STS
ADMISSION TEST

Grade 9 - English Booklet A
April 21, 2018

- This exam consists of 20 Mathematics, 10 Logic, 20 Science, and 10 English multiple choice questions.

- Total time of examination is 120 min.

- The score for this test will be calculated by subtracting one-third of number of incorrect answers from number of correct answers.

- Mark your answers on the Optic Form provided, by using soft-tip pencil.

- The blank spaces of booklet are left for you to use as scratch paper.

- It is prohibited using cell phones, calculator, ruler etc. during the examination.

- The results will be announced on April 25, 2018.

Wish you all success…

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1. **Which number is between 10 and 11 ?**

A) $3\sqrt{11}$ B) $\sqrt{122}$

C) $4\sqrt{30}$ D) none

2. **What is the result of** $\left(-\dfrac{1}{5}-2\right)-\left(\dfrac{4}{5}-2\right)$ **?**

A) -1 B) 5

C) $\dfrac{3}{5}$ D) 1

3. An experiment consists of spinning a spinner.

OUTCOME	FREQUENCY
RED	9
YELLOW	12
GREEN	15

What is the experimental probability that the spinner lands on yellow?

A) $\dfrac{1}{3}$ B) $\dfrac{1}{4}$

C) $\dfrac{5}{12}$ D) $\dfrac{2}{3}$

4. **Which of the following is correct?**

A) $\sqrt{3^2+4^2}=5$

B) $\sqrt{3^2+4^2}=25$

C) $\sqrt{3^2+4^2}=7$

D) $\sqrt{3^2+4^2}=\sqrt{5}$

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5. Which of the following equation has **No solution**?

A) $x^2 - 16 = 0$ B) $-x^2 + 1 = -8$

C) $x^2 + 24 = 1$ D) $3x^2 = 27$

7. The graph of a system of linear equations is shown below.
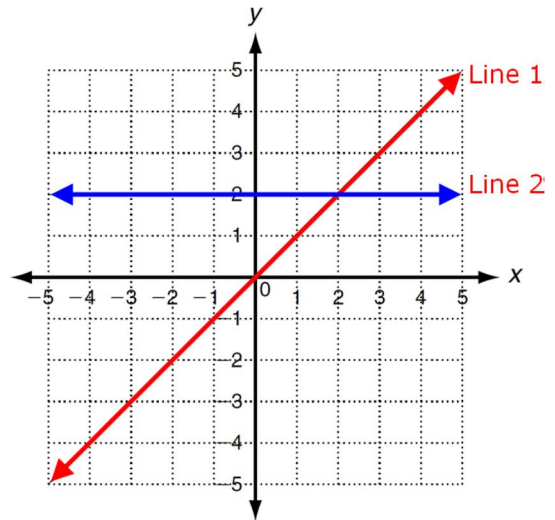
What is the solution of the system?

A) $(0, 2)$ B) $(1, 2)$

C) $(2, 2)$ D) $(2, 0)$

6. What is the **missing term** in the factorization below?

$$-6A^3 - 15A^2 = -3A^2(? + 5)$$

A) 2A   B) $-2A$

C) 3A   D) $-3A$

8. If $4(x + y + z) = 12.$, what is the **arithmetic mean** of x, y, and z?

A) 1   B) 3

C) 12   D) 36

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9. Which of the following is **NOT** irrational number?

A) $\sqrt{2}$ B) $\sqrt{19}$

C) $\pi = 3.14$ D) $1.5555...$

12. Given that $x = \sqrt{3} - 1$ and $y = \sqrt{3} + 1$.

What is the **value** of $(x + y)^2$?

A) 9   B) 12

C) 25   D) 36

10. Which of the following is **false** for the set of data $\{20, 25, 23, 30, 22\}$?

A) Mean : 24   B) Median : 23

C) Mode : 20   D) Range : 10

13. If $A = \left(x^2\right)^{-4}$ and $B = \left(x^4\right)^2$.

What is the **relation** between A and B ?

A) $A = B$ B) $A = -B$

C) $A = B^2$ D) $A = \dfrac{1}{B}$

11. What is the **result** of $\sqrt{4 + \sqrt{5 + \sqrt{400}}}$?

A) 3   B) 4

C) 5   D) 9

14. Which of the following statement is **false**?

A) $\left(x^m\right)^n = x^{m \times n}$ B) $x^m \cdot x^n = x^{m+n}$

C) $\dfrac{x^m}{x^n} = x^{m-n}$ D) $x^{-n} = -x^n$

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15. What is the **slope** of the line that passes through the points $(5, -1)$ and $(-5, -1)$?

A) 0   B) 1

C) $\dfrac{5}{3}$ D) 10

16. Which of the following is **not a factor** of $x^2 - 5x + 6$?

A) $x - 3$ B) $x - 2$

C) 1   D) $x + 5$

17. What is the value of **y** in the given

system $\begin{cases} x - 2y = 10 \\ x + y = 7 \end{cases}$?

A) 1   B) -1

C) 8   D) -8

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18. What is the **solution** of the equation $|x| + 4 = 2$?

A) 2 only   B) -2 only

C) -2 and 2   D) No solution

19. What is the value of x, in the given quadrilateral?
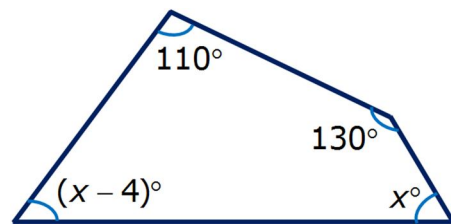
A) 62   B) 64

C) 66   D) 68

20. Which of the following is **not** a possible solution of $\frac{1}{5}x > \frac{3}{6}$?

A) $\frac{18}{7}$

B) $\frac{19}{7}$

C) $\frac{17}{6}$

D) $\frac{15}{6}$

21. What is the next figure in the picture sequence?

A)

B)

C)

D)
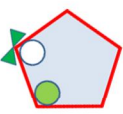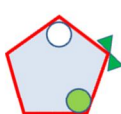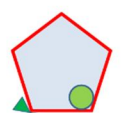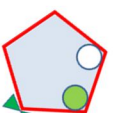
22. How many squares are there in the figure?

A) 10

B) 12

C) 13

D) 14
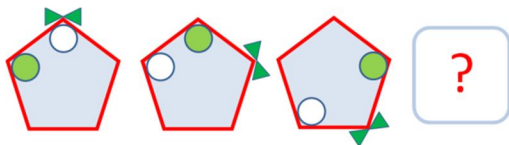
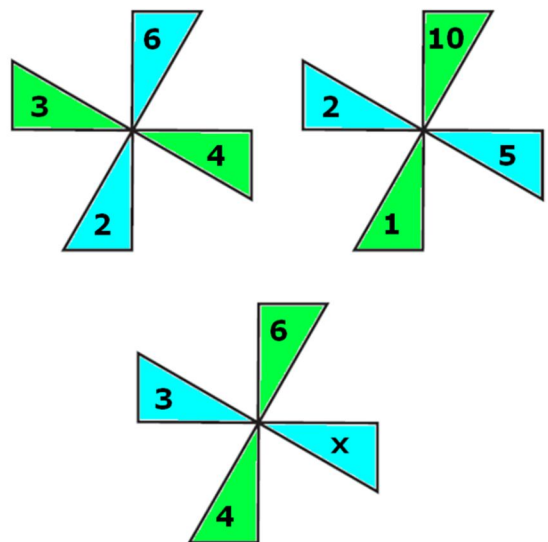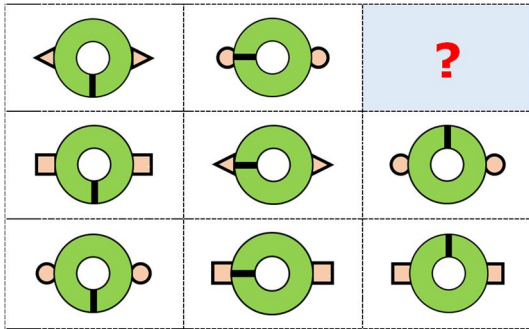**23.** There is a common relation among the numbers in each figure below.


What is the value of x in the third?

A) 5

B) 6

C) 8

D) 10

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24.

Ara wants to crack the above code according to given hint.

HINT

6 8 2	ONE NUMBER IS CORRECT AND WELL PLACED
6 1 4	ONE NUMBER IS CORRECT BUT WRONG PLACED
2 0 6	TWO NUMBER IS CORRECT BUT WRONG PLACED
7 3 8	NOTHING IS CORRECT
7 8 0	ONE NUMBER IS CORRECT BUT WRONG PLACED

Which of the following is the correct code?

A) 062   B) 042

C) 026   D) 024

25.

Which number replaces the question mark above?

A) 135   B) 196

C) 216   D) 256

26. The numbers are coded by figures as

shown in the figure.

Which of the following is equal to

 ?

A) 423   B) 342

C) 432   D) 341

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27. What is the missing shape in the figure?

A)   B)

C)   D)

28.
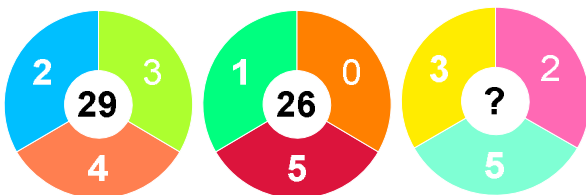
Which number replaces the question mark above?

A) 34   B) 38

C) 49   D) 53

29. Ahmet goes directly from school to home. He counts each tree on the way.
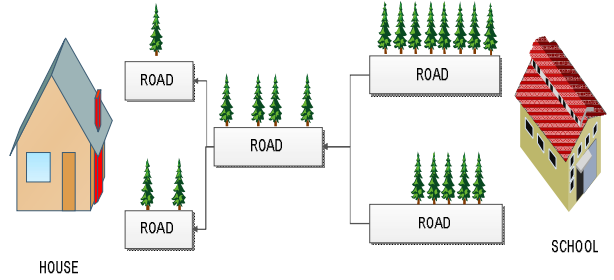
Which of the following number can't be his result?
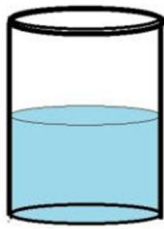
A) 14   B) 13

C) 12   D) 10

30.
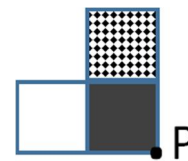
After rotating the given figure 180° clockwise about the point P, what will be the figure look like?

A)   B)

C)   D)

31.

A solution has a pH of 7.

pH = 7

If an acidic liquid is slowly added into this solution, how does the pH of the solution change?

A) pH does not change

B) pH doubles

C) pH increases slowly

D) pH decreases slowly

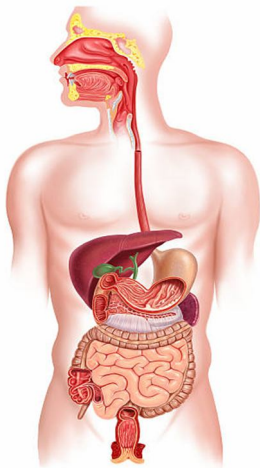**32.** As it is shown in the figure in which process sex cells are produced?
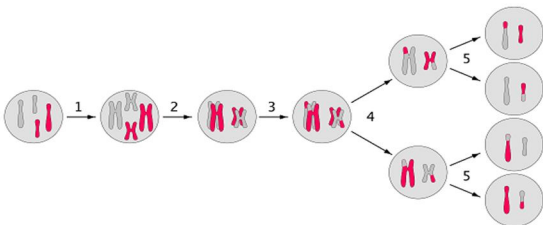
A) mitosis

B) meiosis

C) heredity

D) chromosomes
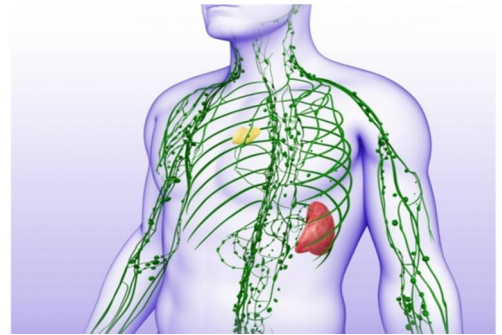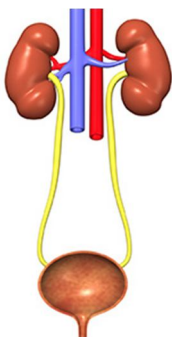

33. The lymphatic system…………………………

A) glands send out chemical messages

B) pumps blood through all of your blood vessels

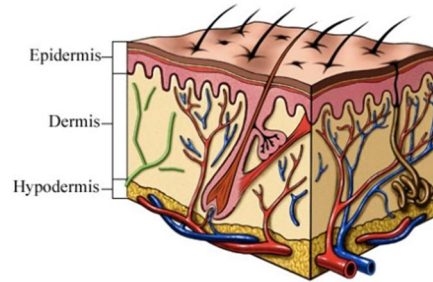C) helps get rid of bacteria and virus

D) removes wastes from the blood

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THE INTEGUMENTARY SYSTEM

Epidermis
Dermis
Hypodermis

Our skin has many functions to keep us healthy.

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34. Which of the following organ aids digestion by producing bile?
A) small intestine

B) liver

C) pancreas

D) stomach

36. Which of the following is not a function of skin?
A) it keeps water in the body

B) it helps to regulate body temperature

C) it stores energy

D) it helps to get rid of some wastes

35. Where is urine stored until it can be eliminated?
A) urinary bladder   C) nephron

B) urethra   D) ureter

37. There are different systems in human body. Reproductive system is one of them.
What is the main function of reproductive system?

A) Helping the blood move through the vessels

B) Producing new generation

C) Protecting body against germs

D) Digesting food

**38.** The figure below shows three different organisms that reproduce asexually.

| Planarian | Hydra | Starfish |
| A | B | C |
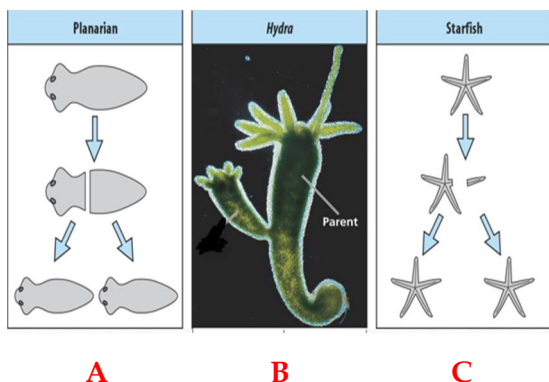
Choose the correct order for asexual reproduction?

A) Budding – fragmentation- regeneration

B) Regeneration-budding- fragmentation

C) Fragmentation-budding- regeneration

D) Fragmentation- regeneration-budding.

39. What is the most useful unit for measuring distances within the solar system?

A) the light-year

B) the parsec

C) the kilometer

D) the astronomical unit

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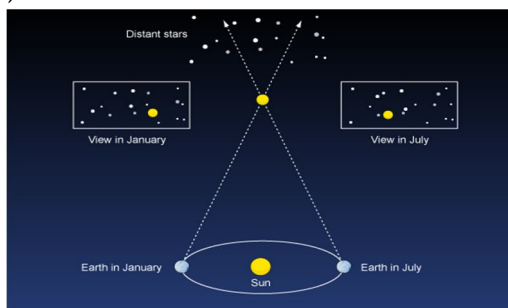
40. Which of the following is the hottest?

A) a red giant superstar

B) a small white dwarf star

C) a main-sequence yellow star

D) a main-sequence blue star

41. Which equation would you use to find mechanical advantage?

A) MA = work output/work input X 100

B) MA = output force/input force

C) MA = work input/work output X 100

D) MA = input force/output force

42. Which of the following is the largest planet in our solar system?

A) Earth

B) Jupiter

C) Saturn

D) Uranus

43. The distance from the sun to Mercury is **57,910,000** km. Calculate the time it takes for light to travel that distance If speed of light is equal to **300,000** km/s.

A) 190 s

B) 195 s

C) 192 s

D) 193 s

Lever is a simple machine that consists of a bar that pivots at a fixed point

(fulcrum).

44. According to this information which of the following is/are third class lever?

I.hammer   II.wheelbarrow   III.scissor

A) II only

B) I and II

C) II and III

D) I only

**45.** Rain, sleet, or snow with a high concentration of acids is called _____.

A) precipitation

B) Oxidation

C) lichens

D) Mechanical Weathering

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A student had a chance to examine the soil and rock layers around in an excavation. He realized that the soil above shows no similarity with the rock layer beneath.

46. According to this information, which one of the following statements explains the situation best?

A) Soil is formed from the rock beneath.

B) Rock layer must be parent rock

C) Rock was transported from elsewhere

D) Soil must be transported from elsewhere

48. There are many ways that pathogens can be pass from one person to another. Which one gives all agents correctly?

A) Air-food and water-person to person-immunity-animals

B) Contaminated objects-vaccines-air-animals-food and water

C) Air-pasteurization-person to person-animals-vaccines

D) Animals-air-food and water-person to person-contaminated objects.
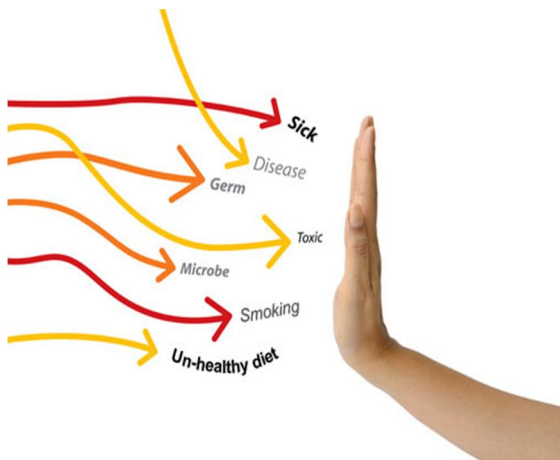
47. To prevent our body before infection we have one method that prepare our body for bacterial and viral infection, that is called…………
A) addiction
B) antibiotics
C) Pasteurization
D) vaccination

49. Which of the following processes is NOT a part of the water cycle?

A) Deposition

B) Evaporation

C) Condensation

D) Precipitation

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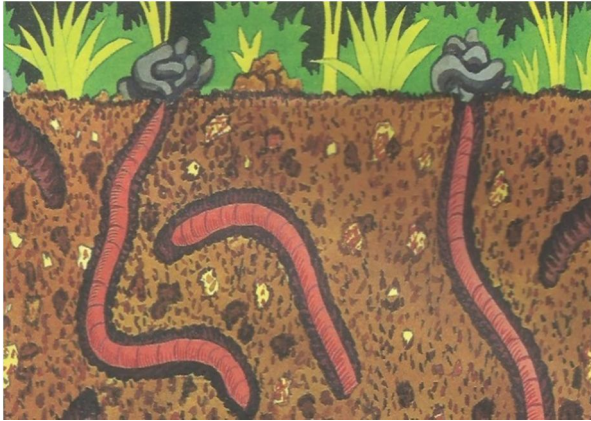
50. _____ is the organic material formed in soil from the decayed remains of plants and animals.

Choose the correct option.

A) Bedrock

B) Humus

C) Parent Rock

D) Leaching

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51. Sam said to me, "Are you hungry?"
Sam asked me …............... .

A) I was hungry.

B) If I was hungry.

C) that am I hungry.

D) If am I hungry.

52. What ……….. you like to be?
I'd like to be a pilot.
A) did
B) would
C) do
D) had

53. They grow coffee in Brazil.
Coffee ……… in Brazil.

A) is grown
B) is grew
C) are grown
D) are grew

54. It is very difficult to ___ what will
happen next year.

A) forgive
B) predict
C) assert
D) doubt

55. If you eat unhealthy foods and don't
do any exercise, in time you'll _____
weight.

A) take on
B) put on
C) take up
D) put up

56. Which one of these words is an
adverb?

A) difference
B) different
C) differently
D) more different

57. Which letter is silent in the word
"**answer**"?
A) /s/
B) /w/
C) /e/
D) /r/

58. – "How much money ……?
– "I have $10."

A) do you have?
B) do you have got?
C) have you had?
D) have you got?

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59. We have been waiting for the meal
_____ a while, but nobody has served
yet.

A) since
B) during
C) until
D) for

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60. Nothing had come easy to John; he'd
had to struggle ____ everything he'd got
____ life.

A) with / through
B) about / around
C) for / in
D) from / during