated" we become B. The more "automated" we have become

C. The more "automated" we became D. The more "automated" we had become

16. If computers become as smart as humans, ____?

A. would they do our jobs better than we can B. will they do our jobs better than we can

C. would they do our jobs better than we could D. will they do our jobs better than we could

17. Last month, we had our representatives ____ a conference on environmental pollution.

A. to attend B. attend C. attending D. attended

18. Global accountancy firm Deloitte has been hit in a ____ that compromised the data of a small number of its clients.

A. cyber-attack B. crisis C. battlefield D. network

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19. Robert and Cyber are talking with each other about robots. Complete the conversation.
Robert: "Do you think robots could ever control the world?" - Cyber: "____"

A. Oh, no. None of such a thing.
B. No need to ask, just help yourself.
C. Are you saying that?
D. It'll take a while, but I'm working on it.

20 Two students are talking with each other at a party. Complete the conversation.
A: "What year are you?" - B: "____"

A. I'm not sure about that.
B. I'm a stranger here.
C. I'm a junior. How about you?
D. I've finished my examinations.

21. Two friends meet on the first day at school. Complete the conversation.
A: "Hey John. I didn't know you were coming to this school." - B: "____. It's good to see you."

A. Oh, nice to meet you
B. Yeah, what a coincidence
C. That's life
D. Every now and then

22. At companies like Facebook, Amazon, Apple, Netflix and Google, they help to develop long-term plans and digital ____.

A. interacts B. interactive C. interactional D. interactions

23. The seeds of modern Al ____ by classical philosophers who attempted to describe the process of human thinking as the mechanical manipulation of symbols.

A. planted B. have planted C. were planted D. have been planted

24. The field of Artificial Intelligence research was founded at a workshop held ____ the campus of Dartmouth College during the summer of 1956.

A. in B. on C. by D. for

25. Investment and interest in Al boomed in the first decades of the 21st century, ____ machine learning was successfully applied to many problems in academia and industry.

A. while B. where C. which D. when

V. Mark the letter A, B, C, or D to indicate the word(s) CLOSEST in meaning to the underlined word(s) in each of the following sentences.

1. Robots are widely used in such industries as automobile manufacture to perform simple repetitive tasks.

A. do B. make C. deal D. take

2. Instead of replacing people, as some earlier industrial robots have, a collaborative robot, also known as a "cobot", is built to work alongside them.

A. helping each other
B. working together
C. combining with each other
D. befriending with each other

3. Electrolux introduced the Trilobite in 2001. Since then, the company has made 200 improvements to the vacuum, which relies on an ultrasound system to navigate around objects as it cleans.

A. understand how to do something
B. sail along the area of water
C. find which way to go
D. surfing the internet for something

4. The Litter-Robot addresses one of the downsides of owning a cat: cleaning its litter box. The device sifts through kitty litter, removing clumps automatically and storing them in a bag.

A. benefits B. interests C. concerns D. disadvantages

5. This type of artificial intelligence would not usurp human team members, but work with them as partners to tackle difficult challenges.

A. take someone else's power
B. criticize someone strongly
C. decide something officially
D. determine other's behaviors

VI. Mark the letter A, B, C, or D to indicate the sentence that is closest in meaning to each of the following sentences.

1. Artificial intelligence is based on the assumption that the process of human thought can be mechanized.

A. Thanks to the assumption that the process of human thought can be mechanized, artificial intelligence is basic.

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B. Artificial intelligence assumed that the process of human thought can be mechanized.

C. That the process of human thought can be mechanized is an assumption in artificial intelligence.

D. That the process of human thought can be mechanized is the assumption on which artificial is based.

2. An electronic brain refers to a large computing machine depending primarily on electronic devices for its operation.

A. An electronic brain depends on a large computing machine for its operations with electronic devices.

B. A large a large computing machine depending primarily on electronic devices for its operation is known as an electronic brain.

C. A large computing machine depends on an electronic brain for its operations with electronic devices.

D. Depending on electronic devices primarily for its operations is a large computing machine as an electronic brain.

3. If intelligence is naturally or artificially selected, each new generation becomes smarter.

A. Because intelligence is not naturally or artificially selected, no new generation becomes smarter.

B. Each new generation becomes smarter as there is no selection of natural or artificial intelligence.

C. Thanks to natural or artificial selection of intelligence, each new generation becomes smarter.

D. Each new generation becomes smarter when intelligence is naturally and artificially selected.

4. People cannot have computers solve problems in which the rules do not currently exist.

A. Problems in which rules do not currently exist cannot be solved by computers.

B. People cannot solve computers problems in which rules do not currently exist.

C. Problems in which rules do not currently exist have to be solved by computers.

D. People have to solve problems in which rules do not currently exist by computers.

5. After the robots have conquered everything, humans will have to do low-skilled physical and highly skilled, complex mental jobs.

A. Having conquered everything, the robots have humans do low-skilled physical and highly skilled complex mental jobs.

B. Humans will do low-skilled physical and highly skilled mental job after having the robots conquer everything.

C. Letting the robots conquer everything, humans will have to do low-skilled physical and highly skilled mental jobs.

D. Before doing low-skilled physical and highly skilled complex mental jobs, humans have the robots conquer everything else.

VII. Mark the letter A, B, C, or D to indicate the sentence that best combines each pair of sentences given.

1. Artificial intelligence is a study. It's about how to make computers do intelligent things that people can do, such as think and make decisions.

A. Artificial intelligence is the study of how to make computers do intelligent things that people can do, such as think and make decisions.

B. Artificial intelligence studies how to make computers intelligent things that people can do, such as think and make decisions.

C. How to make computers do intelligent things that people can do, such as think and make decisions is the study of artificial intelligence.

D. Making computers do intelligent things that people can do, such as think and make decisions is the study of artificial intelligence.

2. We are transferring to computers all sorts of complex tasks. These tasks are supposed to require human intelligence and abilities.

A. We are transferring to computers all sorts of complex tasks that require human intelligence and abilities.

B. Tasks supposed to require human intelligence and abilities are transferred to computers.

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C. We are transferring to computers all sorts of complex tasks supposed to require human intelligence and abilities.

D. All sort of complex tasks supposed to require human intelligence and abilities must be transferred to computers.

3. We have become too dependent on computers for personal interactions. This makes us spend way too much time on them.

A. We have become dependent enough on computers for personal interactions, so we spend too much time on them.

B. We have become so dependent on computers for personal interactions that we spend too much time on them.

C. We have to spend much time on computers to satisfy our dependence on them for personal interactions.

D. We have to spend much time on computers to maintain dependence on them for our personal interactions.

4. It's true that our jobs and lives are becoming ever more automated. It seems a sure bet that the trend will continue.

A. It's true that our jobs and lives are becoming ever more automated, and it seems a sure bet that the trend will continue.

B. It's true that our jobs and lives are becoming ever more automated, but it seems a sure bet that the trend will continue.

C. It's true that our jobs and lives are becoming ever more automated because it seems a sure bet that the trend will continue.

D. It's true that our jobs and lives are becoming ever more automated, then it seems a sure bet that the trend will continue.

5. Computers can provide valuable information to doctors. However, they cannot match an experienced doctor's ability to his grasp of the intricacies of a patient's condition.

A. Although computers can provide valuable information to doctors, they can never match an experienced doctor to his grasp of the intricacies of a doctor's condition.

B. However valuable is the information that a computer provides a doctor, it cannot help the doctor grasp the intricacies of his patients' condition.

C. Computers cannot match an experienced doctor to his grasp of the intricacies of a patient's condition even though they can provide him with valuable information.

D. Being provided with valuable information by the computer, a doctor can match his own experience and ability to the intricacies of his patients' conditions.

VIII. Read the following passage and mark the letter A, B, C, or D to indicate the correct word or phrase that best fits each of the numbered blanks.

A scientist said robots will be more (1) ____ than humans by 2029. The scientist's name is Ray Kurzweil. He works for Google as Director of Engineering. He is one of the world's (2) ____ experts on artificial intelligence (A.I.). Mr Kurzweil believes computers will be able to learn from experiences, just like humans. He also thinks they will be able to (3) ____ jokes and stories, and even flirt. Kurzweil's 2029 prediction is a lot sooner than many people thought. The scientist said that in 1999, many A.I. experts said it would be hundreds of years (4) ____ a computer was more intelligent than a human. He said that it would not be (5) ____ before computer intelligence is one billion times more powerful than the human brain.

Mr Kurzweil joked that many years ago, people thought he was a (6) ____ crazy for predicting computers would be as intelligent as humans. His thinking has stayed the same but everyone (7) ____ has changed the way they think. He said: "My views are not radical any more. I've actually stayed consistent. It's the rest of the world that's changing (8) ____ view." He highlighted examples of (9) ____ -tech things we use, see or read about every day. These things make us believe that computers have intelligence. He said people think

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(10) ____ now: "Because the public has seen things like Siri (the iPhone's voice recognition technology) where you talk to a computer, they've seen the Google self-driving cars."

C. smarter

1. A. intelligence	B. intelligent	C. smarter	D. smartness
2. A. loading	B. leading	C. loader	D. leader
3. A. speak	B. tell	C. talk	D. say
4. A. while	B. after	C. then	D. before
5. A. lengthy	B. longs	C. long	D. longing
6. A. little	B. lot	C. loads	D. less
7. A. others	B. other	C. else	D. rest
8. A. all	B. some	C. his	D. its
9. A. high	B. good	C. smart	D. app
10. A. differently	B. difference	C. different	D. differential

IX. Read the following passage and mark the letter A, B, C, or D to indicate the correct answer to each of the questions.

Automated manufacture arose out of the intimate relationship of such economic forces and technical innovations as the division of labor, power transfer and the mechanization of the factory, and the development of transfer machines and feedback systems as explained below.

The division of labor (that is, the reduction of a manufacturing or service process into its smallest independent steps) developed in the latter half of the 18th century and was first discussed by the Scottish economist Adam Smith in his book *An Inquiry into the Nature and Causes of the Wealth of Nations* (1776). In manufacturing, the division of labor results in increased production and a reduction in the level of skills required of workers.

Mechanization was the next step necessary in the development of automation. The simplification of work made possible by the division of labor also made it possible to design and build machines that duplicated the motions of the worker. As the technology of power transfer evolved, these specialized machines were motorized and their production efficiency was improved. The development of power technology also gave rise to the factory system of production, because all workers and machines had to be located near the power source.

The transfer machine is a device used to move a workpiece from one specialized machine tool to another, in such a manner as to properly position the workpiece for the next machining operation. Industrial robots, originally designed only to perform simple tasks in environments dangerous to human workers, are now extremely **dexterous** and are being used to transfer, handle, and index (that is, to position) both light and heavy workpieces, thus performing all the functions of a transfer machine. In actual practice, a number of separate machines are integrated into what may be thought of as one large machine.

In the 1920s the auto industry combined these concepts into an integrated system of production. The goal of this assembly-line system was to make automobiles available to people who previously could not afford them. This method of production was adopted by most automobile manufacturers and rapidly became known as Detroit automation. Despite more recent advances, it is this system of production that most people think of as automation.

1. According to the passage, automated manufacture did not result from ____.
   A. division of labor
   B. mechanization of factory
   C. development of transfer machines
   D. lack of human resources
2. Which of the following is true according to the passage?
   A. Division of labor came from economic forces.
   B. Division of labor arose out of technical innovations.
   C. Division of labor led to the reduction of workers.
   D. Division of labor resulted in simplification of work.
3. It can be understood that the key factor of mechanization is ____.

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A. machine design B. machine efficiency C. power source D. power technology

4. The word "**dexterous**" in paragraph 4 is closest in meaning to ____.

A. intelligent B. skillful C. efficient D. powerful

5. The auto industry is mentioned in the passage as ____.

A. an example of automated manufacture B. a method of automobile production

C. an integrated system of production D. an automated system of production

X. Read the following passage and mark the letter A, B, C, or D to indicate the correct answer to each of the questions.

Making robots work well in the home is incredibly difficult. Their sensory apparatus is limited because sensors are expensive and interpretation (especially common-sense knowledge) is still more suited for research than deployment. Robotic arms are expensive to build and not very reliable. This limits the range of possibilities: Mowing and vacuuming? Sure. Sorting laundry? Hard, but doable. Picking up dirty items around the home? Doubtful. How about assistants for the elderly or those who need medical supervision? This is a booming area of exploration, but I am **skeptical**. Today's devices are not reliable, versatile, or intelligent enough - not yet, anyway. Moreover, the social aspects of the interaction are far more complex than the technical ones, something the technology-driven enthusiasts typically fail to recognize.

Three likely directions for the future are entertainment, home appliances, and education. We can start with today's existing devices and slowly add on intelligence, manipulative ability, and function. Start small and build. The market for robots that entertain by being cute and cuddly is already well established. The second generation of vacuum cleaners is smarter than the first. Sony's dog gets smarter and less expensive with each new version. We don't get think of washing machines, microwave ovens, and coffee makers as robots, but why not? **They** don't move around the house, but they are getting better and smarter every year. And when the coffee maker is connected to the pantry and dishwasher, that will be a home robot worthy of the name: same for the coupling of sorting, washing, drying, and storing clothes.

Education is a powerful possibility. There is already a solid basis of educational devices that aid learning. Today's robots can read aloud in **engaging** voices. They can be cute and lovable - witness the responses to the multiple quasi-intelligent animals on the toy market. A robot could very well interact with a child, offering educational benefits as well. Why not have the robot help the child learn the alphabet, teach reading, vocabulary, pronunciation, basic arithmetic, maybe basic reasoning? Why not music and art, geography and history? And why restrict it to children? Adults can be willing and active learners.

Now this is a direction worthy of exploration: Robot as teacher. Not to replace school, not to replace human contact and interaction, but to **supplement** them. The beauty here is that these tasks are well within the abilities of today's devices. They don't require much mobility nor sophisticated manipulators. Many technologists dream of implementing Neil Stephenson's children's tutor in his novel *The Diamond Age*: *Or*, *a Young Lady's Illustrated Primer*. Why not? Here is a worthy challenge.

1. It is understood from paragraph one that ____.

A. Home robots are still expensive even though they can do various technical tasks.

B. Home robots are not reliable and intelligent enough for complex social interactions.

C. Home robots have not been commonly used as they are still in research.

D. Home robots have been recognized by the technology-driven enthusiasts.

2. Which of the following statements is TRUE as discussed in the passage?

A. The best home robots are now for entertainment purposes.

B. Home robots now are integrated into home appliances.

C. Home robots help parents teach their children more intelligently.

D. Smart home appliances should be considered home robots.

3. The word "**skeptical**" in paragraph two is closest in meaning to ____.

A. doubtful B. unbelievable C. terrified D. threatening

4. The writer mentions Sony's dog as an example of ____.

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A. robots doing household chores
B. robots entertaining in the house
C. clean and intelligent pets
D. best-selling robots for entertainment

5. The word "**They**" in paragraph two refers to ____.
A. washing machines B. microwave ovens C. coffee makers D. home appliances

6. The word "**engaging**" in paragraph three mostly means "____"
A. satisfying B. attractive C. sweet D. warm

7. The word "**supplement**" in the last paragraph can be replaced with "____".
A. strengthen B. add C. assist D. expand

8. The author of the passage may agree that ____.
A. Robots nowadays are most beneficial in the field of education
B. Home robots are not popular due to the high cost of manufacture
C. Robots to entertain will be marketed more and more to children
D. Robots have been becoming an integral part of our home life

9. The next paragraph following this passage may include more information about robots as ____.
A. toys B. home appliances C. tutors D. active learners

10. The tone of the passage is ____.
A. conservative B. passive C. skeptical D. radical

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