

# ① A 2023年度 英語

## 医療・保健系統(医学部医学科受験者用)

問題冊子 (1～8ページ)

### 注意事項

- (1) 試験開始の合図があるまで、この問題冊子の中を見ないこと。
- (2) 試験中に問題冊子の印刷不鮮明、ページの落丁・乱丁および解答用紙の汚れ等に気付いた場合は、手を挙げて監督者に申し出ること。
- (3) 解答は別に配付する解答用紙の該当欄に正しく記入すること。ただし、解答に係のない語句・記号・落書き等は解答用紙に書かないこと。
- (4) 解答用紙上部に印刷してある受験系統コード、受験番号、氏名(カタカナ)を確認し、氏名欄に氏名(漢字)を記入すること。もし、印刷に間違いがあった場合は、手を挙げて監督者に申し出ること。

#### [解答用紙記入例(選択式の場合)]

例 1. [語群]が二桁で 11 大阪 12 佐賀 13 長崎 14 東京 とある場合

	A		B		C	
問 X	16 /	17 2	18 /	19 4	20 /	21 /

Aの解答が佐賀の場合 → (17)  
 Bの解答が東京の場合 → (19)  
 Cの解答が大阪の場合 → (21)

例 2. [語群]が一桁で 1 大学 2 中学校 3 高校 4 小学校 とある場合

	a	b	c
問 X	51 /	52 4	53 2

aの解答が大学の場合 → (51)  
 bの解答が小学校の場合 → (52)  
 cの解答が中学校の場合 → (53)

〔Ⅰ〕 次の英文の下線部を和訳せよ。

The great paradox of the brain is that everything you know about the world is provided to you by an organ that has itself never seen that world. The brain exists in silence and darkness, like a prisoner in a dungeon. It has never felt warm sunshine or a soft breeze. The brain has been described as a hungry organ. It makes up just a tiny part of our body weight, but uses 20 per cent of our energy. In newborn infants it's no less than 65 per cent. That's partly why babies sleep all the time — their growing brains exhaust them — and why they have a lot of body fat, to use as an energy reserve when needed. Your muscles actually use even more of your energy — about a quarter — but you have a lot of muscle; per unit of matter, the brain is by far the most expensive of our organs.

注 dungeon 地下牢

breeze そよ風

[出典：Bryson, Bill (2019). *The Body: A Guide for Occupants*. Transworld に基づく]

〔Ⅱ〕 次の英文の内容と合致するものを下の 11～20 の中から四つ選び、その番号を記入せよ。

Last year was a record breaker for the UK's wind-power industry. Wind-power generation reached its highest ever level on December 18, while wind power achieved its biggest share of UK electricity production on August 26. Occasionally the huge wind farms on the sea create far more electricity than the country can consume, such as during the first Covid-19 lockdown last spring when demand for electricity dropped. But what if you could use that excess power for something else?

“What we're aiming to do is create hydrogen directly from wind over the ocean,” says Stephen Matthews, whose firm's project, Dolphyn, aims to fit floating wind turbines with equipment to remove salt from seawater, and machines to split the resulting freshwater into oxygen and the sought-after hydrogen.

The idea of using excess wind energy to make hydrogen has sparked great interest, not least because governments are looking to move towards greener energy systems within the next 30 years, under the terms of the Paris climate agreement. Hydrogen is predicted to be an important component in these systems and may be used in vehicles or in power plants. But for that to happen, production of the gas will need to dramatically increase in the coming decades. Mr. Matthews says his firm's project is just getting started, with an experimental system using a floating wind turbine planned but not yet built. It's possible that the system could be based in Scotland, and the aim is to start producing hydrogen around 2024 or 2025.

But there are many other ventures in this area besides Dolphyn. Wind turbine maker Siemens Gamesa and energy firm Siemens Energy are investing 120 million euros into the development of an ocean-based turbine that can produce hydrogen. Global engineering company Tractebel is exploring the

possibility of building a large-scale, offshore hydrogen production plant powered by nearby wind turbines, and UK-headquartered Neptune Energy is seeking to convert an oil platform into a hydrogen production station, which will send hydrogen to Dutch cities via pipes that are currently transporting natural gas.

The excitement around combining wind energy with hydrogen-generation systems is partly because of climate commitments, but economics are also involved. Large-scale hydrogen-producing equipment is becoming more available while the cost of installing wind turbines has fallen dramatically, says James Carton, assistant professor in sustainable energy at Dublin City University. He and others think the time is right to begin large-scale hydrogen production at sea, though the idea has been around for many years.

Among the many potential uses for hydrogen is as a fuel for gas heaters in homes. Converting the domestic gas network to provide hydrogen, and fitting homes with heaters capable of burning it, would be a huge task. However, it would mean that excess wind energy could in principle be used to supply this giant system, meaning very little of that energy would go to waste, says Mr. Carton.

For some, this is all very exciting. But there are difficulties yet to overcome. A spokesman for the wind energy industry organisation WindEurope says that a decade or so of technological development is required before these systems will have a larger impact. Jon Gluyas, professor at Durham University, adds that the real question is whether it is cost-effective to set up such equipment on a large scale. Ultimately, Prof. Gluyas says a mix of different technologies and approaches will be needed for countries like the UK to meet their climate commitments. For Mr. Carton, the vision remains exciting. Schemes that solve the problem of wind's variability by putting excess power to good use could be transformative, he argues: "It'll change the way we look at renewable energies."

注 hydrogen 水素

turbine タービン(水や空気の力で回転する原動機)

[出典 : Chris Baraniuk, “The Global Race to Produce Hydrogen Offshore” *BBC*. 2021.  
<https://www.bbc.com/news/business-55763356> に基づく]

11. Due to Covid-19, the demand for electricity increased, but wind-power stations on the sea produced enough electricity to meet the demand.
12. In a project called Dolphyn, a floating turbine can create hydrogen from seawater without getting rid of salt.
13. Using hydrogen as energy is environmentally friendly, and its use is expected to increase in the future.
14. More equipment for producing hydrogen is being built in Scotland, and will be completed by 2024 or 2025.
15. A company is considering using pipes for sending natural gas to Dutch cities to send hydrogen instead.
16. Recently, the expense of building wind turbines has decreased remarkably.
17. It is easy to use hydrogen at home because most houses already have natural-gas heaters.
18. Using hydrogen as energy is a very exciting idea, but we have to wait to see if it is really affordable.
19. Creating hydrogen at wind-power stations at sea is attracting attention, mainly because it is cost-effective.
20. If wind-power hydrogen production becomes cost-effective, it will eliminate the need to develop other renewable energy technologies.

〔Ⅲ〕 次の(a)~(h)の各文の空欄に入れるのに最も適当な語句を1～4の中から一つずつ選び、その番号を記入せよ。

(a) John and Mary looked ( ) the whole time.

- |                          |                          |
|--------------------------|--------------------------|
| 1. each other's eye      | 2. each others' eye      |
| 3. each other at the eye | 4. each other in the eye |

(b) Bill has the ( ) of a good doctor.

- |               |                    |
|---------------|--------------------|
| 1. characters | 2. characteristics |
| 3. natures    | 4. personalities   |

(c) "Will Mary be promoted to Associate Professor?" "No, I ( )."

- |                     |                     |
|---------------------|---------------------|
| 1. am afraid of not | 2. don't think that |
| 3. think otherwise  | 4. don't know so    |

(d) I've had a pain ( ) neck since this morning.

- |           |           |           |          |
|-----------|-----------|-----------|----------|
| 1. in the | 2. of the | 3. on the | 4. of my |
|-----------|-----------|-----------|----------|

(e) I don't know ( ).

- |                               |                               |
|-------------------------------|-------------------------------|
| 1. a picture of whom Mary has | 2. of whom Mary has a picture |
| 3. who has Mary a picture of  | 4. whose Mary has a picture   |

(f) I remember ( ) being no opportunity to explain to her.

- |       |         |          |            |
|-------|---------|----------|------------|
| 1. it | 2. it's | 3. there | 4. there's |
|-------|---------|----------|------------|

(g) There ( ) to be some problems with this new treatment.

- |                 |          |                  |           |
|-----------------|----------|------------------|-----------|
| 1. was believed | 2. seems | 3. were believed | 4. became |
|-----------------|----------|------------------|-----------|

(h) This sweater is ( ) to wash.

- |              |             |             |         |
|--------------|-------------|-------------|---------|
| 1. difficult | 2. probable | 3. unlikely | 4. like |
|--------------|-------------|-------------|---------|

〔Ⅳ〕 次の(a)～(f)の各組の語について、最も強く発音する音節の母音がA欄と異なる  
ものをB欄の中から一つ選んで、その番号を記入せよ。

A 欄	B 欄	
(a) tech-nique	1. dis-ease	2. es-teem
	3. fe-ver	4. the-sis
	5. vi-rus	
(b) wel-fare	1. den-tist	2. el-bow
	3. med-i-cine	4. pa-tient
	5. weath-er	
(c) ef-fi-cien-cy	1. con-sid-er-able	2. suf-fi-cient
	3. ep-i-isode	4. phy-si-cian
	5. symp-tom	
(d) hand-i-cap	1. a-buse	2. ac-ci-dent
	3. at-ti-tude	4. can-cer
	5. es-tab-lish-ment	
(e) en-ter-tain	1. cam-paign	2. in-ves-ti-gate
	3. na-tive	4. op-er-a-tion
	5. pa-rade	
(f) stom-ach	1. as-sump-tion	2. bal-ance
	3. con-sult	4. mon-key
	5. ov-en	

〔V〕 次の日本語の意味を伝えるように英文の( a )～( f )の空欄に1～7の語(句)を入れ、その番号を記入せよ。なお、使わない語(句)が各問に一つずつある。

A. 出生率の低下と平均寿命の伸びが、より多くの高齢者をより少ない労働人口で支える結果になるであろう。

The fall in the birth rate and the increase in the average lifespan ( a ) ( b ) ( c ) a smaller working population ( d ) ( e ) ( f ) one.

- |             |            |               |         |
|-------------|------------|---------------|---------|
| 1. in       | 2. elderly | 3. result     | 4. will |
| 5. a larger | 6. reach   | 7. sustaining |         |

B. これまでにしたことのないような仕事をするチャンスを与えられた時、「やれるかどうか分からない」と文句を言う人が多い。

When ( a ) ( b ) ( c ) a job ( d ) ( e ) ( f ) before, many of us protest, "I don't know if I can do that."

- |         |          |             |               |
|---------|----------|-------------|---------------|
| 1. we   | 2. give  | 3. offered  | 4. never done |
| 5. have | 6. to do | 7. a chance |               |

C. ある程度の個人的な野心は必要であるけれども、それがチームの共通の目標を台無しにするほどであってはならない。

A certain amount of personal ambition is necessary, but ( a ) ( b ) ( c ) ( d ) it ( e ) ( f ) of the team.

- |               |              |                    |          |
|---------------|--------------|--------------------|----------|
| 1. as long as | 2. the point | 3. to              | 4. ruins |
| 5. where      | 6. not       | 7. the common goal |          |



D. 身体を中程度日光にさらすと，人間の健康に重大な危険を及ぼすということを示す信頼性の高い研究はあるだろうか。

Is there any reliable ( a ) ( b ) that ( c ) ( d ) ( e )  
( f ) a significant risk to human health?

- |             |               |             |        |
|-------------|---------------|-------------|--------|
| 1. exposure | 2. poses      | 3. to       | 4. sun |
| 5. moderate | 6. indicating | 7. research |        |













