

平成 3 1 年 度

編入学試験（学力）問題

英 語（工業） （全学科共通）

・ No. 1 / 3 ~ 3 / 3

（表紙を含み 4 枚綴）

受験番号

※受験番号は全ての問題・解答用紙に記入すること。

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全 学 科 英 語 (工 業)

No. 1/3

[1] 次の英文を読み、下のそれぞれの問いに答えなさい。

According to an urban legend, when a cute pet cat came home all *drenched on a rainy day, its misguided owner put the poor thing into a *microwave oven to dry ①it off. ②Whether this story is true or not, people have tried using microwave ovens for various things, with all kinds of different results.

In a microwave oven, electric waves called microwaves *interact with water *molecules causing them to vibrate rapidly. The temperature rises ③as the molecules continue to vibrate. The heat of water molecules is *transmitted to other molecules, and the total temperature of the object increases. It is through this process that an object is heated.

Therefore, ④if someone was stupid enough to put a wet pet in a microwave oven, it would burn to death quite horribly. In fact, there are many things which should not be put in a microwave oven, for example, food wrapped in an *airtight film or covering. This means that ⑤eggs or sausages should not be overly heated because they may explode due to *vapors being unable to escape when the temperature rises.

Metallic objects such as aluminum foil catch fire almost instantly in microwave ovens. This is because metal contains *electrons that can move freely, so *thermal conduction occurs dangerously fast. Therefore, ⑥it is never a good idea to heat up metal in a microwave.

Microwave ovens do have some uses aside from cooking. When old *lumpy sugar is put in a microwave in an *oven-proof dish without any wrapping and heated for one minute, ⑦it will *revert back to its *granular form as if good as new. A microwave oven is also useful for taking off postage stamps that have been stuck on by mistake. After *moistening the stamp and warming it in the oven for 20 seconds, ⑧it will peel off easily. *Soaking a sponge with water and heating it in a microwave is a good way to *sterilize ⑨it. Who knew microwaves could be so useful?

Now here's something to consider – what would happen if ice is heated in a microwave oven? Will the ice melt immediately, or will the vapor-filled air suddenly explode due to the *intense heat given off by the oven?

(⑩) answer is correct. The microwaves in the oven do not react with the water molecules in ice the same way ⑩they do with *liquid water. Surprisingly, ⑫the ice will not melt! This is because water is heated about 8,000 times more easily than ice. The outside of the ice, which is wetter, may be affected, but the *entire ice cube will make it through relatively *unscathed.

[出典 : Science Explorer 成美堂]

注 drenched びしょぬれで microwave oven 電子レンジ interact 反応する molecule 分子 transmit 伝える
air tight 気密の explode 爆発する vapor 蒸気 electron 電子 thermal conduction 熱伝導 aside from ~は別として
lumpy 塊の oven-proof dish 耐熱皿 revert ~に戻る granular 粉末の moisten 湿らせる soak ひたす
sterilize 殺菌する intense heat 高熱 liquid 液体の entire 全体の unscathed 無傷で

問1 下線部①、下線部⑦、下線部⑧、下線部⑨、下線部⑩が指している語句をそれぞれ本文より英語で抜き出しなさい。
(*1語だけではありません)

問2 下線部②、下線部④をそれぞれ日本語に直しなさい。

問3 下線部③のasと同じ意味で使われているasを含む文を(ア)～(ウ)から1つ選び、記号で答えなさい。

(ア) I have the same T-shirts as yours.

(イ) As she grew up, her magical power got stronger.

(ウ) As I had no money, I had to walk home.

問4 下線部⑤、⑥、⑫の科学的な理由を本文に即して、それぞれ日本語で説明しなさい。

問5 (⑩)に入る語を(ア)～(ウ)から1つ選び、記号で答えなさい。

(ア) Both (イ) Either (ウ) Neither

問6 次の(ア)～(オ)の中から本文の内容と合っているものを2つ選び記号で答えなさい。

(ア) In a microwave oven, electric waves cause water molecule to move slowly.

(イ) The temperature of the object increases after using a microwave oven.

(ウ) It is dangerous to heat metallic object with a microwave oven.

(エ) It is a good way to heat a wet sponge in a microwave oven to make it softer.

(オ) The inside of the ice melts easily when it is heated by a microwave oven.

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[2] それぞれの会話の () に入る最も適切な応答を選び、記号で答えなさい。

(1) Police: May I help you?

Woman: My cat is missing. Please find him!

Police: All right. Tell me about your cat.

Woman: ()

(ア) He is a gray cat with a long tail. (イ) I am looking for him.

(ウ) I told you to find him. (エ) I want you to ask for his information as fast as possible.

(2) Woman: Paul, where will we live when we get married?

Man: You can move into my house.

Woman: But your house is far from my office.

Man: ()

(ア) That is a good idea for both of us. (イ) Fortunately, my house is near to yours.

(ウ) Then we should look for another house. (エ) My office is not very far from our new house.

(3) Woman: How long have you played the piano?

Man: Since I was five. So, I've played for almost 10 years.

Woman: Can you play any other instruments?

Man: ()

(ア) Yes, I can play soccer. (イ) I've never played any instruments.

(ウ) I've played the violin since I was ten. (エ) 10 years is a long time.

(4) Man: What are you going to do next Saturday?

Woman: I'm going to take part in volunteer work in Hiroshima.

Man: Really? What kind of work?

Woman: ()

(ア) We'll visit Peace park. (イ) We'll clean the river.

(ウ) I'll take part in it next time. (エ) I can work very hard.

[3] 日本語の意味に合うように、() 内の語を並べかえなさい。

(1) 早岐に行くにはどのバスに乗ればよいか教えてください。

Please (me / take / tell / to / bus / which) for Haiki.

(2) この野菜は中国語で何と呼ばれているのですか?

What (in / is / this / Chinese / called / vegetable)?

(3) 彼女はよく人生で一番大事なものは夢だと言っていた。

She would often say that (is / important / most / the / thing / in life) dream.

(4) そのチームがバルブを開発するのに3ヶ月以上かかった。

It (the team / more / to / than / took / three months) develop the valve.

(5) 兄は昨夜からずっと新しいテレビゲームをやり続けています。

My brother (playing / last / a new video game / has / night / since / been).

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[4] 次の文の () 内から最も適当なものを1つ選び、記号で答えなさい。

- (1) I will leave home when my mother (アcall イcalls ウis calling エwill call) me.
- (2) My father (アtake イtook ウhas taken エtaken) me to Huis Ten Bosch last Sunday.
- (3) My brother (アtalks イtalked ウhas talked エwas talking) on a phone when I entered his room.
- (4) My son (アpractices イis practicing ウhas practiced エhad practiced) karate since he was ten years old.
- (5) Edward looks young but he has grandchildren. He (アmust イwill ウcannot エshould not) be over forty.
- (6) "I lost my way. (アShall イShould ウCould エMight) you tell me the nearest station?"
- (7) The top of Mt. Eboshi is covered (アby イat ウof エwith) snow.
- (8) *Harry Potter* was (アwriting イwritten ウto write エwrote) by J.K. Rowling.
- (9) It was very kind (アfor イto ウof エas) you to help an old lady cross the road.
- (10) Please let me (アknow イknown ウto know エknowing) your new e-mail address.
- (11) Would you mind (アclose イclosed ウclosing エto close) the window behind you?
- (12) I was (アsurprise イsurprised ウsurprising エto surprise) at the news of Carlos Ghosn.
- (13) Do you know the boy (アwhich イwhat ウwho エwhose) hair is pink?
- (14) Sarah has two cats. One is white and (アother イthe other ウanother エthe another) is black.
- (15) Ron worked (アhard イharder ウhardest エhardly) of us all and got the prize.

[5] 次のメールを読み、返事を50語以上の英語で書きなさい。

Dear Yuri

Guess what? I have a big news.
My parents finally allowed me to travel to Japan alone.
I'll stay at my uncle's house in Fukuoka.
I hear that there are many places to see in Kyushu.
Could you tell me the best place I should visit?
I'd like to travel there with you.
I'm looking forward to seeing you soon.

With love, Elena

受験番号

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英 語 (工 業)

No. 1 / 1

[1]	問 1	①	⑦		⑧		
		⑨	⑪				
	問 2	②					
		④					
	問 3						
	問 4	⑤					
		⑥					
		⑫					
	問 5			問 6			

[2]	(1)		(2)		(3)		(4)	
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[3]	(1)	Please (							) for Haiki.
	(2)	What (							)?
	(3)	She would often say that (							) dream .
	(4)	It (							) develop the valve.
	(5)	My brother (							)

[4]	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
	(9)		(10)		(11)		(12)		(13)		(14)		(15)			

[5]																
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