’20

前期日程

英　語

（理工学部）

注　意　事　項

1. 試験開始の合図があるまで，問題冊子を開いてはいけません。
2. 問題冊子は 1 冊(17 頁)です。解答用紙は，解答用紙(英語 マークシート)(第 1 問，第 2 問を解答)と解答用紙(英語 記述)(第 3 問を解答)の 2 枚です。落丁，乱丁，印刷不鮮明の箇所があった場合には申し出てください。
3. それぞれの解答用紙の所定の欄に氏名と受験番号を記入してください。また，解答用紙(英語 マークシート)には受験番号を正しくマークしてください。
4. 解答は必ず解答用紙の所定の各欄に記入してください。
5. 第 1 問，第 2 問の解答は，解答用紙(英語 マークシート)の解答欄にマークしてください。例えば，［ 10 ］と表示がある問いに対して③と解答する場合は，次の(例)のように解答番号 10 の解答欄の③にマークしてください。

（例）

解答番号	解　答　欄
10	① ② ③ ④

6. 解答用紙は持ち帰ってはいけません。
7. 問題冊子は持ち帰ってください。

第１問　次の問い（A，B）に答えなさい。

A．次の問い（問１～15）の［ 1 ］～［ 15 ］に入る最も適切なものを，それぞれ下の①～④のうちから一つずつ選び，解答用紙（英語　マークシート）の解答欄にマークしなさい。

問 1　It is not easy to［ 1 ］every single happening.

① describe　② destroy　③ subscribe　④ substitute

問 2　Be quiet! I［ 2 ］a funny noise outside.

① was hearing　② am hearing　③ had heard　④ hear

問 3　This computer is very slow.　It's so［ 3 ］!

① annoy　② annoying　③ annoyed　④ annoys

問 4　A：May I play outside now?

B：Yes, but you have a lot of homework, so you［ 4 ］return home before it gets dark.　OK?

① would　② can　③ must　④ may

問 5　The bike he is riding now needs［ 5 ］.

① fixing　② fixed　③ to have fixed　④ to fix

問 6　How did that traffic accident come［ 6 ］yesterday?

① in　② on　③ about　④ from

問 7　I was［ 7 ］finish the math homework because I was so tired last night.

① possible to　② impossible to　③ able to　④ unable to

問 8 [8] the students who belong to the Department of Education, only about 30% will be teachers.

① In ② For ③ Of ④ With

問 9 We have to complete this task today. We should get [9] three people to help us.

① other ② another ③ more ④ one more

問10 This catalog [10] that this year's watch is slightly cheaper than last year's.

① says ② speaks ③ talks ④ tells

問11 A：Do you think it'll be fine tomorrow?

B：I hope [11] .

① it ② too ③ fine ④ so

問12 I have a problem, and I need [12] .

① many advices ② a few advice

③ some advices ④ a little advice

問13 If you like this cake very much, [13] make one yourself? I will give you the recipe.

① how about ② why don't you

③ how come you ④ what do you say to

問14 Recently it has been hard to concentrate on my studies because a house [14] next to my home.

① builds ② has built

③ is being built ④ is building

問15 [15] her help, we would never have finished this project on time.

① Accepted ② Not for ③ Excluding ④ Without

B．次の問い(問16～30)の各文は誤った英語表現を含んでいます。訂正の必要な箇所を下線部①～④のうちから一つずつ選び，解答用紙(英語　マークシート)の解答欄にマークしなさい。

問16　I have to inform① you that you will be given② a punishment if③ you find④ guilty.

問17　I think either① you or② he are③ to blame④ for that accident.

問18　I returned home quite lately① last night to② find that the window was broken③ and the door was unlocked④.

問19　Barry is such① a honest man② that③ he never lies④.

問20　That boy is① a classmate I have② known③ since④ ten years.

問21　A：Everything you cook① tastes② so good.
B：Thank you, but③ I don't think I'm as a good cook④ as you.

問22　A：How long① is it② from San Francisco to Los Angeles?
B：It's about③ four hundred miles④.

問23　That writer was born① in Kyoto, where② he often③ refers to④ in his novels.

問24　The police is① looking for② a man who③ stole④ a car.

問25　I myself① have a lot of other② opinions beside③ those about this plan for④ developing the system.

問26　Tom and I have① difficulty② to solving③ these problems successfully④.

問27　I could① not believe the fact② which③ Mary didn't speak④ Japanese at all.

問28　He must go through① a lot of② trouble in the past when③ he was④ young.

問29　George does not accept criticism well①, nor he does② even③ appear to④ listen to it.

問30　In fact, it is rumor① that② the talks are to be③ resumed④ next week in Switzerland.

第２問　次の問い（Ａ，Ｂ）に答えなさい。

Ａ．次の英文を読み，下の問い（問１～５）の［ 31 ］～［ 35 ］に入る最も適切なものを，それぞれ下の①～④のうちから一つずつ選び，解答用紙（英語　マークシート）の解答欄にマークしなさい。

For most of human history, people did not cook their food. They simply ate it the way it was found. Thousands of years ago, people learned the way to use fire for cooking purposes. However, humans have long been interested in using the heat from the sun to cook their food, as well. In ancient times, a group of people called the Essenes lived in the northern part of Africa. Records indicate that they heated thin pieces of bread on rocks that were warmed by the sun.

The first modern experiments in solar cooking began during the 1700s. At this time, glass was becoming more widely available and people began to use it for windows. It soon became clear that when the sun passed through a glass window into a closed room, the air in the room became warmer. In the 1760s a French-Swiss scientist, Horace de Saussure, became interested in why this happened and how much heat could be produced this way. In 1767 he conducted an experiment which measured the temperature changes in boxes as they were heated by the sun.

De Saussure's first experiment involved a set of five small glass boxes, each one placed inside of the other. The largest box was 12 inches by 12 inches and the smallest box was 2 inches by 2 inches. He placed the boxes on a black wooden table. He used a black surface because he knew it would hold the heat of the sun rather than reflecting it away. After several hours, he checked the temperatures in the boxes. The outer box was coolest and the smallest box in the center was warmest. The temperature in the inner box was 87.5°C. De Saussure had placed some fruits in this

container and found that the fruits were actually cooked by the heat in the box. Later he built a more efficient heat box using wood and glass and was able to raise the temperature to 109°C. This is well above the 100°C boiling point of water. This improved cooker later became known as a 'hot box' and was the basis for many further solar experiments.

（Waring（2009）から一部内容を変更して引用． Reprinted from "Solar Cooking 5-Pack (US)" by Waring Rob, CENGAGE LEARNING. Copyright © 2009 CENGAGE LEARNING.）

問 1 According to the passage, what did people do for the longest time? 31

① They heated bread with warm rocks.
② They cooked food with fire.
③ They used the sun's heat to cook food.
④ They ate food raw.

問 2 According to the passage, why did modern experiments with solar cooking begin around 300 years ago? 32

① People noticed that air soon became warmer in rooms.
② People noticed something about sunlight traveling through glass.
③ People started to use wide glass more often.
④ People started to use glass for windows and boxes.

問 3 According to the passage, what is true about Horace de Saussure? 33

① His glass 'hot box' was the basis for many solar experiments.
② He was from Europe.
③ He was born in the 1760s.
④ He measured temperature changes of the sun.

問 4 According to the passage, in de Saussure's first experiment: 34

① He placed some fruits in the largest box.

② He reflected heat into a black wooden box.

③ The center box was cooler than the boiling point of water.

④ The largest box was the hottest.

問 5 What is the best title for this passage? 35

① De Saussure's Experiments

② A Timeline of Solar Energy

③ The Development of Solar Cooking

④ Making a 'Hot Box'

B．次の英文を読み，下の問い(問１～５)の [36] ～ [40] に入る最も適切なものを，それぞれ下の①～④のうちから一つずつ選び，解答用紙(英語　マークシート)の解答欄にマークしなさい。

About three-quarters of the Earth's surface is covered by water. For centuries people asked questions like "How deep is the ocean?" or "What creatures live there?" Their questions remained unanswered for a long time. Many sailors and explorers traveled across the oceans and made maps that showed coasts, seas, oceans, and bodies of land. But there was no way of exploring underwater.

A continuous air supply to breathe and protection from the great water pressure are extremely important for underwater explorers. Divers also need special clothing and light, since deep waters are very cold and very dark because the sun's rays cannot reach there. Working and exploring underwater is dangerous and today robots are used for these kinds of tasks.

Oceanography*1 began in 1690. The British scientist Edmond Halley built a diving bell with a window that allowed men to work underwater. Extra air was sent in through leather pipes. Halley and five other men dived to 60 feet in the River Thames and stayed there for over ninety minutes. He improved the diving bell and was later able to stay underwater up to four hours.

In 1775 the American inventor David Bushnell invented the first submarine called The Turtle. It was quite small and there was only space for one man. The Turtle was first used during the American Revolution in 1776 against the British Navy on the coast of New York City.

The British ship HMS Challenger was the first ship especially designed for deep-sea research, with a complete laboratory for scientific work. Between 1872 and 1876 the ship sailed to every ocean in the world except the Arctic Ocean*2. On 21 December 1872 Captain George Nares and his crew sailed

on HMS Challenger from Portsmouth, England and traveled for 731 days at sea. The expedition studied sea water and sea life, and made detailed maps of the coasts and islands. It also measured the depth of the sea in many different places, using a heavy metal weight. The expedition found over 4,700 unknown species of sea life and brought back a great amount of useful information. The Challenger returned to England on 24 May 1876 after having sailed for nearly 70,000 miles.

Robots are also important for exploring the ocean. In 1995 the Japanese robot submarine Kaiko went down 35,757 feet into the deep sea and collected material there. On 31 May 2009 another robotic submarine called Nereus reached the deep sea at 35,769 feet. The project manager of the Nereus said, "With a robot like Nereus we can now explore anywhere in the ocean."

Today oceanography is particularly important because petroleum*3 and natural gas are often found on the ocean floor and oil platforms are used to take them from the sea. Oceanography also helps us understand global climate changes. The Earth's atmosphere, its weather and its oceans are closely connected.

（*Exploring Places* から一部内容を変更して引用．© 2010 Black Cat – A brand of De Agostini Scuola S.p.A.Written by Gina D. B. Clemen）

*1oceanography＝海洋学

*2Arctic Ocean＝北極海

*3petroleum＝石油

問 1 According to the passage, what two things are most needed for successful underwater exploration? 36

① A special swim suit and a good source of light

② Sunshine and warm water temperature

③ Air supply and protection from high water pressure

④ Working underwater safely and using modern robot technology

問 2 According to the passage, how long were people able to remain in the final version of Halley's diving bell? 37

① For 20 minutes

② For 60 minutes

③ For 90 minutes

④ For 240 minutes

問 3 The passage says that recently it is especially important to study the ocean because people can learn: 38

① About various kinds of sea creatures.

② About valuable energy resources.

③ The way to build more powerful submarines.

④ The way to draw better maps of the oceans.

問 4 What is not listed as one of the things that oceanography helps us to understand? 39

① The Earth's atmosphere

② Water pollution

③ Global climate changes

④ The Earth's weather

問 5 What is the best title for this passage? 40

① How Submarines Were First Invented

② How HMS Challenger Sailed Around the World

③ How Robots Help Divers Explore the Ocean

④ How the Science of Oceanography Was Born

第 3 問 次の二つの英文(A，B)中の下線部 41 ～ 60 に入る適切な英単語を，解答用紙(英語　記述)の解答欄に書きなさい。

注意　1. 一つの下線部につき単語一つを書くこと。

2. 例にならって書き出しの文字を含めた英単語を書くこと。

例

I went to the lib＿＿＿ 例 to return a book but it was closed.

解答：library

A.

Concrete

Cement is a material that is m＿＿＿ 41 by heating grains of rock and clay. When people mix cement with water, sand, and stones, it b＿＿＿ 42 a liquid called concrete. After a few hours, crystals grow inside the concrete and it changes to a s＿＿＿ 43 material.

About 2,000 years ago the Ancient Romans used concrete to make beautiful buildings, like the Pantheon — the roof is co＿＿＿ 44 from it. Later, people forgot h＿＿＿ 45 to make concrete for more than 1,000 years!

Modern concrete was invented in 1756. To＿＿＿ 46 , it is the world's most important building material. Concrete gets hard very q＿＿＿ 47 , so people only make it when they need it soon. To make concrete stronger, people put long pieces of steel in it. Many of the world's tallest buildings use this kind of concrete. Huge pumps move liquid concrete hundreds of me＿＿＿ 48 above the ground.

Now, there are many dif＿＿＿ 49 types of concrete. Waterproof concrete is great for building bridges. Another type has materials in it that

absorb dangerous ch_____ 50 from the air. In the future, this will help to make cities cleaner.

（*Materials to Products* から一部内容を変更して引用．Reproduced by permission of Oxford University Press from ORD 5 MATERIALS TO PRODUCTS AB by Alex Raynham © Oxford University Press 2011.）

B.

My Early Interest in Light

There were two events that stimulated my interest to learn about light. First, in the small town in eastern Oregon where I lived as a small boy, there was a movie th＿＿＿ 51 . The projector there had large, round, six-inch lenses. One day, one of these broke and was thr＿＿＿ 52 away, so I was fortunate to find half of the large lens. As I recall, it was large en＿＿＿ 53 to focus the sun's rays very well. I could use this glass to burn something. It was very interesting for me. There is a se＿＿＿ 54 episode from my childhood that I rem＿＿＿ 55 . One day in Portland, I was walking along the street in the rain ca＿＿＿ 56 an umbrella. And with the umbrella in front of me, I could see the street light through the umbrella. And not o＿＿＿ 57 could I see the light itself but also a band of bright colors on each side, above, and below. Four more bands spread out at 45-degree an＿＿＿ 58 in between these. And this exp＿＿＿ 59 really interested me a lot. It was some years before I found the an＿＿＿ 60 for why this happens.

（*My Early Interest in Light* から一部内容を変更して引用）