全国 2009 年 4 月高等教育自学考试
英语科技文选试题
课程代码：00836

PART A: VOCABULARY

I. Directions: Add the affix to each word according to the given Chinese, making changes when necessary. (8%)

1. artificial 人工制品	1. _____
2. fiction 虚构的	2. _____
3. coincide 巧合	3. _____
4. organic 无机的	4. _____
5. sphere 半球	5. _____
6. technology 生物技术	6. _____
7. formid 可怕的	7. _____
8. harmony 和谐的	8. _____

II. Directions: Fill in the blanks, each using one of the given words or phrases below in its proper form.(12%)

stand for	exposure to	at work	on the edge of	short of
end up	focus on	a host of	give off	a sense of
in memory of	comply with			

9. We were on a hill, right _____ the town.
10. UNESCO _____ United Nations Educational, Scientific and Cultural Organization.
11. I am a bit _____ cash right now, so I can’ t lend you anything.

12. The milk must be bad, it’s _____ a nasty smell.
13. The traveler took the wrong train and _____ at a country village.
14. The material will corrode after prolonged _____ acidic gases.
15. _____ problems may delay the opening of the conference.
16. The congress opened with a minute’s silence _____ those who died in the struggle for the independence of their country.
17. Tonight’s TV program _____ homelessness.
18. He promised to _____ my request.
19. Farmers are _____ in the fields planting.
20. She doesn’t sleep enough, so she always has _____ of fatigue.

III. Directions: Fill in each blank with a suitable word given below.(10%)

birth to unmarried had premature among were between such past

The more miscarriages or abortions a woman has， the greater are her chances of giving birth to a child that is underweight or premature in the future，the research shows．Low birthweight (under 2500g) and premature birth(less than 37 weeks)are two of the major contributors to deaths 21 newborn babies and infants. Rates of low birthweight and 22 birth were highest among mothers who 23 black, young or old, poorly educated, and 24 . But there was a strong association 25 miscarriage and abortion and an early or underweight 26 , even after adjusting for other influential factors, 27 as smoking, high blood pressure and heavy drinking. Women who had 28 one, two, or three or more miscarriages or abortions in the 29 were almost three, five, and nine times as likely to give birth 30 an underweight child as those without previous miscarriages or abortions.

21. _____ 22. _____ 23. _____ 24. _____ 25. _____
26. _____ 27. _____ 28. _____ 29. _____ 30. _____

PART B: TRANSLATION

IV. Directions: Translate the following sentences into English, each using one of the given words or phrases below. (10%)

precede replete with specialize in incompatible with suffice for

31.上甜食前,每个用餐者都已吃得很饱了。
32.这点钱够你现在花吗？
33.在许多情况下，接受器官移植的身体对移植器官都有排它性。
34.这家经营计算机软件的公司近几年发展很快。
35.在采取这一措施之间必须要有一些较为温和的措施。

V. Directions: Translate the following paragraph into Chinese. (15%)

36. However, much of industry is concerned with batch production where perhaps one type of item is made during the morning and another during the afternoon. Human beings are very good in this environment. From a robotic point of view they are light, mobile structures with exceptionally good sensory perception and intelligence far above that of any current robot. This gives them superb adaptability. However, they tire, may become unreliable, unpredictable, and may well wish to be pursuing other activities which give greater scope for the use of their intelligence, or indeed just give greater pleasure.

PART C: READING COMPREHENSION

VI. Directions: Read through the following passages. Choose the best answer and put the letter in the bracket. (20%)

(A)

With the recent award of the Nobel Prize in physics, the spectacular work on Bose-Einstein condensation in a dilute gas of atoms has been honored. In such a Bose-Einstein condensate, close to temperatures of absolute zero, the atoms lose their individuality and a wave-like state of matter is created that can be compared in many ways to laser light.

Based on such a Bose-Einstein condensate researchers in Munich together with a colleague from the ETH Zurich have now been able to reach a new state of matter in atomic physics. In order to reach this new phase for ultracold atoms, the scientists store a Bose-Einstein condensate in a three-dimensional lattice of microscopic light traps. By increasing the strength of the lattice, the researchers are able to dramatically alter the properties of the gas of atoms and can induce a quantum phase transition from the superfluid phase of a Bose-Einstein condensate to a Mott insulator phase. In this new state of matter it should now be possible to investigate fundamental problems of solid-state physics, quantum optics and atomic physics.

For a weak optical lattice the atoms form a superfluid phase of a Bose-Einstein condensate. In this phase, each atom is spread out over the entire lattice in a wave-like manner as predicted by quantum mechanics. The gas of atoms may then move freely through the lattice. For a strong optical lattice the researchers observe a transition to an insulating phase, with an exact number of atoms at each lattice site. Now the movement of the atoms through the lattice is blocked due to the repulsive interactions between them. Some physicists have been able to show that it is possible to reversibly cross the phase transition between these two states of matter. The transition is called a quantum phase transition because it is driven by quantum fluctuations and can take place even at temperatures of absolute zero. These quantum fluctuations are a direct consequence of Heisenberg's uncertainty relation. Normally phase transitions are driven by thermal fluctuations, which are absent at zero temperature.

With their experiment, the researchers in Munich have been able to enter a new phase in the physics of ultracold atoms. In the Mott insulator state the atoms can no longer be described by the highly successful theories for Bose-Einstein condensates. Now theories are required that take into account the dominating interactions between the atoms and which are far less understood. Here the Mott insulator state may help in solving fundamental questions of strongly correlated systems, which are the basis for our understanding of superconductivity. Furthermore, the Mott insulator state opens many exciting perspectives for precision matter-wave interferometry and quantum computing.

37. What does the passage mainly discuss? （ ）

A. Bose-Einstein condensation.

B. Quantum phase transitions.

C. The Mott insulator state.

D. Optical lattices.

38. What will the scientists possibly do by reaching the new state of matter in atomic physics?

A. Store a Bose-Einstein condensate in three-dimensional lattice of microscopic light traps.

B. Increase the strength of the lattice.

C. Alter the properties of the gas of atoms.

D. Examine fundamental problems of atomic physics.

39. Which of the following is NOT mentioned in relation to a weak optical lattice? （ ）

A. The atoms form a superfluid phase of a Bose-Einstein condensate.

B. Each atom is spread out over the entire lattice.

C. The gas of atoms may move freely through the lattice.

D. The superfluid phase changes into an insulating phase.

40. What can be said about the quantum phase transition? （ ）

A. It can take place at temperatures of absolute zero.

B. It cannot take place above the temperatures of absolute zero.

C. It is driven by thermal fluctuations.

D. It is driven by the repulsive interactions between atoms.

41. The author implies all the following about the Mott insulator state EXCEPT that____.（ ）

A. the theory of Bose-Einstein condensation can’t possibly account for the atoms in the Mott insulator state

B. not much is known about the dominating interactions between the atoms in the Mott insulator state

C. it offers new approaches to exact quantum computing

D. it forms a superfluid phase of a Bose-Einstein condensate

(B)

Gene therapy and gene-based drugs are two ways we would benefit from our growing mastery of genetic science. But there will be others as well. Here is one of the remarkable therapies on the cutting edge of genetic research that could make their way into mainstream medicine in the coming years.

While it’s true that just about every cell in the body has the instructions to make a complete human, most of those instructions are inactivated, and with good reason: the last thing you want for your brain cells is to start churning out stomach acid or your nose to turn into a kidney. The only time cells truly have the potential to turn into any and all body parts is very early in a pregnancy, when so-called stem cells haven’t begun to specialize.

Yet this untapped potential could be a terrific boon to medicine. Most diseases involve the death of healthy cells—brain cells in Alzheimer’s, cardiac cells in heart disease, pancreatic cells in diabetes, to name a few; if doctors could isolate stem cells, then direct their growth, they might be able to furnish patients with healthy replacement tissue.

It was incredibly difficult, but last fall scientists at the University of Wisconsin managed to isolate stem cells and get them to grow into neural, gut, muscle and bone cells. The process still can’t be controlled, and may have unforeseen limitations; but if efforts to understand and master stem-cell development prove successful, doctors will have a therapeutic tool of incredible power.

The same applies to cloning, which is really just the other side of the coin; true cloning, as first shown, with the sheep Dolly two years ago, involves taking a developed cell and reactivating the genome within, resenting its developmental instructions to a pristine state. Once that happens, the rejuvenated cell can develop into a full-fledged animal, genetically identical to its parent.

For agriculture, in which purely physical characteristics like milk production in a cow or low fat in a hog have real market value, biological carbon copies could become routine within a few years. This past year scientists have done for mice and cows what Ian Wilmut did for Dolly, and other creatures are bound to join the cloned menagerie in the coming year.

Human cloning, on the other hand, may be technically feasible but legally and emotionally more difficult. Still, one day it will happen. The ability to reset body cells to a pristine, undeveloped state could give doctors exactly the same advantages they would get from stem cells: the potential to make healthy body tissues of all sorts. And thus to cure disease. That could prove to be a true “miracle cure”.

42. What is the passage mainly about? （ ）

A. Tomorrow’s tissue factory.

B. A terrific boon to medicine.

C. Human cloning.

D. Genetic research.

43. According to the passage, it can be inferred that which of the following reflects the author’s opinion? （ ）

A. There will inevitably be human cloning in the coming year.
B. The potential to make healthy body tissues is undoubtedly a boon to human beings.
C. It is illegal to clone any kind of creatures in the world.
D. It is legal to clone any kind of creatures in the world except human.

44. Which of the following is NOT true according to the passage? （ ）
A. Nearly every cell in the human brain has the instructions to make a complete human.
B. It is impossible for a cell in your nose to turn into a kidney.
C. It is possible to turn out healthy replacement tissues with isolated stem cells.
D. There will certainly appear some new kind of cloned animal in the near future.

45. All of the following are steps involved in true cloning EXCEPT_____. （ ）
A. selecting a stem cell
B. taking a developed cell
C. reactivating the genome within the developed cell
D. resetting the developmental instructions in the cell to its original state

46. The word “rejuvenated” in para. 5 is closest in meaning to_____. （ ）
A. rescued
B. reactivated
C. recalled
D. regulated

VII. Directions: Read the following passage, and then fill in the table with the information based on the passage. (10%)

There has been much recent interest in the links between social cognition and brain function, particularly as neuropsychological studies have shown that brain injury (particularly to the frontal lobes) can adversely affect social judgements and interaction. People diagnosed with certain mental illnesses are also known to show differences in how they process social information.

There is now an expanding research field examining how such conditions may bias cognitive processes involved in social interaction, or conversely, how such biases may lead to the symptoms associated with the condition. It is also becoming clear that some aspects of psychological processes that promote social behaviour (such as face recognition) may be innate. Studies have shown that newborn babies, younger than one hour old can selectively recognize and respond to faces, while people with some developmental disorders such as autism or Williams syndrome may show differences in social interaction and social communication when compared to their unaffected peers.

Links Between social Cognition and Brain Function

Brain Function	Social Cognition
Brain injuries	47. Adversely _____.
48. People_____.	49.Show____.
Newborn babies	50. Can_____.
51. People_____.	May show differences in social interaction and social communication when compared to their unaffected peers.

47. _____
48. _____
49. _____

50. _____
51. _____

PART D: WRITING

VIII. Directions Write a passage(150-200 words) in English on the following title. Develop the ideas according to the Chinese outline given below.(15%)

52. On-line Learning

(1) 网络的发展改变了学习方式。

(2) 对传统的学习方式和网上学习方式进行比较。

(3) 你更喜欢哪种方式。