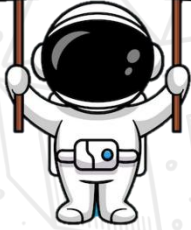




A TRADITION OF EXCELLENCE



INSTRUCTIONS

You are about to take Copernicus Exam.

Please read the followings carefully.

1. The exam has 25 multiple choice-questions. Each question weighs 4 points. The maximum score a student can get is 100. There is a penalty of one point for each incorrect answer. So only answer the questions you are sure of.
2. Start with the easier questions, you can always come back to the questions you leave.
3. The time allocated for the exam is 60 minutes. You will start when the invigilator tells you to start.
4. You are required to comply with the directions given by the head invigilator before the examination.
5. Those who are taking the exam with a mobile phone **MUST** make sure that during the examination no one calls.
6. If anything in the examination is unclear, you can contact the invigilator.
7. Where permitted you may use a translation dictionary.
8. Students must not give or receive assistance of any kind during the exam. Any cheating, any attempt to cheat, assisting others to cheat, participating therein, or engaging in such improper conduct is a serious violation and will generally result in disqualifying.

Remember that "Hard work beats talent when talent doesn't work hard"
We wish you the very best luck on the exam.



1. A group of 50 people take a taxi to visit the Houston Zoo. A maximum of 4 people can take a taxi together. Accordingly, at least how many taxis are needed for this group?

- A) 11
- B) 12
- C) 13
- D) 14
- E) 15

2. When adding the below, the numbers are first rounded to hundreds and the result is found. Then, these numbers are first completed to tens and a result is found again. What is the difference between these two results?

$$7528 + 4162$$

- A) 10
- B) 20
- C) 40
- D) 80
- E) 100

3. A vehicle can travel 120 km on 6 liters of gasoline. How many liters of gasoline are needed to travel 600 kilometers?

- A) 12
- B) 24
- C) 30
- D) 36
- E) 48

4. The sum of the ages of a family 5 years ago is 57. The sum of their ages 3 years from now is 89. How many people does this family have?

- A) 1
- B) 2
- C) 3
- D) 4
- E) 5

5. What is the remainder of dividing the smallest five-digit number with different digits by 5?

- A) 0
- B) 1
- C) 2
- D) 3
- E) 4

6. Alex and Ben have a total of \$400. If Alex gives $\frac{1}{3}$ of his money to Ben, their money becomes equal. How many dollars did Alex have in the beginning?

- A) 100
- B) 120
- C) 180
- D) 240
- E) 300

7. A water canister is half full. Twenty glasses are fully filled with half of the water in it. Then $\frac{1}{5}$ of 20 glasses is drunk. Half of the remaining glasses are poured back into the canister. According to the last situation, how much of the canister is full?

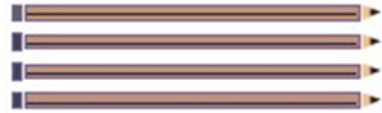
- A) $\frac{6}{10}$
- B) $\frac{7}{20}$
- C) $\frac{2}{5}$
- D) $\frac{3}{4}$
- E) $\frac{9}{10}$

8. Can creates the number pattern below by writing the powers of 2 side by side as the number of his powers. Accordingly, what is the number in step 20 of this number pattern divided by the number in step 10?

2, 4, 4, 8, 8, 8, 16, 16, 16, 16, ...

- A) 2
- B) 4
- C) 8
- D) 16
- E) 32

9. The total price of 4 pencils and 6 erasers is \$20. Therefore, which of the following cannot be found?

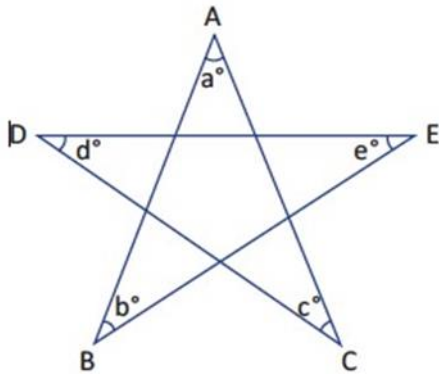


- A) 2 pencils and 3 erasers
- B) 6 pencils and 9 erasers
- C) 8 pencils and 12 erasers
- D) 10 pencils and 14 erasers
- E) 10 pencils and 15 erasers

10. N is a natural number other than zero and one, and the number $\star = 6N - 6$. \star is a natural number that satisfies the equation. Accordingly, which of the following is definitely true for the number \star ?

- A) It is divisible by 10.
- B) It is divisible by 9.
- C) It is divisible by 6.
- D) It is divisible by 5.
- E) It is divisible by 7.

11. Given the figures below, what is the sum of $a + b + c + d + e$?



- A) 90
- B) 180
- C) 235
- D) 270
- E) 360

12. The figure below was created by joining four squares. If the perimeters of the two smallest squares are 8 cm and 12 cm, respectively, what is the side length of the largest square, in centimeters?



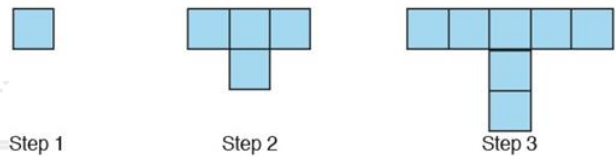
- A) 7
- B) 8
- C) 9
- D) 10
- E) 11

13. According to the multiplication table with positive integers below, which of the following is the result of the expression $(a + c) - (b + d)$?

×	a	b
a	16	d
7	c	35

- A) 5
- B) 7
- C) 9
- D) 11
- E) 13

14. The first three steps of a pattern modeled with unit squares are given below. Accordingly, how many unit squares are in step 8 of this pattern?



- A) 19
- B) 22
- C) 25
- D) 28
- E) 31

15. The age difference between Ata and his father is 26. What will be the age difference between Ata and his father after 15 years?

- A) 11
- B) 18
- C) 26
- D) 35
- E) 41

16.

$$\star + \bigcirc = \bigcirc$$

$$\triangle - \blacksquare = \blacksquare$$

$$\star + \blacksquare = 5$$

$$\triangle \times \blacksquare - \triangle = ?$$

- A) 30
- B) 31
- C) 32
- D) 40
- E) 41

17. Find out the smallest four-digit natural number whose digits add up to 20 and the largest three digit number whose digits add up to 20. What is the difference between them?

- A) 207
- B) 209
- C) 211
- D) 213
- E) 215

18. A man buys 4.5 liters of milk more than the previous day every day. This man buys till the end of the 4th day. He buys a total of 57 liters of milk. How many liters of milk did he buy on the first day?

- A) 7.5
- B) 10.5
- C) 12
- D) 13.5
- E) 15

19. The perimeters of the geometric figures given below are equal to each other. At the same time, all side lengths of polygons are integers. Which of the following cannot be the perimeter of any of the polygons?



square



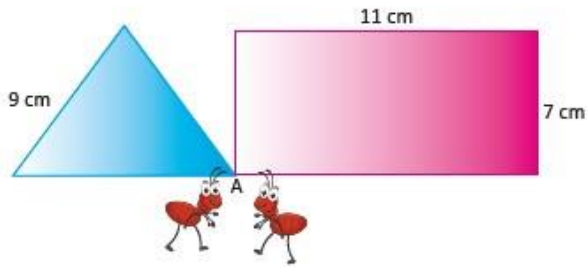
regular pentagon



regular hexagon

- A) 60
- B) 120
- C) 150
- D) 180
- E) 300

20. Below is an equilateral triangle with a common point A and a rectangle. Starting from point A , two ants are walking at constant and equal speed, one on the side of the equilateral triangle and the other on the side of the rectangle. When these two ants meet again at point A , how many centimeters would an ant have walked?



- A) 36
- B) 48
- C) 54
- D) 72
- E) 108

21. Find the value of $1 + 6 + 11 + 16 + \dots + 201$.

- A) 2023
- B) 4043
- C) 4141
- D) 1414
- E) 1966

22. Which of these numbers has the biggest sum of the digits?

- A) 838 330 337
- B) 536 319 234
- C) 739 238 336
- D) 293 335 498
- E) 993 233 333

23. Paul and John were given an allowance of \$30 each by their father. When Paul gives \$6 to John, how many dollars will John's money be more than Paul's money?

- A) 3
- B) 6
- C) 9
- D) 12
- E) 18

24. The heights of the five basketball teams are 1.8 m , 1.85 m , 2.02 m , 1.9 m , and 1.95 m . Find the sum of the tallest and shortest players of this basketball team.

- A) 3.10
- B) 3.75
- C) 3.92
- D) 3.97
- E) 4.02

25. The mass of a water tanker is 16 tons when it is $\frac{3}{4}$ full, and 13 tons when $\frac{3}{5}$ is full. According to this, what is the mass of this tanker when it is fully loaded?

- A) 17
- B) 18
- C) 19
- D) 20
- E) 21