

英 語 問 題 紙

経済学部 1・2 部

経営学部 1・2 部（経営学科）

工学部（社会環境工学科 社会環境コース）
電子情報工学科

2024 年 2 月 10 日

14:10～15:10（60 分）

注 意 事 項

1. 英語の問題紙は全 14 ページである。

問題は学部（1・2 部の区別を含む）によって異なる。受験者は下表にしたがって問題に解答すること。

学 部 名	問 題
経済学部 1 部 経営学部 1 部（経営学科） 工学部（社会環境工学科 社会環境コース） 電子情報工学科	1 2 3 4 5 6
経済学部 2 部 経営学部 2 部（経営学科）	1 2 3 4 5

2. 解答は選択肢の中から選び、その記号を解答用紙の指定された欄にマークすること。
3. 試験開始の合図があるまで問題紙を開いてはいけない。
試験終了まで退室してはいけない。

次の英文を読み、設問に答えよ。

The Secret to Getting More out of Exercise

Thousands of us have started 2023 with new exercise programs promising to get us fit, muscle-bound, and slim. But the latest science of chrono-activity suggests that what really counts isn't what we do, or even how we do it, but when we do it. Of course, moving at any time of the day is good. But we now know that our bodies and brains change over the course of 24 hours, with chemicals, proteins, and hormones increasing and decreasing almost hour by hour. And that means faster results—and less time in the gym.

A new study published in the *European Journal of Preventive Cardiology* found that, for those of us wanting to prevent heart disease and stroke, the optimal time of day to move is between 8 am and 11 am. And preferably closer to 11 am: “The late morning seemed to be the most ideal timing,” explained study author, Gali Albalak. Albalak and her colleagues monitored 86,657 participants (aged 42–76) over a period of six years, using heart-rate data collected from wrist trackers. The data showed the same results, irrespective of personal body clock. In other words, owls (night people) benefited as much as larks (morning people) from morning movement.

Women appeared to benefit the most, reflecting earlier studies that also found morning to be a particularly effective time for females. A report from Skidmore College in the US found that women who exercised in the morning shed more abdominal fat than women who exercised later in the day. The female morning movers were also more likely to lower their blood pressure. So, should we all, regardless of sex, be exercising in the morning and putting our feet up in the evening? Not so fast. When it comes to men, or those with type 2 diabetes, the data shows a different picture. The Skidmore College researchers found that men who exercised later in the day markedly reduced their blood pressure, cholesterol, body fat, and feelings of fatigue.

There's another reason women might not want to shake their booty in the morning and then lie about on the sofa. For both sexes, the optimal time for building and preserving muscle appears to be later in the day. From the age of 30, our muscles start to atrophy, decrease in size, a process that accelerates after the age of 60. All of us should be lifting some weight or doing some resistance work at least once a week. Multiple studies suggest that afternoons and evenings are the best time to do this: our muscles increase in strength during the day, so that by late afternoon, they are at peak fortitude, enabling us to lift more, for longer. This means that we build muscle more effectively and efficiently, and with less perceived effort, towards the end of the day. Again, studies indicate that the benefits of resistance and strength training, done in

the evening, are more pronounced for women, although it's not clear why.

Thankfully, lengthy weight-training sessions are no longer necessary. The current trend for micro-dosing (10–15 minute sessions a few times a week) arose after studies showed short, frequent workouts to be as effective as hour-long sessions. Lifting hand weights or working with a resistance band during the first 10 minutes of your favorite TV program is enough to keep muscles from weakening. For extra efficiency, use heavier weights or movements that work multiple muscles in a single go. Sports scientists call these multi-joint exercises—squats, lunges, and push-ups, for example.

Again, anyone diabetic or pre-diabetic should consider some gentle movement after dinner, when our resistance to changes in blood sugar levels (glucose tolerance) is typically lower, and when large, starchy meals can trigger hefty blood sugar spikes. Incidentally, evidence suggests—for diabetic men—afternoon exercise is best for improving blood glucose levels, while mornings are the least effective.

There's just one period of time when physical exertion is consistently deemed detrimental to our health: between the hours of midnight and 6 am. Albalak's study found that moving during these hours was associated with a greater risk of heart disease and stroke. During the night, our bodies shift into rest-and-repair mode, and while a gentle walk won't hurt, your body won't thank you for doing jumping jacks at 3 am.

What about stretching? Again, studies indicate that evening may be the better time. Our joints and muscles increase in flexibility as the day goes by, peaking at 7 pm. Some researchers speculate that the greater flexibility accompanying dusk may be the result of certain hormones peaking at this time and rendering our bodies less stiff. This means we can stretch more deeply, with a greater range of motion, and with less chance of injury. As well as relaxing the body before bed, stretching at night reduces muscle tension and tightness the following morning,

If we want to shift our circadian clock—to wake up more easily early in the morning, or to overcome jetlag, for example—moving at specific times of the day can help. According to neuroscientist Jennifer Heisz, exercising at 7 am or between 1 pm and 4 pm will help shift our body clock back. If we need to adjust our bodies to a later wake-up time, she suggests working out between 7 pm and 10 pm.

So how might a chrono-inspired day look? A brisk walk or cycle (or house clean) between 8 am and 11 am, then an after-dinner stroll, followed by a few multi-joint strength exercises, and finally a spot of stretching before bed. But, as Albalak reminds me, the most important thing is to move regularly during daylight hours, at times that work for our individual schedules. She

suggests that retired people, or those on more flexible schedules, experiment with chrono-activity, and that the office-bound try it at the weekend. Either way, understanding the chrono-tendencies of our own bodies might just mean we can achieve more by doing less. And who doesn't want that?

問1 *Choose the best answer based on the reading.*

1. What does the term 'chrono-activity' refer to?
 - A. The fast activities we do in the gym.
 - B. The increase in our body's rhythms throughout the day.
 - C. The movement of our bodies that is linked to the time of day.
 - D. The types of movement we do to suit our brains.
2. According to Albalak's research, what is helpful to reduce the risk of heart disease and strokes?
 - A. Respecting your personal body clock.
 - B. Exercising in the morning.
 - C. Monitoring heart rate in the morning.
 - D. Wearing wrist trackers to monitor heart rate.
3. A college report shows that ...
 - A. women can reduce their waistlines by exercising before midday.
 - B. raising blood pressure results from early afternoon activity.
 - C. owls benefit less than larks from exercise anytime in the morning.
 - D. personal exercise routines should not be based on your chronobiology.
4. To reduce atrophy, the article recommends ...
 - A. shaking your boots off while sitting on the sofa.
 - B. taking advantage of increased afternoon capability.
 - C. using heavy weights avoiding multi-joint exercises.
 - D. walking faster after the age of 60.
5. The current trend in weight training is ...
 - A. working out longer for better effects.
 - B. training more often for shorter periods.
 - C. watching 10 minutes of TV before training.
 - D. avoiding heavy weights and multi-joint exercises.

6. What is good advice for (pre-)diabetic people?
- A. Eat starchy meals.
 - B. Do hard exercises in the morning.
 - C. Take a walk after dinner.
 - D. Take a nap before dinner.
7. What happens when we exercise just after midnight?
- A. Our bodies thank us.
 - B. Our health may be negatively impacted.
 - C. The rest-and-repair mode continues unchanged.
 - D. There is greater chance to reduce heart disease.
8. To get the most out of stretching, what do we need to do?
- A. Do it in the evening.
 - B. Measure our hormone levels.
 - C. Measure our sugar levels.
 - D. Take more hormones in the evening.
9. To overcome jetlag when flying from Japan to Europe, you should . . .
- A. wake up later.
 - B. work out at 7 am.
 - C. study between 7 pm and 10 pm.
 - D. move at any time of the day.
10. What is the key to a successful exercise schedule?
- A. Stretch in the morning and jog in the evening.
 - B. Exercise only at the weekends if you are office-bound.
 - C. Experiment with workout exercises and find what works for you.
 - D. Fit daily activity into your schedule.

問2 Complete the following table.

Take-away advice from the article
Men and people with diabetes benefit by exercising (11).
Women tend to benefit more than men by (12) in the evening.
Stretching in the evening may be more beneficial due to (13).
According to Albalak, (14) should experiment with chrono-activity every day.

11. A. as early as women
B. as late as women
C. earlier than women
D. later than women
12. A. walking and cycling
B. weight training
C. running
D. stretching
13. A. hormone levels
B. glucose levels
C. stress levels
D. blood pressure levels
14. A. men
B. women
C. those whose daily routines are more accommodating
D. those who work at an office desk

問3 Mark A for TRUE and B for FALSE for each of the following statements.

15. Morning people tend to benefit more than night people by exercising in the morning.
16. The process of muscle atrophy starts to quicken after the age of 30.
17. Multi-joint exercises are movements that work multiple muscles.
18. Morning is the time when our joints and muscles increase in flexibility.

2

次の 19 ～ 26 の 空所に入れる語句として最も適切なものを A ～ D の中から選べ。

19. X: How did the novel end? What happened to the characters?
Y: They overcame a lot of () and married each other.
A. strategies B. fortune C. obstacles D. encouragement
20. X: Your mother's operation has gone well.
Y: Thank you, Doctor. I'm () to hear that.
A. relieved B. relaxed C. complicated D. spontaneous
21. X: Why does Seth look so busy these days?
Y: Well, he wants to go to Harvard University and he needs to finish the () process by Monday.
A. application B. implication C. regulation D. completion
22. X: How do you like the dish?
Y: I love it. It has () hint of lemon.
A. an enormous B. an integrative C. a subtle D. an awkward
23. X: David has changed his hair color.
Y: I didn't recognize him () when he came into the classroom.
A. gradually B. instantly C. considerably D. exclusively
24. X: What message do you think the author is trying to communicate in her book?
Y: I have no idea. It's always hard to know her ().
A. evolution B. infection C. intention D. medication
25. X: Professor, I know the assignment is due next week but I have three other assignments also due next week.
Y: So, do you need a short ()?
A. extension B. inclusion C. exception D. vacation
26. X: Can I play the trumpet in this room?
Y: Oh, I'm afraid the sound will () students studying in other rooms.
A. consume B. infect C. distract D. convince

次の 27 ～ 36 の空所に入れる語句として最も適切なものを A ～ D の中から選べ。

27. X: What do you do to stay in good shape?

Y: Regular exercise. I ().

- A. try to work every day out B. try to every day work out
C. every day try to work out D. try to work out every day

28. X: I heard your sister is going to music school next year.

Y: Yes, she's determined to be () musician in the future.

- A. a professional B. professional
C. the professional D. that professional

29. X: The movie starts at 10:30.

Y: We should leave early () there's traffic.

- A. though B. when C. in case D. while

30. X: I've been having trouble sleeping recently.

Y: You () want to consider adjusting your sleep schedule.

- A. might B. will C. should D. do

31. X: Why don't you have your group report with you?

Y: My classmate () to send me his part of the report yesterday, but he didn't.

- A. supposed B. is supposed
C. was supposed D. had been supposed

32. X: Can I talk to you for a moment?

Y: I'm actually busy right now. Can you come back () half an hour?

- A. on B. in C. at D. from

33. X: You seemed unsure when he was explaining things.

Y: I couldn't believe it at first, but everything () said was true.

- A. what he B. about which he
C. he D. that

34. X: I heard you cycled to Asahikawa last weekend. How was it?

Y: It was really tough. It () me all day!

- A. takes B. has taken C. took D. had taken

35. As a rule of (), you need three grams of tea leaves per cup.
A. thumb B. hand C. foot D. head
36. I didn't go to that concert because classical music isn't really my cup of ().
A. cocoa B. coffee C. tea D. water

それぞれの会話の空所に入れる最も適切な選択肢を A ～ Dの中から選べ。ただし、同じ選択肢が2箇所に入ることはない。

Receptionist: Hokkai English School. How may I help you?

Mika: I'm calling to ask you about the English course timetables for beginners. (37)

Receptionist: Great. Which course are you interested in? We have both morning and evening courses designed for beginners.

Mika: I'd like to know how often the classes are held. (38)

Receptionist: Unfortunately, our classes are only offered once a week for 50-minute lessons. I should also mention that the morning courses won't start until August, while the evening courses will start next week.

Mika: (39) I'd really like to start as soon as possible.

- A. I'd like to take classes twice a week.
- B. Can I sign up for the morning courses?
- C. In that case, the morning courses won't work for me.
- D. A friend of mine gave me a brochure about your courses.

Taku: Excuse me, officer? (40) I think someone stole my bike from the parking lot at the mall.

Officer: I see. Before getting your personal information, I'd like to know more details about the incident. When did you notice the bike was missing?

Taku: It happened sometime between 2 and 3 pm today while I was inside the mall. (41) But when I returned it was gone.

Officer: Could you describe your bike?

Taku: It's a Yamaha electric bike, the BCD 500 model.

Officer: Really? That's quite a nice bike.

Taku: (42) I borrowed it because my own bike is being repaired.

- A. Well, actually, it's my grandma's.
- B. I asked the store manager about it.
- C. I need to report a missing bicycle.
- D. I had my bike securely locked up.

5

次の文章の空所に入れる文として最も適切なものをA～Dの中から選べ。ただし、同じ文が2箇所に入ることはない。

Urban agriculture mostly involves growing plants within a city or a town. It can be done by individual families and large companies. The most common approaches are through backyard and community gardens. These are highly beneficial to families and small communities from a social aspect. (43) Another common approach is through street landscaping, which also tends to be a community activity, and which makes streets look beautiful, purify the air, and reduce urban stormwater runoff. Also popular in larger cities are rooftop gardens. These make use of empty spaces on top of buildings, and are effective in lowering high urban temperatures and improving air quality. Less common, but extremely important to the environment as a whole, is urban beekeeping. (44) However, controlling bees requires expert knowledge, and obviously comes with a lot of restrictions and regulations from local governments. (45) In other words, it is a very effective way to counter global warming and protect our environment.

- A. These valuable insects not only produce honey, but are essential to agriculture.
- B. Urban agriculture has great potential to fulfill basic human needs, such as providing food and reducing transportation costs.
- C. Neighbors, for example, can share each other's garden products and new farming methods.
- D. Participants can earn a lot of money by selling their own produce online.

Autumn 2023

Celebrating Our Renovated Food Court's First Six Months

The University Food Court officially reopened its doors on April 1, 2023. In addition to our popular restaurants, the new facility now includes a café and a free access open area for all students. It is a spot where you can hang out with friends or work on assignments. The café is conveniently located next to large windows if you want to enjoy the stunning view of the campus.

The creation of this new food court was a project that began in April 2020. Our college initially lacked a communal area or café where students could gather. This project was initiated due to multiple requests from students and faculty members. At first, the plan was to simply create a café, but due to strong requests by students, an open area was added. Although there were some challenges along the way, since its opening six months ago, more people than expected have been visiting the food court daily, including neighborhood residents. User satisfaction has been extremely high, and we hope this facility will continue to be well-used. A 10% discount coupon will be distributed to current students and faculty throughout October 2023 to celebrate the food court's first six months. To receive a discount coupon, please check the university portal site for instructions. The coupon will be valid until October 31.

- ★This food court is open from 9:00 am to 9:00 pm every day except Sunday.
- ★The café operates from 9:00 am to 6:00 pm on weekdays.
- ★You are welcome to bring your food and drink, but please refrain from bringing any strong-smelling food.
- ★Playing music and videos is generally discouraged, although you may be granted special permission by contacting the university office.
- ★The space may also be used for events. Please contact the university office for information on how to obtain permission.
- ★If other users are frequently disturbed by your behavior, your access to this facility may be restricted.
- ★If you notice or witness anything out of the ordinary, please report the incident to the university office.

46. How long did the renovation project take?
- A. One year.
 - B. Two years.
 - C. Three years.
 - D. Four years.
47. The original plan was to . . .
- A. create a café.
 - B. create an open space.
 - C. make music equipment available.
 - D. give neighbors access to the university.
48. Since the opening of the new food court, users have . . .
- A. not been satisfied.
 - B. been incredibly satisfied.
 - C. not shown much interest.
 - D. been largely unaware of it.
49. The coupon will be valid until . . .
- A. the beginning of April.
 - B. the end of April.
 - C. the beginning of October.
 - D. the end of October.
50. On which of the following days is the food court closed?
- A. Monday.
 - B. Wednesday.
 - C. Saturday.
 - D. Sunday.
51. What should people do to play music or show a movie in the space?
- A. They are free to do so whenever they want.
 - B. No public screenings are allowed.
 - C. They just have to be mindful of other people.
 - D. They must ask for permission from the office.

52. Which of the following activities can students do in the food court?
- A. Hang out their laundry.
 - B. Bring strong-smelling food.
 - C. Do homework with friends.
 - D. Visit the neighbors.

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