ENGLISH TEST QUESTIONS

Click on the letter choices to determine if you have the correct answer and for question explanations.
(An actual ACT English Test contains 75 questions to be answered in 45 minutes.)

DIRECTIONS: In the passage that follows, certain words and phrases are underlined and numbered. In the right-hand column, you will find alternatives for the underlined part. In most cases, you are to choose the one that best expresses the idea, makes the statement appropriate for standard written English, or is worded most consistently with the style and tone of the passage as a whole. If you think the original version is best, choose "NO CHANGE." In some cases, you will find in the right-hand column a question about the underlined part. You are to choose the best answer to the question.

You will also find questions about a section of the passage, or about the passage as a whole. These questions do not refer to an underlined portion of the passage, but rather are identified by a number or numbers in a box.

For each question, choose the alternative you consider best and fill in the corresponding oval on your answer document. Read the passage through once before you begin to answer the questions that accompany it. For many of the questions, you must read several sentences beyond the question to determine the answer. Be sure that you have read far enough ahead each time you choose an alternative.

The Joy of Running

[1]

I keep in shape by running on an indoor track several times a week. There are many advantages to running as a sport, of which the top two advantages are: [1]

I never have to reserve a court or find teammates;

1. **A.** NO CHANGE

B. sport, of which a few of the many advantages are:

C. sport, which I will now list:

D. sport:

teammates are usual in many sports; I can run at [2]

2. **F.** NO CHANGE

G. those who play tennis do have to worry about courts;

H. although running is hard on one's feet;

J. I need only shoes for equipment;

3. **A.** NO CHANGE

my convenience and I can set my own pace. Just

3

running is, however, rather boring, so I've made it

interesting by watching the other runners. 4

B. convenience, and;

C. convenience; and

D. convenience and,

4. Which of the following sentences, if added here, would best introduce the variety of runners discussed in the rest of the essay?

F. Runners as a group take their hobby very seriously.

G. For fun, I've divided runners into groups, and I assign each runner I see to a group.

H. Running is excellent exercise and many people really have fun doing it.

J. Some people run by themselves and others like to run in marathons.

[2]

Some are very serious; running is a
5

discipline for them. 6 They run hard and gracefully, easily passing the rest of us. Their clothing looks comfortable and functional. I see them doing stretching exercises to warm up and cooling-down exercises after they run.

5. **A.** NO CHANGE

B. serious, as to them

C. serious; since

D. serious and,

6. The writer wishes to add information here that will explain and further support the point made in the preceding sentence. Which of the following sentences will do that best?

F. They like the discipline and are very serious about their running.

G. They run with a single-minded intensity that is admirable but intimidating.

H. When they run, they run with both discipline and great seriousness.

J. Running is for them a very serious discipline and they are intensely devoted to it.

[3]

7 They wear expensive, fashionable outfits, perfectly fit and sleek, always new-looking.

7. The writer wishes to begin Paragraph 3 with a sentence that strengthens the focus of the paragraph, while providing a transition from Paragraph 2. Which of the following would be the best choice?

A. Some runners run for health reasons.

B. Some runners run to be admired.

C. Runners come in a wide range of ages.

D. Some people like money and the things money can buy.

Neither these runners nor their clothes, ever look
8
sweaty or messy. One young man ran for two hours, and his sweatband was dry, his hair in place, and his shoes unscuffed. Such runners don't so much exercise as perform.

8. F. NO CHANGE

G. clothes do they

H. clothes—

J. clothes

[4]

Then there are the middle-aged people, some older and in worse shape than I. Many of them are functionally dressed in old shorts and T-shirts. Like me, they don't run very fast, and they would walk
9
a lap every now and then. Although some look as
10
though they were once athletes, most seem to be grimly performing to their doctor's prescription.

9. A. NO CHANGE

B. if they would

C. they used to

D. they

10. F. NO CHANGE

G. seem to be retired athletes, looking

H. seemingly look to be

J. look to be

[5]

Some runners, of all ages, are there to lose weight. 11 Others run for fun, like children at play, and still others seem to see the track as a social

11. The writer wants to describe how the runners mentioned in the preceding sentence run. Which of the following

club, a place to meet friends.

[6]

My favorite social runners are a pair of young women. Fashionably garbed and on the alert for [12] young men. They listen to a Walkman radio, not unusual among runners, but they have one between them with two sets of earphones. Blithely running along the earphone cord dangles [13] between them.

[7]

Similarly, running [14] may itself be a boring sport, but the other runners, an interesting selection of humanity, can [15] make it fun.

sentences, if added here, will do that best?

A. They labor determinedly.

B. They know running helps you lose weight.

C. Running is at least as good for weight loss as tennis or swimming.

D. Losing weight is what it's all about for them.

12. **F.** NO CHANGE

G. women fashionably

H. women; fashionably

J. women, and fashionably

13. **A.** NO CHANGE

B. Dangling, they run blithely along, the earphone cord

C. Running blithely along, the earphone cord dangles

D. They run blithely along, the earphone cord dangling

14. **F.** NO CHANGE

G. However, running

H. Running

J. Furthermore, running

15. **A.** NO CHANGE

B. humanity; can

C. humanity. Can

D. humanity can

MATHEMATICS TEST QUESTIONS

Click on the letter choices to determine if you have the correct answer and for question explanations.
(An actual ACT Mathematics Test contains 60 questions to be answered in 60 minutes.)

DIRECTIONS: Solve each problem, choose the correct answer, and then fill in the corresponding oval on your answer document.

Do not linger over problems that take too much time. Solve as many as you can; then return to the others in the time you have left for this test.

You are permitted to use a calculator on this test. You may use your calculator for any problems you choose, but some of the problems may best be done without using a calculator.

Note: Unless otherwise stated, all of the following should be assumed.

1. Illustrative figures are NOT necessarily drawn to scale.
2. Geometric figures lie in a plane.
3. The word *line* indicates a straight line.
4. The word *average* indicates arithmetic mean.

1. If 60% of the weight of a 2,200-pound car should be supported by the rear tires, how many pounds should be supported by the rear tires?

A. 120

B. 600

C. 1,200

D. 1,320

E. 1,600

2. $|3 - 7| - |4 - 1| = ?$

F. 1

G. 5

H. 7

J. 15

K. –7

3. What is the average of $\frac{3}{8}$ and 0.065 ?

A. 0.05125

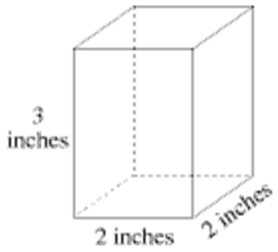
B. 0.1825

C. 0.22

D. 0.375

E. 0.5125

4. The total surface area of the rectangular box shown below is the sum of the areas of the 6 sides. What is the box's total surface area, in square inches?



F. 12

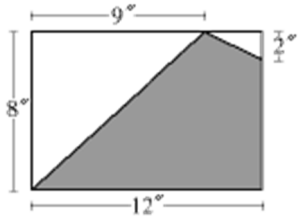
G. 16

H. 20

J. 24

K. 32

5. Lengths are shown in inches on the drawing of the rectangle below. What is the shaded area, in square inches?



A. 18

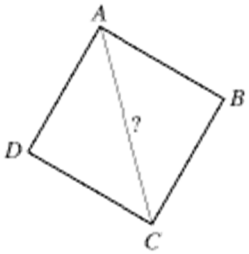
B. 24

C. 57

D. 78

E. 96

6. Square *ABCD* below has a perimeter of 28 inches. How many inches long is diagonal $\overline{AC}$?



F. 7

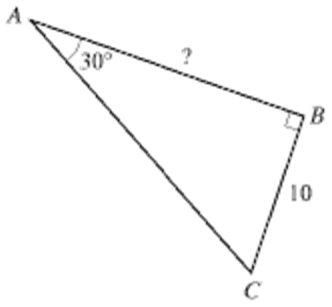
G. $7\sqrt{2}$

H. $7\sqrt{3}$

J. 14

K. $\sqrt{14}$

7. In the figure below, $\angle$B is a right angle and the measure of $\angle$A is 30°. If $\overline{BC}$ is 10 units long, then how many units long is $\overline{AB}$?



A. 5

B. 10

C. 20

D. $\frac{10}{3}\sqrt{3}$

E. $10\sqrt{3}$

8. On sunny days, Zina takes a shortcut across a field to get to school, as shown below. On rainy days, she stays on the sidewalks. On rainy days, how many yards longer is Zina's walk to school?

F. 60

G. 90

H. 150

J. 180

K. 210

9. A scuba diver often sends up a balloon-type marker. The marker starts out fairly small and gets larger as it approaches the surface. The chart below shows the marker's volume at multiples of 33 feet below the surface of the water. Which of the following equations fits these data?

d	depth in feet	0	33	66	99	132
V	volume in liters	1	$\frac{1}{2}$	$\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{5}$

A. $V = \frac{33}{d+33}$

B. $V = \frac{d-33}{33}$

C. $V = -\frac{d}{66} + 1$

D. $V = \frac{132-d}{d}$

E. $V = \frac{d-33}{\frac{d}{33}+1}$

10. If x is a real number greater than 1,000,000, which of the following fractions is the smallest in value?

F. $\frac{5}{x+1}$

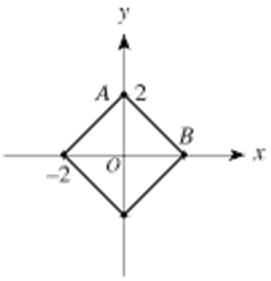
G. $\frac{5}{x-1}$

H. $\frac{x+1}{5}$

J. $\frac{5}{x}$

K. $\frac{x}{5}$

11. In the square graphed below, what is the slope of line segment $\overline{AB}$?



A. –2

B. –1

C. $\frac{1}{2}$

D. 1

E. 2

12. What is the sum of the 2 real solutions to the equation $x = 6 - x^2$?

F. 6

G. 2

H. 1

J. –1

K. –6

4 ○ ○ ○ ○ ○ ○ ○ ○ ○ 4

SCIENCE TEST QUESTIONS

Click on the letter choices to determine if you have the correct answer and for question explanations.
(An actual ACT Science Test contains 40 questions to be answered in 35 minutes.)

DIRECTIONS: The passage in this test is followed by several questions. After reading the passage, choose the best answer to each question and fill in the corresponding oval on your answer document. You may refer to the passage as often as necessary.

You are NOT permitted to use a calculator on this test.

During the development of chemistry, many chemists attempted to explain the changes that occur when *combustible* (capable of burning) materials burn and metals corrode or rust. The following are two proposed theories.

Phlogiston Theory

According to this theory, combustible materials, such as wood, coal, or metal contain a massless "essence" or presence called phlogiston. When combustion occurs, the phlogiston is released from the combusting object and is absorbed by the air. For example, when a piece of wood is burned, phlogiston is released to the air and the wood is converted to ash. The ash is free of phlogiston and can no longer support combustion. Similarly, if a metal is heated, the phlogiston is lost to the air and the metal is converted into a nonmetallic, powdery substance called ash, or calx. The *corrosion* (changing of a substance by a chemical reaction) of metals, such as the rusting of iron (Fe), also involves the loss of phlogiston from the metal, but at a slower rate than burning. Rust can be turned back into metal by heating it in air with a substance rich in phlogiston, such as charcoal. A transfer of phlogiston from the charcoal to the rust converts the rust back to metal.

Oxygen Theory

According to this theory, burning and rusting involve an element called oxygen, which is found in the air. The complete combustion of a piece of wood involves the rapid reaction of the wood with oxygen gas (O_2) to produce carbon dioxide (CO_2), which is a nonflammable gas, and water (H_2O). The rusting of iron involves the slow reaction of iron with oxygen to produce iron oxides such as Fe_2O_3. These iron oxides are known as rust. Heating rust with charcoal produces iron because the charcoal combines with the oxygen in the rust. In these transformations, there is a *conservation of mass* (the total mass of the reactants must equal the total mass of the products in a chemical reaction). In these reactions matter is neither created nor destroyed, but merely transformed.

1. Which of the following assumptions is implicit in the Phlogiston Theory?

A. All combustible substances combine with phlogiston as they burn.

B. All substances that burn contain phlogiston.

C. Metals cannot be broken down by chemical means.

D. The loss of phlogiston by a substance will always

6. According to the Phlogiston Theory, the gases collected from the complete burning of a piece of charcoal in air would be capable of:

F. converting the ash from corroded tin back to tin metal.

G. supporting combustion of another piece of charcoal.

H. rusting iron.

J. converting wood ash into rust.

result in the production of heat and light.

2. The Phlogiston Theory could best be tested by measuring the:

F. amount of light produced in the burning of a variety of combustible substances.

G. amount of heat produced in the burning of a variety of combustible substances.

H. masses of all the reactants and products before and after the reaction.

J. amount of water produced when a substance burns.

3. According to the Oxygen Theory, the gases produced from the complete combustion of a candle:

A. can support the breathing of a mouse.

B. are nonflammable.

C. are toxic to growing plants.

D. are rich in hydrogen gas.

4. According to the Phlogiston Theory, the complete corrosion of zinc metal in air will yield a powdery substance that:

F. cannot be converted back to zinc metal.

G. contains pure phlogiston.

H. contains no phlogiston.

J. is a combination of the zinc metal and phlogiston.

5. According to the Oxygen Theory, both the burning of a material and the rusting of a metal involve:

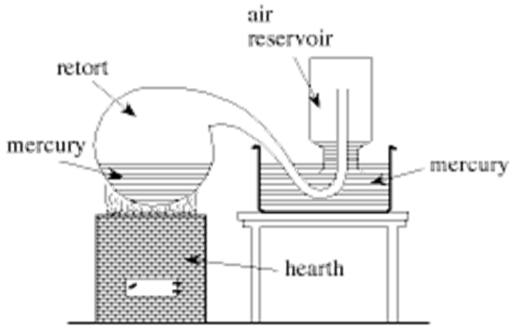
A. converting the elements of the material into gaseous compounds.

B. forming oxygen-containing compounds from the elements in the material.

C. removing oxygen from the material and releasing it into the air.

D. producing high temperatures as a result of the chemical reactions.

7. A chemist heated a sample of mercury for several days in the apparatus shown below. As the experiment proceeded, the mercury in the retort became covered with a red powder, and the volume of mercury increased in the air reservoir. The remaining material in the reservoir would not support combustion. Which of the following theories is supported by the results of this experiment?



A. The Phlogiston Theory, because the red powder resembled an ash

B. The Phlogiston Theory, because the air in the reservoir could not support combustion and therefore did not contain oxygen

C. The Oxygen Theory, because the mercury level dropped in the air reservoir indicating increased oxygen content

D. The Oxygen Theory, because the mercury level rose in the air reservoir indicating decreased oxygen content