漢字、四字熟語の問題に答えなさい。

一、次の①～⑤の傍線部のカタカナにあてはまる正しい漢字をそれぞれ下から選び、記号で答えなさい。

① 問題の④クンにふれる。
② トウジをやる。
③ 飲み薬がキく。
④ 人を迷惑がうる。
⑤ だいたいのケンツウをつける。

（ア）透視
（イ）透視
（ウ）透視
（エ）透視
（オ）透視

二、次の①～⑤の説明に合う四字熟語をそれぞれ選び、記号で答えなさい。

① nothing by 本質からはずれた、ささいな小さな部分。
② 枝葉末節
③ 一味深長
④ 無我夢中
⑤ 一見当

（ア）見当
（イ）検討
（ウ）健闘
（エ）献灯
（オ）献灯

⑥ 前置きなしで、いきなり話の要点に入ること。
⑦ 完全無欠

⑧ 危機一髪

（ア）単刀直入
（イ）中途半端
（ウ）百発百中
（エ）百発百中
（オ）百発百中
川下の保健所自体には山下の保健所がない。

河川下の保健所の自体には、山下の保健所がない。

川下の保健所自体には山下の保健所がない。

河川下の保健所の自体には、山下の保健所がない。

川下の保健所自体には山下の保健所がない。

河川下の保健所の自体には、山下の保健所がない。

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河川下の保健所の自体には、山下の保健所がない。

川下の保健所自体には山下の保健所がない。

河川下の保健所の自体には、山下の保健所がない。
（その一）「おおばやゆうとび」の単語発音

（その二）

（その三）

（その四）
問題三、
①一つの山、独立した山。同じ意味の表現を、文脈に合う正しいものを次から一つ選び、記号で答えなさい。

問題二、
A [ ] B
にあてはまる接続詞をそれぞれ選び、記号で答えなさい。同じ記号を繰り返しても構わない。

問題一、
ある象形文字
とあるが、象形文字のグループとして正しいものを次から一つ選び、記号で答えなさい。

問題四、
ア [ ] い
には図が入る。文脈に合う正しいものを次から一つ選び、記号で答えなさい。

問題五、
イ山は雨を降らせる。
ウ山は一つずつ独立している。
エ山は経験を通じて知る。
オ話者は vibarで答えなさい。
問題六
次の各文について、本文の内容にあうものには〇を、そうではないものには×を書きなさい。

① 実際の山というのは、きれいにならんで脇をなして存在しているが、その理由は定かではない。

② 山という字は地面の一つの盛り上がりを表しているのだということは、中国の古い本の挿絵からもわかる。

③ 山脈という言葉は知っていただが、実感したのは、山を歩いてたり地図を見たりした経験からだった。

④ 左右からの大きな力に押されて出来た何ともの巻の盛り上がりが、日本列島に富士山を作った。
For Admission Year 2015 - 2016
Mathematics Entrance Examination

数学試験問題

Applicant Number 受験番号 ________________________________

Name (Print) ________________________________

氏名 (Name in Kanji, if applicable) ________________________________

- Put only your applicant identification card, pencils, mechanical pencils and erasers on the desk. Rulers and calculators are not allowed.
受験票, 鉛筆, シャープペンシル, 消しゴム以外の私物は机に置かないこと。定規, 電卓は使用できない。

- Do not open this booklet until the proctor says, “Begin.”
始めの合図があるまで, この問題冊子を開かないこと。

- All answers must be written in the designated columns on the answer sheet.
解答は, 全て解答用紙の指定された解答欄に記入すること。

- You may use blank spaces in this booklet for your work.
この問題冊子の余白を計算等に使用してよい。

- Figures are not necessarily drawn to scale.
問題文中の図は必ずしも正確に書かれていない。

- Both this booklet and the answer sheet will be collected after the examination.
試験終了後, この問題冊子と解答用紙をともに回収する。

- This booklet consists of 7 pages plus the cover.
この問題冊子は表紙を除いて, 7 ページである。

Keio Academy of New York
慶應義塾ニューヨーク学院 (高等部)
1. Simplify the following expressions as much as possible.
次の計算をせよ。

(1) \[ 7 - 1 \div 6 \times (5 - 3) \]

(2) \[ \left(1 + \frac{1}{2}\right)^3 + \left| -2^2 - 1 \right| - (-0.4)^2 + \frac{1}{8} \]

(3) \[ (-6a^5b^2)^2 \div (18a^7b^5) \div (3a^2b^3) \]

(4) \[ \frac{5a - 7b}{6} - \frac{3a - b}{8} + 2(b - a) \]

2. Solve the following equations.
次の方程式を解け。

(1) \[ 13(7 - 9x) - 14 = 9x - 7 \]

(2) \[ | -8 + 5x - \frac{1}{4}(2x + 3) = | -6| \]

(3) \[ \frac{2x - 1}{3} + \frac{-3x + 2}{5} = \frac{4x - 1}{10} \]

(4) \[ 0.3(x - 3) - \frac{5}{7}(5 + x) = 2x - 60 \]
3. Solve the following systems of equations.
次の連立方程式を解け。
(1) \begin{align*}
3x + 5y &= 12 \\
7x + 11y &= 26 \\
\end{align*}

(2) \begin{align*}
\frac{5}{x} + \frac{3}{y} &= 1 \\
\frac{4}{x} - \frac{2}{y} &= 14 \\
\end{align*}
4. In a particular school building, there are a certain number of classrooms and a certain number of desks. If 30 desks are placed in each classroom, 38 desks remain unassigned. If 35 desks are placed in each classroom, 37 additional desks are needed to fill all the classrooms. Find the number of desks that the school possesses now.

ある学校にはいくつかの教室と何台かの机がある。各教室に30台の机を配置すると38台余り、35台の机を配置するには37台不足する。机は全部で何台あるか。

5. For each natural number $n$, let $a_n$ be the rightmost digit of $(10577)^n$. For example $a_1 = 7$. Find the value of $a_{2015}$.

自然数 $n$ について, $(10577)^n$ の一の位の数を $a_n$ とする。例えば $a_1 = 7$ である。このとき, $a_{2015}$ の値を求めよ。
6. Let A(3, 2) be a point on a coordinate plane as shown in the figure below. Let point B be A’s symmetric point with respect to line $x = -1$. Let point C be B’s symmetric point with respect to line $y = -2$, and let point D be C’s symmetric point with respect to line $x = 2$. Answer the following questions.

座標平面上の点 A(3, 2) と直線 $x = -1$ について対称な点 B, 点 B と直線 $y = -2$ について対称な点 C, 点 C と直線 $x = 2$ について対称な点 D がある。次の間に答えよ。

(1) Find the coordinates of B, C, and D.

点 B, 点 C, 点 D の座標を求めよ。

(2) Find the area of the quadrilateral ABCD.

四角形 ABCD の面積を求めよ。
7. There are various units of length used in Japan, such as "ken" and "shaku". Different kinds of units of length are also used in the U.S., such as "foot" and "inch". Suppose that we know that 1 foot = 12 inches, 1 inch = 2.54 cm, 1 ken = 1.8 m, and 1 ken = 6 shaku. Convert 1 foot in "shaku"'s.
日米の長さの単位には色々なものが無く、1 foot = 12 inches, 1 inch = 2.54 cm であり、また 1 間 = 1.8 m, 1 間 = 6 尺であることが知られている。1 foot は何尺か答えよ。

8. A square is inscribed by a circle O as shown in the figure below. If the sum of the areas of the shaded regions is 1, what is the area of the square?
円 O に正方形が図のように内接している。図の斜線部の面積の和が 1 であるとき、正方形の面積を求めよ。
9. A printer can make a color print and a black and white print. A color print costs 5 yen per page and can be printed at 10 pages per minute. A black and white print costs 2.5 yen per page and can be printed at 40 pages per minute. When Keitaro attempted to make a certain number of color prints, one of the colors ran out after printing $x$ pages, so he printed the remaining $y$ pages in black and white. The final result cost 4800 yen and the total printing time was reduced by half. Find the values of $x$ and $y$.

ある印刷機でカラー印刷を行う場合、1枚5円の費用がかかり、1分間で10枚の印刷が可能である。白黒印刷を行う場合は、1枚2.5円の費用がかかり、1分間で40枚の印刷が可能である。慶太郎君がカラー印刷を何枚か行おうとしたところ、$x$枚印刷した時点でカラーインクが無くなり、残り$y$枚を白黒印刷で行った。その結果、4800円の費用がかかり、全てをカラー印刷で行った場合に比べて、印刷時間が半分になった。このとき$x$と$y$の値を求めよ。
10. Let A be the point of intersection of the x-axis and line $l : y = x + 1$. Let B be the point of intersection of the x-axis and line $l' : y = -\frac{1}{2}x + 4$. Let C be the point of intersection of line $l$ and line $l'$. Suppose that point D is on the segment BC such that the area of $\triangle ACD = \text{the area of } \triangle ADB = 1 : 2$. Answer the following questions.

座標平面上に2直線 $l : y = x + 1$, $l' : y = -\frac{1}{2}x + 4$ があり, $l$ と $x$ 軸の交点を点 A, $l'$ と $x$ 軸の交点を点 B, $l$ と $l'$ の交点を点 C とする。点 A を通る直線と線分 BC との交点を D とするとき, $\triangle ACD : \triangle ADB = 1 : 2$ となった。このとき, 次の間に答えよ。

(1) Find the coordinates of point C.
点 C の座標を求めよ。

(2) Find the coordinates of point D.
点 D の座標を求めよ。
English Entrance Exam 2015

Directions:

- Do not open this booklet until the test begins.
- Both the test booklet and answer sheet will be collected at the end of the test.
- Write on the answer sheet only for Parts A and B (do not mark answers on your test booklet). Write only on the front of the answer sheet, not the back.
- *For Part C, write your essay on the lined paper provided.*

Keio Academy of New York
Part A: Grammar

Directions: For questions 1-15, choose the word or group of words that will complete each of the following sentences correctly. Mark the best answer on your answer sheet. Do not mark this page.

1. If I ______ you, I would get some rest before the game tomorrow.
   a) am     b) could be    c) were   d) had been

2. Jack offered to take care of my garden and _____ my mail while I was away.
   a) gets   b) getting   c) got   d) get

3. I met her _____ the art museum lobby _____ Sunday.
   a) in, at  b) in, on    c) on, in   d) on, for

4. The painting was beautiful. I stood there _______ it for a long time.
   a) for admiring  b) being admired  c) admire   d) admiring

5. Maria never seems to get tired. I wish I ______ her energy.
   a) would have  b) have    c) have had  d) had

6. Next year John will attend ______ university in Germany. He’s very excited.
   a) a   b) an  c) the  d) those

7. I misunderstood him. He asked me where ______, not my cat.
   a) is my hat   b) my hat     c) my hat is  d) was my hat

8. There’s the man ______ dog attacked you.
   a) which   b) whose  c) what    d) who

9. Tony spent ______ money buying tickets that he didn’t have enough left for candy.
   a) so many   b) so much  c) too much  d) a lot of

10. Kevin didn’t finish watching the movie. It ______.
    a) was boring  b) was being bored  c) was being boring  d) was bored

11. The police ______ whenever there is a traffic accident.
    a) calls  b) is called  c) called  d) are called

12. The number of people who study Russian ______ than those who study English.
    a) is less   b) are less  c) is fewer  d) are fewer

13. Chris was muddy when he came home from soccer. It ______ during the game.
    a) must rain  b) must not rain  c) had to rain  d) must have rained

14. The Northern Hemisphere has mostly westerly winds _____ the Earth’s easterly rotation.
    a) due to  b) because  c) therefore  d) so

15. One of the funniest ______ I saw last year was Bought It For A Dollar.
    a) movie  b) a movie  c) movies  d) the movies
Part B: Reading Comprehension

Directions: For questions 16-30, read each passage and answer the questions. Mark your answers on the answer sheet provided. Do NOT mark answers in this booklet.

Passage 1:

Two years ago, my brother and I planted our first garden. First we chose the location of the garden. We put it in a place that gets a lot of sunlight. Then we dug up the ground. After that we added fertilizer. Next we took seeds and planted them in rows in the garden. Finally, we watered the new garden. It was hard work, but we are proud of our garden. I can’t wait until our flowers bloom.

16. This passage is mainly about ________________.
a. when to plant a garden.
b. how the writer started a garden.
c. why it is good to make a garden.
d. where to plant a garden.

17. What was the first step?
a. Choosing the location.
b. Digging up the ground.
c. Adding fertilizer.
d. Planting seeds in rows.

18. Who worked hard on the garden?
a. The writer.
b. The writer’s brother.
c. The writer and his brother.
d. None of the above.

19. What does the writer want in the future?
a. To make another garden.
b. To watch flowers bloom.
c. To water the garden every day.
d. To work with his brother on a new project.

20. How does the writer feel?
a. Making a garden is too much work.
b. It is difficult to make things with one’s brother.
c. Making a garden is something to feel good about.
d. More people should make gardens.
Passage 2:

Jogging is an aerobic exercise that gives your heart and lungs a good workout. It requires no special equipment, so it can be practiced at very little expense. Many people like jogging because it gets them out into the fresh air and provides new things to look at, so it’s not as boring as some other forms of exercise. On the other hand, some doctors say that joggers can damage their joints with the pounding that jogging gives them. In addition, jogging can be dangerous if traffic is heavy. Besides the possibility of accidents, inhaling car fumes can present problems.

21. In the first sentence, what does aerobic exercise mean?
   a. Heart and lung exercise.
   b. Leg muscle exercise.
   c. Arm muscle exercise.
   d. None of the above.

22. Which of the following is NOT mentioned as a possible negative effect of jogging?
   a. Joints can be damaged due to pounding.
   b. Joggers can get very tired easily.
   c. There is the danger of traffic accidents.
   d. Inhaling car fumes can present a problem.

23. Which of the following is NOT mentioned as a possible reason people like jogging?
   a. It gives your heart and lungs a good workout.
   b. It requires no special equipment.
   c. It gets people out into the fresh air.
   d. It provides an opportunity to meet new people.

24. What does “at very little expense” mean?
   a. It doesn’t cost a lot of money.
   b. It costs a lot of money.
   c. The equipment can be expensive.
   d. It can be done without much effort.

25. What would be a good title for this passage?
   a. Jogging Is an Aerobic Exercise
   b. Jogging Makes Me Happy
   c. Jogging: Good and Bad Points
   d. Everyone Should Start Jogging
Passage 3:
The Grand Canyon is a large river canyon in Arizona. It is over 220 miles long and over a mile deep in some places. Its widest point is over 18 miles wide. The canyon is considered one of the Seven Natural Wonders of the World. Over millions of years, the Colorado River wore away rock as it passed through the area. Slowly, the river made the path deeper and deeper. Now the canyon is surrounded by steep walls on either side, while the river continues to flow at the bottom of the canyon.

Besides its large size, the Grand Canyon is also known for its magnificent colors. The canyon is made of layers of rock, and each layer of rock has a different depth and color. Geologists have identified almost 40 different layers of rock exposed by the river's erosion. The climate in the canyon area is primarily desert, with both high and low temperatures. The upper rims of the canyon often receive snowfall. The air quality is usually very high, although dust storms and smoke from fires can change that.

The Grand Canyon is home to a variety of plants and animals. Plants range from various species of cactus to pine forests. Many types of animals live in the area, including bald eagles, bobcats, and bats. Six different kinds of rattlesnakes have been identified in the area.

Native Americans have inhabited the area for around 3,000 years. Spanish conquistadors first explored the area in 1540. Later, Spanish priests and explorers returned in 1776. Arizona became part of the United States in 1848, and the first geological studies were completed on the Grand Canyon in 1856. Today, the canyon is part of the Grand Canyon National Park. About five million tourists visit the park each year.

26. This passage is mainly about _________________.
a. the history of Arizona.
b. the history of the Grand Canyon.
c. a description of the Grand Canyon.
d. how to take a vacation at the Grand Canyon.

27. What does the word erosion mean?
a. The layers of exposed rock.
b. The process that wore away the rock.
c. Rocks with different depth and color.
d. The desert climate in the canyon.

28. What does the underlined word that refer to?
a. Air quality
b. Smoke from fires
c. Dust storms
d. The Grand Canyon

29. What is NOT true about the Grand Canyon?
a. The canyon is made up of almost 40 different layers of rock.
b. The climate in the canyon area is primarily desert.
c. The Grand Canyon became part of the United States in 1856.
d. The canyon is now part of the Grand Canyon National Park.

30. What does the passage NOT imply?
a. The Grand Canyon is famous.
b. The Grand Canyon has interesting plants and animals.
c. The Grand Canyon is a popular place for a vacation.
d. The Grand Canyon is a dangerous place.
Part C: Essay

Directions: On the lined paper provided, write an essay with an introduction, body paragraphs, and a conclusion on the topic listed below. You may agree or disagree with the statement; that is your choice. Your essay will be graded only on how well it is written.

   TOPIC:  *It is good to live in a country that has four seasons.*