27 - 3

医学部医学科英語入試問題

下記の注意事項をよく読んで解答してください。

◎注意事項

1. 配付された問題冊子および解答用マークシートに，それぞれ受験番号(4桁)ならびに氏名を記入し，解答用マークシートの受験番号欄に自分の番号を正しくマークしてください。
2. マークには必ずHBの鉛筆を使用し，濃く正しくマークしてください。
   記入マーク例：良い例 ●
   悪い例 Ø ⓘ Ø ⊙
3. マークを訂正する場合は，消しゴムで完全に消してください。
4. 所定の記入欄以外には何も記入しないでください。
5. 解答用マークシートを折り曲げたり，汚したりしないでください。
6. 「止め」の合図があったら，問題冊子の上に解答用マークシートを重ねて置いてください。

(受験番号のマークの仕方)

受験番号			
千	百	十	一
0	0	1	2

受験番号			
千	百	十	一
●	●	⓪	⓪
①	①	●	①
②	②	②	●
③	③	③	③
④	④	④	④
⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨

受験番号 [　　]　氏　名 [　　]

[1] 次の英文を読み，設問1．～17．に最も適する答えを，a．～d．の中から一つ選べ。

Gout is a form of acute arthritis that causes **severe**(1) pain and swelling in the joints. It most commonly affects the big toe, but may also affect the heel, ankle, hand, wrist, or elbow. It affects the spine often enough to be a factor in back pain. Gout usually comes on suddenly, goes away after 5-10 days, and can keep recurring. Gout is different from other forms of arthritis because it occurs when there are high levels of uric acid(2) circulating in the blood, which can cause urate crystals to settle in the tissues of the joints.

Uric acid, which is found naturally in the blood stream, is formed as the body breaks down waste products, mainly those containing purine, a **substance**(3) that is produced by the body and is also found in high concentrations in some foods, including brains, liver, sardines, anchovies, and dried peas and beans. Normally, the kidneys filter uric acid out of the blood and excrete it in the urine. Sometimes, however, the body produces too much uric acid or the kidneys aren't efficient enough at filtering it from the blood, and it builds up in the blood stream, a condition known as hyperuricemia. A person's susceptibility to gout may increase because of the inheritance of certain genes or from being overweight and eating a rich diet.

Hyperuricemia doesn't always cause gout. Over the course of years, however, sharp urate crystals build up in the synovial fluid of the joints. Often, some precipitating event, such as an infection, surgery, the stress of hospitalization, a stubbed toe, or even a heavy drinking binge can cause inflammation. White blood cells, mistaking the urate crystals for a foreign invader, flood into the joint and surround(4) the crystals, causing inflammation — in other words, the redness, swelling, and pain that are the hallmarks of a gout attack.

As a result of high levels of uric acid in the blood, needle-like urate crystals gradually **accumulate**(5) in the joints. Urate crystals may be present in the joint for a long time without causing symptoms. Infection, injury to the joint, surgery, drinking too much, or eating the wrong kinds of foods may suddenly bring on the symptoms, which include pain, tenderness, redness, warmth, and swelling of the joint. In many cases, the gout attack begins in the middle of the night. The pain is often so excruciating that the sufferer cannot bear weight on the joint or **tolerate**(6) the pressure of bedcovers. The inflamed skin over the joint may be red, shiny, and dry, and the inflammation may **be accompanied by**(7) a mild fever. These symptoms may go away in about a week and disappear for months or years at a time. However, over the course of time, attacks of gout **recur**(8) more and more frequently, last longer, and affect more joints. Eventually, stone-like deposits known as tophi may build up in the joints, ligaments, and tendons, leading to **permanent**(9) joint deformity and decreased motion.

Usually, physicians can diagnose gout based on the physical examination and medical history

(the patient's description of symptoms and other information). Doctors can also administer a test that measures the level of uric acid in the blood. (10) While normal uric acid levels don't necessarily rule out gout and high levels don't confirm it, the presence of hyperuricemia increases the likelihood of gout. The development of a tophus can confirm the diagnosis of gout. The most (11) **definitive** way to diagnose gout is to take a sample of fluid from the joint and test it for urate crystals.

The goals of treatment for gout consist of alleviating pain, avoiding severe attacks in the future, and preventing long-term joint damage. In addition to taking pain medications as prescribed by their doctors, people having gout attacks are encouraged to rest and to increase the amount of fluids that they drink.

Once an acute attack has been successfully treated, doctors try to prevent future attacks of gout and long-term joint damage by lowering uric acid levels in the blood. Gout cannot be cured but usually it can be managed successfully. As tophi (12) **dissolve**, joint mobility generally improves. Lowering uric acid in the blood also helps to prevent or improve the kidney problems that may accompany gout.

1. The word "severe" is closest in meaning to
   a. strict
   b. distinctive
   c. full
   d. extreme

2. Which of the following sentences is closest in meaning to the underlined part?
   a. High levels of uric acid circulating in the blood are produced by a different form of arthritis, which will cause urate crystals to gather in the joints and may cause gout.
   b. What makes gout different from other forms of arthritis is that the urate crystals settle in the joint tissues rather than in the blood circulation.
   c. Gout is caused by an excess of uric acid in the blood, which leads to the buildup of urate crystals in the joint tissues and distinguishes it from other types of arthritis.
   d. Gout is caused by urate crystals in the joint tissues, while other forms of arthritis are caused by high levels of uric acid in the blood.

3. The word "substance" is closest in meaning to
   a. poison
   b. density
   c. material
   d. content

4. Which of the following sentences is closest in meaning to the underlined part?
   a. White blood cells cause redness, swelling, and pain by inflaming the joint where urate crystals have built up because they react as if the urate crystals are foreign invaders.
   b. White blood cells mistakenly invade the joint and surround the urate crystals in response to the redness, swelling, and pain of inflammation.
   c. Redness, swelling, and pain cause urate crystals to invade the joint from outside, which attracts white blood cells to the area of inflammation by mistake.
   d. Urate crystals are mistakenly surrounded by foreign invaders, which attract white blood cells that cause inflammation, producing the redness, swelling, and pain of a gout attack.

5. The word "accumulate" is closest in meaning to
   a. circulate
   b. degrade
   c. ache
   d. gather

6. The word "tolerate" is closest in meaning to
   a. condone
   b. endure
   c. permit
   d. sustain

7. The phrase "be accompanied by" is closest in meaning to
   a. attend to
   b. be caused by
   c. occur with
   d. be parted from

8. The word "recur" is closest in meaning to
   a. return
   b. react
   c. respond
   d. restore

9. The word "permanent" is closest in meaning to
   a. inflexible
   b. impossible
   c. irreversible
   d. feasible

10. Which of the following sentences is closest in meaning to the underlined part?
   a. Gout can be confirmed if there is a likelihood of hyperuricemia, if too much uric acid is present in the blood, or if normal levels of uric acid are ruled out.
   b. The presence of hyperuricemia makes gout more likely, but only if normal levels of uric acid are ruled out or if high levels of uric acid are confirmed.
   c. A regular level of uric acid can rule out gout since a high level is necessary to confirm the likelihood of hyperuricemia, which is necessary for gout to be present.
   d. Hyperuricemia makes the possibility of gout higher, but gout can still be present with regular levels of uric acid or may not be present even if the level of uric acid is above normal.

11. The word "definitive" is closest in meaning to
   a. conclusive
   b. current
   c. scientific
   d. differential

12. The word "dissolve" is closest in meaning to
   a. take off
   b. break down
   c. come together
   d. stretch out

13. According to the text, hyperuricemia is caused by
   a. uric acid being excreted in the urine.
   b. the kidneys not being able to filter enough uric acid from the blood.
   c. the body converting urate crystals into purines.
   d. heavy drinking, infection, surgery, or hospitalization.

14. According to the text, the buildup of urate crystals in the joints
   a. does not always cause the symptoms of gout right away.
   b. may begin in the middle of the night.
   c. does not always lead to hyperuricemia.
   d. may require surgery.

15. According the text, gout attacks
   a. occur less often over time.
   b. are brought on by excruciating pain.
   c. may happen suddenly.
   d. rarely occur at night.

16. According to the text, gout is diagnosed by
   a. checking the affected joint for urate crystals.
   b. looking for the development of a tophus.
   c. measuring how much uric acid is in the blood.
   d. all of the above.

17. According to the text, after the initial gout attack has been taken care of, the goal of later treatment is to
   a. increase the amount of fluids the patient drinks.
   b. eliminate uric acid from the blood.
   c. stop attacks from coming again.
   d. provide a permanent cure.

2 次の英文を読み，設問 18. ～30. に最も適する答えを，a．～d．の中から一つ選べ。

History is rich with 'eureka' moments: scientists from Archimedes to Isaac Newton and Albert Einstein are said to have had flashes of inspiration while thinking about other things. But the mechanisms behind this psychological phenomenon have remained unclear. A study now suggests (18) that simply taking a break does not bring on inspiration — rather, creativity is fostered by tasks that allow the mind to wander.

The discovery was made by a team led by Benjamin Baird and Jonathan Schooler, psychologists at the University of California, Santa Barbara. The researchers presented 145 undergraduate students with two 'unusual uses' tasks that gave them two minutes to list as many uses as possible for everyday objects such as toothpicks, clothes hangers, and bricks.

After the two minutes were over, participants were given a 12-minute break, during which they rested, undertook a **demanding** (19) memory activity that required their full attention, or engaged in an undemanding reaction-time activity known to elicit mind-wandering. A fourth group of students had no break. All participants were then given four unusual-uses tasks, including the two that they had completed earlier.

Those students who had done the undemanding activity performed an average of 41% better at the repeated tasks the second time they tried them. By contrast, students in the other three groups showed no improvement. The work will be published shortly in *Psychological Science*.

"We've traditionally found that rapid-eye-movement sleep grants creative **insight** (20). That allowing the mind to wander does the same is absolutely fascinating. I think they are on to something really interesting here," says Sara Mednick, a psychologist at the University of California, Riverside.

"This finding really plugs a hole in the literature," agrees John Kounios, a psychologist at Drexel University in Philadelphia, Pennsylvania.

Participants who engaged in the undemanding task did not do any better than others on unusual-uses tasks that they encountered for the first time in the second round. "The **implication** (21) is that mind-wandering was only helpful for problems that were already being mentally chewed on. It didn't seem to lead to a general increase in creative problem-solving ability," says Baird.

As well as **revealing** (22) that breaks on their own do not encourage creative thinking, Baird's work suggests an explanation for one of psychology's great mysteries: why we zone out.

From an evolutionary perspective, mind-wandering seems totally counterproductive and has been viewed as **dysfunctional** (23) because it compromises people's performance in physical activities. However, Baird's work shows that allowing the brain to enter this state when it is considering complex problems can have real benefits. Zoning out may have aided humans when survival depended on creative solutions.

"There is a real possibility that mind-wandering is so common because evolution has selected for it over time, but before we can come to that conclusion we have to ascertain whether it's genetically determined," says Kounios.

18. Which of the following sentences is closest in meaning to the underlined part?
   a. A study suggests that creativity is encouraged more if people can take a simple break rather than try to force the mind to be creative.
   b. Doing tasks that let the mind wander rather than taking a break can promote people's creativity, according to a recent study.
   c. Allowing ones' thoughts to wander can boost people's creativity, but not as much as taking a break, a study says.
   d. A study reports that taking a break could foster people's creativity, while letting their minds wander does not.

19. The word "demanding" is closest in meaning to?
   a. asking
   b. necessary
   c. difficult
   d. commanding

20. The word "insight" is closest in meaning to
   a. function
   b. understanding
   c. anxiety
   d. continuity

21. The word "implication" is closest in meaning to
   a. indication
   b. imagination
   c. association
   d. recollection

22. The word "revealing" is closest in meaning to

a. unwrapping

b. producing

c. showing

d. conducting

23. The word "dysfunctional" probably means

a. not operating correctly

b. damaging to people's brains

c. not contributing to evolution

d. improving performance in physical tasks

24. What were the 'unusual-uses' tasks that the participants in the study had to perform?

a. They had to build things with everyday objects such as toothpicks or bricks.

b. They had to let their minds wander for two minutes.

c. They had to perform a demanding memory activity.

d. They had to list how to use ordinary objects in unusual ways.

25. How many different 'unusual-uses' tasks did the participants have to perform in all?

a. two

b. four

c. six

d. eight

26. According to the text, mind wandering

a. is not mentioned much in literary texts.

b. has similar effects to rapid-eye-movement sleep.

c. does not seem to bring much improvement for tasks being mentally chewed on.

d. leads to overall growth in creativity.

27. What was not one of the activities the participants did during their break?

a. physical exercise

b. a reaction-time activity

c. doing nothing

d. a memory activity

28. What happened to the group of participants who let their minds wander during their break?

a. They improved in all of the unusual-uses tasks in the second round, but the participants in the other groups did not improve.

b. They did not perform as well on the repeated unusual-uses tasks as the members of the other groups.

c. They did not show any improvement on the unusual-uses tasks when they did them the second time, but neither did any of the other groups.

d. They performed better at the unusual-uses tasks that they did a second time, while the members of the other groups did not.

29. What was one of the conclusions of the study?

a. Letting the mind wander does not completely improve a person's creative ability to solve problems.

b. Engaging in undemanding tasks is a waste of time.

c. Letting the mind wander does not help with problems a person is already thinking about.

d. Engaging in undemanding tasks can increase performance in difficult tasks when they are first encountered.

30. What does the author suggest as an evolutionary explanation for mind-wandering?

a. Mind-wandering enhanced people's ability to perform physical activities.

b. Mind wandering allowed people to make better evolutionary choices.

c. Mind-wandering is probably genetic.

d. Mind-wandering possibly helped humans solve complicated problems.

3 次の英文を読み，31.～40.の下線部に入る最も適切なものを，それぞれa.～d.の中から一つ選べ。

Most of us have heard of "the placebo effect," the heal-inducing effect patients in clinical trials experience when they believe they're getting a fancy new drug or surgery (31)_____ are actually getting fake treatment. The placebo effect is real, it works about 18-80% of the time, and it's not just in your head — it actually dilates bronchi, heals ulcers, makes warts disappear, drops your blood pressure, and even makes bald men who think they're getting Rogaine grow hair!

But the placebo effect has a shadow side. The same mind-body power that can heal you can also harm you. When patients in double-blinded clinical trials (32)_____ about the side effects they may experience if they're given the real drug, approximately 25% experience sometimes severe side effects, even when they're only taking sugar pills. Those treated with nothing (33)_____ placebos often report fatigue, vomiting, muscle weakness, colds, ringing in the ears, taste disturbances, memory disturbances, and other symptoms that shouldn't result (34)_____ a sugar pill.

Interestingly, these nocebo complaints aren't random; they tend to arise (35)_____ the side effect warnings on the actual drug or treatment. The mere suggestion that a patient may experience negative symptoms from a medication (or a sugar pill) (36)_____ a self-fulfilling prophecy. For example, if you tell a patient treated with a placebo he might experience nausea, (37)_____ feel nauseous. If you suggest that he might get a headache, he may. Patients given nothing but saline who thought it was chemotherapy actually threw up and lost their hair!

In another study, patients about to undergo surgery who were "convinced" of their impending death (38)_____ another group of patients who were merely "unusually apprehensive" about death. While the apprehensive bunch fared pretty well, those who were convinced they were going to die usually did.

Similarly, women who believed they were prone to heart disease were four times more likely to die. It's (39)_____ these women had poorer diets, higher blood pressure, higher cholesterol, or stronger family histories than the women who didn't get heart disease. The only difference between the two groups was their beliefs.

The nocebo effect is probably most obvious in "voodoo death," when a person is cursed, told they will die, and then dies. The notion of voodoo death doesn't just apply to witch doctors in tribal cultures. The literature shows that patients believed to be terminal who are mistakenly informed that they have only a few months to live have died within their given time frame, (40)_____ autopsy findings reveal no physiological explanation for the early death.

31. a. and　b. who　c. but　d. that

32. a. are warned　b. that warned　c. warning　d. who were warned

33. a. to do with　b. like　c. other　d. more than

34. a. by　b. of　c. from　d. in

35. a. in place of　b. in terms of　c. in response to　d. in need of

36. a. with　b. believes　c. like　d. may be

37. a. he's likely to　b. he will never　c. he used to　d. he is supposed to

38. a. compared with　b. were compared to　c. comparing　d. that were compared

39. a. because　b. because none of　c. only because　d. not because

40. a. even when　b. in that　c. in case　d. even after

4 次の英文を読み，設問 41. ～50. に最も適する答えを，a．～d．の中から一つ選べ。

If you have long hair, you probably don't need to look up a weather report to get an idea of how much humidity's in the air. You can simply grab a fistful of hair and see how it feels. Human hair is extremely (41)_____ to humidity — so much that some hygrometers (devices that indicate humidity) use a hair as the measuring mechanism, because it changes in length based on the amount of moisture in the air.

Straight hair goes wavy. If you have curly hair, humidity turns it frizzy or even curlier. But just why does humidity have this strange effect on human hair?

Hair's chemical (42)_____, it turns out, makes it unusually susceptible to changes in the amount of hydrogen present in the air, which is directly linked to humidity. Most of a hair's bulk is made up of bundles of long keratin proteins. These keratin proteins can be chemically bonded together in two different ways. Molecules on neighboring keratin strands can form a disulfide bond, in which two sulfur atoms are covalently bonded together. This type of bond is permanent — it's responsible for the hair's strength — and isn't affected by the level of humidity in the air.

But the other type of connection that can form between adjacent keratin proteins, a hydrogen bond, is much weaker and temporary, with hydrogen bonds breaking and new ones forming each time your hair gets wet and dries again. (This is the reason why, if your hair dries in one shape, it tends to (43)_____ in roughly that same shape over time.)

Hydrogen bonds occur when molecules on neighboring keratin strands each form a weak attraction with the same water molecule, thereby indirectly bonding the two keratin proteins together. Because humid air has much higher numbers of water molecules than dry air, a given strand of hair can form much higher numbers of hydrogen bonds on a humid day. When many such bonds are formed between the keratin proteins in a strand of hair, it causes the hair to fold back on itself at the molecular level at a greater rate.

On the macro level, this means that naturally curly hair as a whole becomes curlier or frizzier due to humidity. As (44)_____, imagine the metal coil of a spring. If you straighten and dry your hair, it'll be like the metal spring, completely straightened out into a rod. But if it's a humid day, and your hair is (45)_____ to curling, water molecules will steadily be absorbed and incorporated into hydrogen bonds, inevitably pulling the metal rod back into a coiled shape.

41. Which word is the best for blank 41?
a．accustomed
b．contrasted
c．formed
d．sensitive

42. Which word is the best for blank 42?
a．structure
b．pressure
c．perception
d．concept

43. Which word is the best for blank 43?
a．pull
b．contrast
c．remain
d．shrink

44. Which words are the best for blank 44?
a．an impression
b．an analogy
c．a prelude
d．a consequence

45. Which word is the best for blank 45?
a．promise
b．prone
c．tendency
d．exposed

46. According to the text, hair is sometimes used in devices that measure humidity because
a．humidity makes it frizzier or curlier.
b．you can grab it easily.
c．it reacts strongly to moisture.
d．it is responsive to curling.

47. According to the text, hair's strength comes from
  a. humidity in the air.
  b. its disulfide bonds.
  c. its hydrogen bonds.
  d. the length of its keratin proteins.

48. According to the text, hair changes shape when it dries after becoming wet because
  a. its hydrogen bonds are replaced by disulfide bonds.
  b. its disulfide bonds are permanent unless they get wet.
  c. its hydrogen bonds break and new bonds form.
  d. it loosens its folds at the molecular level.

49. According to the text, what happens when molecules in hair form a hydrogen bond?
  a. Water molecules in keratin proteins form weak attractions with sulfur atoms.
  b. A water molecule in the air forms a bond with a water molecule in one keratin strand.
  c. Two keratin proteins will covalently bond together in an indirect bond that is easily broken.
  d. A single water molecule will form weak attractions with molecules on several nearby keratin strands.

50. According to the text, humid air makes hair curl because
  a. the hydrogen bonds in hair only form when there are a certain number of water molecules in the air.
  b. humid air has more hydrogen atoms, so the keratin proteins replace their disulfide bonds with hydrogen bonds.
  c. the greater number of water molecules in the air cause more hydrogen bonds to form in hair.
  d. the greater number of water molecules in the air break down the hydrogen bonds in hair more easily.

5 51.～55. の下線部に入る最も適切なものを，それぞれa.～d.の中から一つ選べ。

51. _____ many people lacking access to medical care, the government sponsored a number of public health efforts to control communicable diseases in the second half of the 20th century.
  a. With
  b. Because
  c. From
  d. As

52. It is necessary that the directions _____ precisely in the order given above.
  a. followed
  b. being followed
  c. be followed
  d. to be followed

53. _____ 50 million people died in the Spanish flu epidemic of 1918.
  a. No fewer
  b. No fewer than
  c. As many
  d. As much

54. The vice president of the company _____ Mr. Yamazaki, the groom, works was the go-between for the wedding.
  a. which
  b. who
  c. what
  d. where

55. _____ invested wisely when I was young, I would be in much worse financial shape than I am in today.
  a. If I had
  b. When I
  c. Would that I had
  d. Had I not

6

56.～60.について，下線部の発音が他の三つと異なるものを，a.～d.の中から一つ選べ。

56. a. noun　　b. couch　　c. shoulder　　d. doubt

57. a. caution　　b. sauce　　c. laughter　　d. pause

58. a. pressure　　b. associate　　c. possible　　d. essential

59. a. asthma　　b. breath　　c. thirsty　　d. both

60. a. castle　　b. fasten　　c. soften　　d. subtle

61.～65.について，最も強く発音される部分の位置が他の三つと異なるものを，a.～d.の中から一つ選べ。

61. a. dis･ease　　b. wel･fare　　c. pre･fer　　d. tech･nique

62. a. ap･pe･tite　　b. sim･i･lar　　c. de･vel･op　　d. oc･cu･py

63. a. tra･di･tion　　b. cit･i･zen　　c. sta･tis･tics　　d. con･tin･ue

64. a. in･jure　　b. prod･uct　　c. dam･age　　d. com･plaint

65. a. par･tic･u･lar　　b. en･vi･ron･ment
c. tem･per･a･ture　　d. ex･per･i･ment