

# 高知大学

平成 29 年度 入学試験問題(前期日程)

## 英 語

試験時間 120 分

医学部：医学科

問題冊子 問題…… 1 ~ 6 ページ…… 1 ~ 13  
解答用紙…… 4 枚

配 点……表示のとおり

### 注 意 事 項

1. 試験開始の合図まで、この問題冊子を開かないこと。
2. 試験中に、問題冊子・解答用紙の印刷不鮮明、ページの落丁・乱丁等に気付いた場合は、手を挙げて監督者に知らせること。
3. 各解答用紙に受験番号を記入すること。  
なお、解答用紙には、必要事項以外は記入しないこと。
4. 解答は、必ず解答用紙の指定された箇所に記入すること。
5. 解答用紙の各ページは、切り離さないこと。
6. 配付された解答用紙は、持ち帰らないこと。
7. 試験終了後、問題冊子は持ち帰ること。
8. 試験終了後、指示があるまでは退室しないこと。

1 次の英文を読んで設問に答えなさい。(100点)

( 1 ) have always been terrified of motorbikes, ever since one of ( 2 ) college friends was knocked off ( 3 ) Honda 50cc when ( 4 ) was just 16 years old and thrown over the bonnet of the car that hit ( 5 ). She survived, suffering only mild concussion<sup>(註)</sup>, but another friend's wife died in ( 6 ) twenties when ( 7 ) was knocked off the back of ( 8 ) husband's bike. So it was with much fear that I agreed to go on the back of a bike — a powerful, bright orange Triumph Tiger — to visit a local winery. The teasing remarks from the group of friends who had set ( 9 ) up for this made ( 10 ) even more terrified.

Clothed in all the necessary gear and ( 11 ) to the basics of being a pillion passenger<sup>(註)</sup>, I ( 12 ) onto the bike behind my friend and confident driver, Steve. I ( 13 ) him 100% to drive safely, and for good reason: I would be at his mercy. There ( 14 ) to be good body talk and understanding because you can't chat or ( 15 ) each other's face once you are on the road. Tapping on the shoulder means stop — like pulling the safety cord of a parachute. I was determined not to have to do that.

After saying goodbye to the others, who were driving there by car, we sped up the driveway and immediately came to a corner. My arms and body were tight with adrenalin. Was I leaning enough? Should I look to the left or right, or simply bury my head in Steve's back? So many fears raced through my mind. And it seemed that my inner thoughts were shouting at me, being amplified under my helmet. The next ten minutes were sheer terror. I dared not look at anything except Steve's silver helmet in front of me, which I kept hitting with mine as we braked.

And then I slowly started noticing the ( 16 ): the modern houses along the coastline, the beautiful bays and beaches, the other drivers, the curves and inclines in the road. It was fun to be gazing at the world as it flew by. I started enjoying leaning round the bends and the ( 17 ) of accelerating and speeding in and out of the ( 18 ). I felt so ( 19 ) and yet so free at the same time. Every now and then, I could smell fresh grass in the fields or raw petrol coming from car exhausts — things I had never experienced before with such ( 20 ). It was all so precarious<sup>(註)</sup> and yet so ( 21 ). It was ( 22 ) to know that we were wearing ( 23 ) gear that could help save us from brain ( 24 ) or torn skin. But also knowing that a slight ( 25 ) by another driver could mean death for both of us was unnerving<sup>(註)</sup>. The tension, contemplated at high speed, added to the thrill. I understood

what it means to be a biker.

Another acquaintance has been researching thrilling interactions as part of his work on new forms of entertainment. He has invented, in cooperation with a number of artists, ever more amazing experiences, including a new form of interactive thrill ride that is controlled by a person's breathing. His method is to deliberately use discomfort as a way of enhancing the excitement. The ( 26 ) frightening, dangerous and uncomfortable, the ( 27 ), it seems.

④ スリルは恐れが入り混じった期待から始まり, それに続いて極度の肉体的な感覚が起こり, そしてその経験を生き延びたということで強い喜びと安堵で終わる。 That sums up my experience exactly. But why do we keep seeking new thrills? It doesn't seem natural to put our lives at ever more risk by terrifying ourselves. One theory is that such feelings of thrill fill the void<sup>(注)</sup> that has come about through civilization. We long for powerful emotions that have somehow got lost through becoming a modern society. No longer able to hunt or face a roaring tiger, we seek out new thrills, like bungee jumping, white-water rafting<sup>(注)</sup>, or riding a powerful motorbike Tiger.

The terror we go through and the associated feelings we experience before, during and after, heighten the actual experience and our subsequent memory of it. I ( 28 ) forget what we had for our delightful lunch at the winery afterwards, but I ( 29 ) never forget my Triumph Tiger motorbike ride.

(Rogers, Yvonne, *Tiger Thrill*, <http://www.interactiveingredients.com/tiger-thrill> より。  
ただし出題にあたり本文の趣旨を変えない範囲で一部改変した。)

(注) concussion : 脳振盪(のうしんとう)

pillion passenger : バイクの後ろに相乗りする人      precarious : 不安定な

unnerving : 恐怖を煽るような      void : 空虚感

white-water rafting : いかだやゴムボートによる急流の川くだり

設問 1. 本文中の( 1 )~( 10 )に当てはまるものを A~J から選び, その記号で答えなさい。重複してもよい。

- |        |        |        |        |
|--------|--------|--------|--------|
| A. I   | B. me  | C. my  | D. he  |
| E. him | F. his | G. she | H. her |
| I. it  | J. its |        |        |

設問 2. 本文中の( 11 )～( 15 )に当てはまる動詞の適切な活用を A～E から選び, その記号で答えなさい。

- (11) A. had listened      B. have listened      C. having listened      D. listen  
E. listened
- (12) A. had stepped      B. have stepped      C. having stepped      D. step  
E. stepped
- (13) A. am trusting      B. have trusted      C. trust      D. trusted  
E. was trusted
- (14) A. need      B. needs      C. is needed      D. is needing  
E. was needed
- (15) A. don't see      B. have seen      C. see      D. seeing  
E. to see

設問 3. 本文中の( 16 )～( 25 )に当てはまるものを A～J から選び, その記号で答えなさい。ただし重複はしない。

- A. damage      B. intensity      C. miscalculation      D. protective  
E. reassuring      F. scenery      G. sensation      H. thrilling  
I. traffic      J. vulnerable

設問 4. 本文中の( 26 )と( 27 )に当てはまるものを A～E から選び, その記号で答えなさい。

- A. best      B. better      C. less      D. more  
E. most

設問 5. 本文中の( 28 )と( 29 )に当てはまるものを A～E から選び, その記号で答えなさい。

- A. don't      B. may      C. may not      D. will  
E. won't

設問 6. 下記の英文 1～10 の内容について、A～C の中で該当するものを選び、その記号で答えなさい。

- A. 本文で述べられている内容と一致している。
- B. 本文で述べられている内容と一致していない。
- C. 本文で述べられている内容では判断できない。

1. The writer's fear of motorbikes was based on her personal experience.
2. The writer was appropriately dressed for the motorbike ride.
3. The writer tapped Steve on the shoulder when she wanted him to stop.
4. The writer was determined not to pull the safety cord of her parachute.
5. The writer's fear diminished the impact of her experience.
6. It is illegal to hunt tigers these days because they are an endangered species.
7. Civilization has deprived us of primitive thrills such as hunting wild animals.
8. We are seeking to replace new thrills — such as bungee jumping, white-water rafting, or riding a powerful motorbike — with the powerful emotions that our ancestors experienced.
9. Modern activities such as bungee jumping, white-water rafting, or riding a powerful motorbike are preferable to hunting wild animals.
10. Activities such as bungee jumping, white-water rafting, or riding a powerful motorbike are substitutes for thrilling adventures that we can no longer experience due to modernization.

設問 7. 著者によると、“bungee jumping”と“white-water rafting”と“riding a powerful motorbike”の共通点はどれか。A～E から 2 つ選び、その記号で答えなさい。

- A. They are interactive forms of entertainment.
- B. They are relatively inexpensive pastimes.
- C. They satisfy our desire for powerful emotions.
- D. They are effective ways to relieve stress.
- E. They involve a certain amount of risk or danger.

設問 8. 下線部 ㊤ の意味に沿うように ( 1 )～( 4 ) に入る適切な英単語を書きなさい。

A thrill begins with fearful anticipation, ( 1 ) by an extreme ( 2 ) sensation, and ends with intense joy and ( 3 ) at having ( 4 ) the experience.

2 次の英文を読んで設問に答えなさい。(90点)

① Researchers once saw an elephant pick up some food and place it into the mouth of another whose trunk was badly injured. “Elephants show empathy,” African elephant researchers Richard Byrne and Lucy Bates state plainly. They aid the sick. They help one another.

More mysteriously, elephants sometimes help people. George Adamson, who helped ( 1 ) the famous lion Elsa of the book *Born Free*, knew an elderly, half-blind African woman who had ( 2 ) off a path; nightfall caused her to lie down under a tree. She ( 3 ) in the middle of the night to see an elephant towering over her, sniffing her up and down with its trunk. She was paralyzed<sup>(註)</sup> by fear. Other elephants ( 4 ), and they soon began ( 5 ) branches and covering her. The next morning, her faint cries ( 6 ) a herder<sup>(註)</sup>, who ( 7 ) her from the cage of branches. Had the elephants mistaken her for dead and ( 8 ) to bury her? That would have been strange enough. Had they ( 9 ) her helplessness and, in empathy and perhaps even compassion, ( 10 ) her in protection from hyenas and leopards? That would have been stranger still.

In *Coming of Age with Elephants*, Joyce Poole writes ( 11 ) a herder whose leg was broken ( 12 ) an accidental confrontation with a female elephant. Discovered ( 13 ) a tree ( 14 ) with an aggressive elephant, the herder signaled ( 15 ) the search party not to shoot. ( 16 ) he explained that, ( 17 ) striking him, the elephant had realized that the herder could not walk and, using her trunk and front feet, had gently moved him a short distance and placed him in the shade of the tree. Occasionally touching him ( 18 ) her trunk, she'd guarded him ( 19 ) the night, though her family left her ( 20 ).

Empathy seems quite special. Many believe that empathy “makes us human.” Fear, on the other hand, might be the oldest, most widespread emotion. So it's surprising to learn this: fear and empathy are closely related, and fear is a kind of empathy. Empathy is the ability to match the emotional state of another. When a flock of birds suddenly flies off because one of them startles, the spread of emotion is called “emotional contagion.” Infant crying works by emotional contagion, spreading distress to the parent. Picking up on another's distress or alarm requires your brain to match their emotion. That's empathy. When your companion's fear gets you scared, that's empathy. They yawn<sup>(註)</sup> and you yawn — empathy. Empathy's roots go all the way back to contagious fear. Yes, empathy is special; it just happens to be common.

In a recent study, one-year-old children, dogs, and cats all attempted to comfort “( 21 )” family members — who acted like they were crying, pained, or choking — by, for

example, putting their ( 22 ) on the person's lap<sup>(注)</sup>. Humans and apes who view emotionally charged images respond with similar ( 23 ) in brain and skin ( 24 ). People's expressions respond to differing ( 25 ) of people shown so ( 26 ) that the subjects can't ( 27 ) see the image. Conclusion: empathy is automatic. No ( 28 ) needed. The brain ( 29 ) creates the mood match, then makes you aware of the ( 30 ).

We often use the word "empathy" interchangeably with "sympathy" or "compassion." But I'd like to distinguish a scale of feeling for others. *Empathy* is a mood-matching sense of a shared feeling. I'm ( 31 ) if you're frightened; ( 32 ) when you're happy; ( 33 ) when you are sad. ( 34 ) is concern for another who is distressed. It's a bit detached; your feeling might not match the other's emotion — "I am ( 35 ) to hear your great-grandmother passed away." You don't share their sadness, but you sympathize. *Compassion* is sympathy plus motivation to act: "Seeing you in such pain makes me want to help." You buy a sandwich for a homeless person or sign a petition<sup>(注)</sup> to help save whales. Of course, the words "empathy," "sympathy," and "compassion" label interwoven<sup>(注)</sup> feelings. But if compassion is a desire to act toward easing another's suffering, an elephant that protects a lost old woman feels — and exhibits — the full range from empathy to sympathy to compassion in action.

(Safina, Carl, *Beyond Words: What Animals Think and Feel* より。

ただし出題にあたり本文の趣旨を変えない範囲で一部改変した。)

(注) paralyzed : 麻痺した      herder : 牛飼い      yawn : あくびをする  
lap : ひざ      petition : 嘆願書      interwoven : 混ぜ合わされた

設問 1. 本文中の( 1 )～( 10 )に当てはまる適切なものを A～J から選び、その記号で答えなさい。ただし重複はしない。

A. attempted      B. attracted      C. breaking      D. enclosed  
E. gathered      F. raise      G. released      H. sensed  
I. wandered      J. woke

設問 2. 本文中の( 11 )～( 20 )に当てはまる適切なものを A～J から選び、その記号で答えなさい。ただし重複はしない。

A. about      B. after      C. along      D. behind  
E. in      F. later      G. through      H. to  
I. under      J. with

設問 3. 下記の1～5の英文の内容について、A～Cの中で該当するものを選び、その記号で答えなさい。

- A. 本文で述べられている内容と一致している。
- B. 本文で述べられている内容と一致していない。
- C. 本文で述べられている内容では判断できない。

1. Parents are more likely to feel empathy than people who don't have children.
2. If you feel afraid because your friend is afraid, you are experiencing empathy.
3. Fear's roots go all the way back to contagious empathy.
4. The origins of empathy can be found in contagious fear.
5. Humans commonly feel empathy but other creatures rarely do.

設問 4. 本文中の( 21 )～( 30 )に当てはまる適切なものをA～Jから選び、その記号で答えなさい。ただし重複はしない。

- |                  |             |                |             |
|------------------|-------------|----------------|-------------|
| A. automatically | B. briefly  | C. consciously | D. changes  |
| E. distressed    | F. emotion  | G. head        | H. pictures |
| I. temperature   | J. thinking |                |             |

設問 5. 本文中の( 31 )～( 35 )に当てはまる英単語を書きなさい。

設問 6. 次の質問に記号A～Cで答えなさい。

According to the author's definition of empathy, sympathy and compassion, which one of the three words best describes the motivation of the elephant in the underlined sentence (Researchers once saw an elephant pick up some food and place it into the mouth of another whose trunk was badly injured)?

- A. empathy            B. sympathy            C. compassion



3 次の英文1～5の( )の中に当てはまる適切なものをA～Eから選び、その記号で答えなさい。(15点)

1. "Ivory<sup>(註)</sup> is illegal; don't buy it" is a clear message to ( ), law enforcers, and governments.  
A. creators B. hunters C. journalists D. consumers E. economists
2. In Kenya alone, 300,000 people are ( ) on tourism for employment, and every tourist comes wanting to see elephants.  
A. declaring B. dependent C. determined D. differing E. environmental
3. For centuries, the Masai's ( ) for fierce behavior toward outsiders kept their land open and full of wildlife.  
A. contrast B. connection C. courage D. relationship E. reputation
4. The Central African Republic had an elephant ( ) approaching 100,000 that fell below 15,000 during the ivory crisis of the 1980's.  
A. area B. background C. industry D. population E. survey
5. The only thing that has ever worked in limiting elephant deaths due to the ivory trade was a worldwide ivory ( ), first put into effect in 1990.  
A. behavior B. ban C. experience D. tour E. invention

(注) ivory : 象牙

4 下記の英文1～10にはそれぞれ必要な単語がひとつ不足している。不足している単語を下記の中から選び、挿入すべき場所の【直前の単語】と【不足している単語】をそれぞれの解答欄に記載しなさい。単語は重複してもよい。(20点)

about against a(n) by from in into of since the

1. The source of Lassa fever has been discovered a small mouse that searches for food in and around dwellings in West Africa.
2. As the New World was reaching a new environmental balance, Europeans were busy exploring rest of the globe.
3. The average life span has almost doubled the 19th century, and many doctors have never seen the diseases that terrorized their parents.

4. One of the first signs a failing health system is the spread of infections carried in water or food.
5. In the early 1990s, there were still more than 100,000 cases of polio year, most of them in Africa, India, and China.
6. Millions of hospital infections occur each year in the United States: according to recent report, one in 25 patients is affected.
7. We cannot escape from disease moving to a suburb or even a wilderness.
8. Viruses play a role an estimated 15 to 20 percent of human cancers.
9. There are five or possibly six kinds of hepatitis<sup>(註)</sup> caused different and unrelated microbes.
10. When antibiotics<sup>(註)</sup> first became available in the 1940s they were marvelously effective the most common infectious diseases.

(注) hepatitis : 肝炎      antibiotics : 抗生物質

**5** 次の英文 1～5 が適切な意味になるように(      )の中の語を並べ替えなさい。(15点)

1. If you were to stretch flat all the membranes<sup>(註)</sup> of an adult's lungs, (over, thousand, feet, occupy, would, square, a, they).
2. Lungs (the, dense, are, body, least, human, in, organs, the) because they are composed almost entirely of air.
3. The bear is (mammals, upright, to, few, one, walk, the, able, of).
4. The most ancient footprints of hominids<sup>(註)</sup> that we know about are those that were made more than three and a half million years ago. Now (moon, on, dust, footprints, there, the, in, the, are) that will outlast<sup>(註)</sup> all of us.
5. Brain tissue can survive for only a few seconds without blood, but the human kidney<sup>(註)</sup> is a lot tougher — if kept cold (or, hours, for, twelve, survive, a, more, can, kidney).

(注) membranes : 膜      hominids : ヒト科の総称  
 outlast : より長く存在する      kidney : 腎臓

白 紙

6 次の英文を読んで設問に答えなさい。(60点)

【A】 Animal weight goes up and down — in some cases dramatically and several times throughout the year. Throughout the animal kingdom, this is a sign of health. Indeed, zoo nutritionists do not set single weight goals for the animals in their care. They establish weight ranges, and they worry if animals from giraffes to snakes don't move from one end of their range to the other, depending on the season and life stage.

In the wild, males of many species fatten in the weeks prior to mating season. Female animals store body fat to nourish eggs and support milk production to provide for their young. Hibernation<sup>(註)</sup> requires a tremendous shift in body mass to support a months-long fast<sup>(註)</sup>. Migration<sup>(註)</sup>, too, triggers key fattening and thinning cycles. And among the most metabolically taxing<sup>(註)</sup> moments in any animal's life are its first few hours or weeks after being born. Infancy is a time of peak fatness for many creatures, from nestling birds to newborn humans.

Even insects' body fat goes up and down during critical phases of their lives. Some fatten before metamorphosis<sup>(註)</sup> or laying eggs. With adequate nutrition, bees produce fat in bulk: honeycomb wax is a form of fat. And fat exists in plants, too — as waxy, waterproof coatings on leaves and fuel packs in seeds.

But nature imposes its own “weight-maintenance plan” on wild animals. Cyclical periods of food scarcity are typical. Threats from predators<sup>(註)</sup> limit access to food. Weight goes up, but it also comes down. If you want to lose weight the wild animal way, decrease the abundance of food around yourself and interrupt your access to it. And expend lots of energy in the daily hunt for food. In other words: change your environment.

【中略】

【B】 Some animal intestines<sup>(註)</sup> perform an amazing trick. They expand and contract like accordions. This may not sound all that impressive, but its effect on weight can be profound. It allows the body to absorb varying quantities of calories from the same food, depending on the task at hand.

The mechanism is simple: a ribbon of muscle running the length of the intestine allows it to contract and expand. When intestines are clenched, they're shorter, tighter, and smaller. When relaxed, they're longer.

When intestines are in the longer, stretched-out mode, they expose more surface area to the food passing over them. This allows the cells to extract more nutrients and, therefore, energy. When the intestines shrink back to their shortened state, some of the food passes by essentially unused.

The intestines of some small songbirds increase by 25 percent during the weeks right before they migrate, when fattening quickly is crucial to power their journey. Similarly, the intestinal surface area of certain water birds nearly doubles while they are feeding before migration. When they've fattened enough to fuel a long flight, the birds' intestines shrink back down again.

The ability to lengthen and shorten intestines has also been observed in fish, frogs, and mammals, including squirrels and mice. Jared Diamond, a UCLA physiologist and author, has studied python intestines for clues to how these snakes can go months between meals. Like those of birds and small mammals, pythons' intestines are dynamic, responsive organs, able to dramatically increase in size depending on what and when food is passing through.

(Natterson-Horowitz, Barbara and Bowers, Kathryn, *Zoobiquity: What animals can teach us about being human* より。ただし出題にあたり本文の趣旨を変えない範囲で一部改変した。)

(注) hibernation : 冬眠      fast : 絶食      migration : 人や動物の移住, 渡り  
metabolically taxing : 代謝の面で負担がかかる      metamorphosis : 生物の変態  
predators : 捕食者      intestine : 腸

設問 1. 本文の前半部【A】の文章を読んで、次の(1)から(10)の内容について該当するものを下のA～Cから選びなさい。

- A. 本文で述べられている内容と一致している。
- B. 本文で述べられている内容と一致していない。
- C. 本文で述べられている内容では判断できない。

- (1) 野生動物では体重の変動が少ない事は健康である事を意味する。
- (2) 雄は繁殖期に入ると体重が増え始める。
- (3) 動物園の動物の目標体重は一定になるように人為的に調整されている。
- (4) 季節やライフステージによってキリンや蛇たちの体重に変動がないと栄養士は心配する。
- (5) 年間を通して複数回の体重変動をきたす動物の多くは、春と秋に体重が減る。
- (6) 雌は子供に母乳を与えるために太る。
- (7) 冬眠中は絶食しても体を動かすことがないので、体重を増やしてそなえる必要はない。
- (8) 動物の移住(渡り)も体重増減のサイクルの原因となる。
- (9) 代謝の面で最も負担がかかるのは、生後数時間から数週間の時期である。
- (10) 昆虫でおきる体重の増減の割合は哺乳類より大きい。

設問 2. 本文の前半部【A】の文章の中で、下線部 “weight-maintenance plan” の例としてあげられているのは何か。日本語で説明しなさい。<sup>[1]</sup>

設問 3. 本文の後半部【B】の文章を読んで、動物の消化器の大きさや機能の変化の仕組みと、それが体重に与える影響について、日本語で要約して説明しなさい。