

**TASK 1 LISTENING (10 x 1 = 10 points)**

**You will hear a recording about vaccines. Mark the sentences below true (T) or false (F). Write your answers in the table below.**

1. The government has advised that only people with medical problems be vaccinated against flu. T/F
2. Influenza (the flu) is a respiratory disease that makes you feel very sick. T/F
3. When people get vaccinated, flu won't spread through the population to a great extent. T/F
4. According to Dr Smith, vaccines are not a proven method of disease prevention. T/F
5. Scientists have been developing flu vaccines from the 1920s. T/F
5. Researchers make new flu vaccines every year and their work is based on the previous year's flu virus. T/F
7. The World Health Organization recommends vaccinations against flu only for healthcare workers. T/F
8. Mark Li is against all vaccines. T/F
9. Mark Li raises the question whether the flu vaccine has been properly tested. T/F
10. In Mark Li's opinion, there isn't one single scientific study that proves that this year's flu vaccine works. T/F

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
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**TASK 2 READING COMPREHENSION**

**A (5 x 1 = 5 points)**

**Read the article below. Mark the statements true (T) or false (F) on the basis of what you have read. Write your answers in the table below.**

A live or hot wire is a conducting wire that carries electrical current in the form of oscillating voltage. Contact with the wire can cause an electrical shock in some settings, as a body can act as a ground and the electricity will flow through the path of least resistance, the body, to reach the ground. Special precautions are necessary to limit the risk of electrical shock from live wires, whether they are downed electrical wires or household wiring.

By convention, many electrical codes insist on the use of color coding in wiring for safety. A live wire may be black, brown, or red, depending on the region. This alerts people to the fact that it carries current and may be energized. In household electrical wiring, the complementary wire is the so-called "neutral." Wire flows through the live wire to reach an appliance, moves through the circuit created by the appliance, and exits through the neutral wire.

Technically, both live and neutral wires can carry current in such circuits, and some household wiring does not differentiate. In other cases, an electrician may install polarized outlets, where one hole is slightly smaller than the other. The smaller hole accommodates the live wire, while the larger hole is the neutral. This can increase the safety of appliances connected to the outlet, especially when paired with the use of a ground. The ground provides a safe path for electricity to limit the chances of electrical shocks.

The live wire is insulated, with the level of insulation depending on the voltage. Plastics, fabrics, paper, and gels can all be used as insulating agents. Insulation limits the contact between it and other conductors, which prevents shorts. It also ensures that a live wire doesn't energize something like the casing of an appliance. Insulation tends to wear over time, especially in harsh environments. It is important to periodically inspect electrical wiring for signs of hazards like worn insulation or heavily bent and potentially broken wires.

Safety around live wires is important, especially in the case of high voltage wiring like that used in overhead electrical lines and industrial facilities. Many electrical systems have automatic cutoff features to de-energize in the event of a problem like a ground failure or a fallen power pole. In other cases, a technician may need to manually cut off power. Unless directed otherwise, it is advisable to assume that exposed electrical wiring is live, and could post an electrocution hazard.

*Adapted from: What Is a Live Wire? (with pictures) (aboutmechanics.com)*

1. Touching a live wire doesn't pose any risks.
2. A live wire may be green.
3. The ground increases the risk of electric shock.
4. Electrical wiring should be checked systematically over longer periods of time.
5. Exposed electrical wires should always be regarded as live.

1	2	3	4	5
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**B (5 x 1 = 5 points)**

**Five phrases have been removed from the text. You must decide which phrase goes into which gap. There is one phrase extra which you do not need to use. Write your answers in the table below.**

Borosilicate glass is a type of glass that includes at least 5% boric oxide. The boric oxide makes the glass resistant to extreme temperatures, and also (1) \_\_\_\_\_. This glass is very popular in the manufacture of scientific instruments, and it was once widely used to make glass for kitchens as well. Today, soda-lime glass is the glass of choice for kitchenware, due to the fact that it is generally cheaper to produce.

Invention of borosilicate glass is generally credited to Otto Schott, a German glassmaker who worked in the 19th century. By the late 1800s, the process for making it had been refined, and in 1915, a famous line of borosilicate (2) \_\_\_\_\_. Because it is stronger and more durable than conventional glass, it has a number of far reaching uses.

This glass is not invincible, of course. It will crack if subjected to very sudden and radical temperature fluctuations, or if it is dropped. The glass is more likely to crack or snap than to shatter, however, making it (3) \_\_\_\_\_ is a concern. In the event that products made with the glass do crack, it is generally easier and safer to clean up than shattered glass.

Borosilicate glass can handle both extreme heat and cold, making it very popular for laboratory glassware and other scientific instruments. It also has a (4) \_\_\_\_\_, which can make it useful

for things like telescopes and other high precision lenses where the surface of the lens must be very even to get a clear image.

The glass is also resistant to chemical corrosion, which can be extremely useful for experiments and chemical storage. Although all glass tends to be fairly chemical resistant, this variety is able to handle extremely volatile chemicals, along with nuclear waste.

In addition to being found in scientific labs, borosilicate glass can also be seen in windows, high-end lighting, cookware, and some other applications. As a general rule, (5) \_\_\_\_\_ than those made with ordinary glass, because these products require greater heat and more labour to produce.

*Adapted from: <https://www.aboutmechanics.com/what-is-borosilicate-glass.htm>*

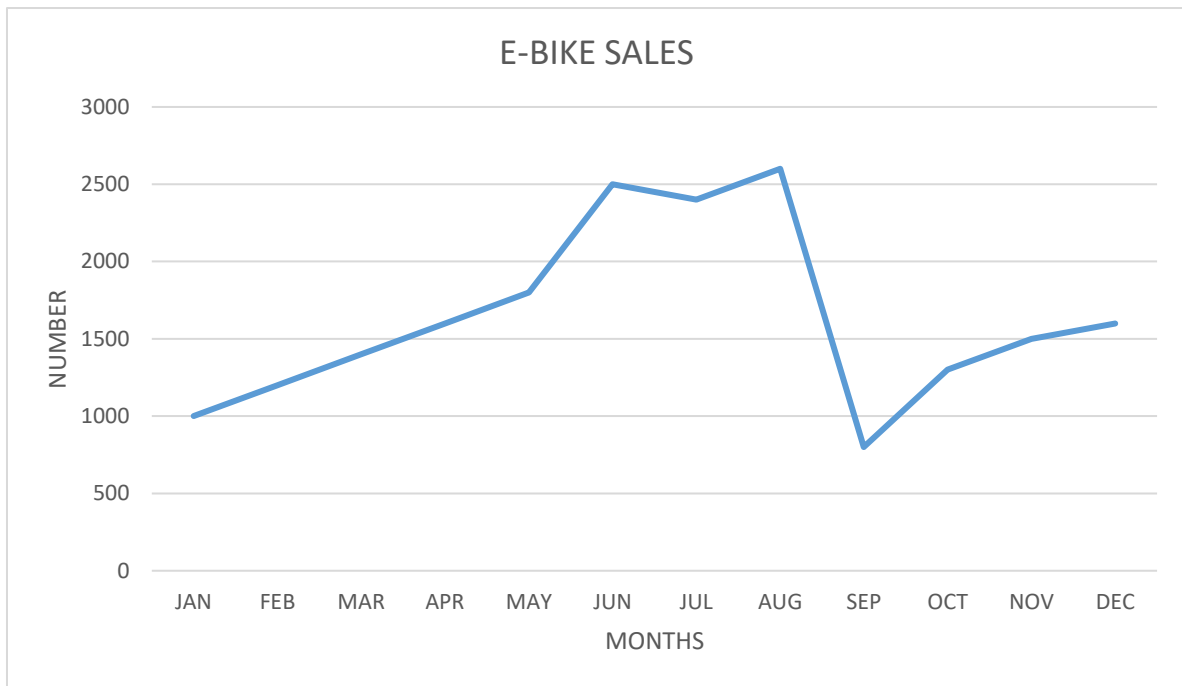
- A. kitchen products was released under the Pyrex label
- B. products made with it will be more expensive
- C. specialty containers that require very high temperature tolerance
- D. reduced rate of thermal expansion
- E. safer to have around in a situation where breakage
- F. improves its resistance to chemical corrosion

1	2	3	4	5
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### TASK 3 WRITING

**A: (6 x 0.5 = 3 points)**

**Study the graph and complete the description with the expressions given below. There are two extra expressions that you do not need to use. Put your answers in the table below.**



- A. rising
- B. stood
- C. decline
- D. gradual
- E. hit a low
- F. recovered
- G. levelled off
- H. fluctuated

The graph shows the sales of electric bicycles by a leading Polish retailer last year. Electric bicycles are becoming more and more popular, particularly in big cities and the results are promising. In January the number of e-bikes sold (1) \_\_\_\_\_ at 1000. Through February and March, there was a (2) \_\_\_\_\_ rise in sales with 1200 sold in the second month and 1400 in the third one. Sales continued (3) \_\_\_\_\_ in April with 1600 e-bikes sold and May hitting 1800. In the summer months they (4) \_\_\_\_\_ around the 2500 mark because customers are always more interested in cycling when it is hot. In autumn electric bike sales usually (5) \_\_\_\_\_ and this is what happened last year too. In September the company sold just 800 bikes. Sales (6) \_\_\_\_\_ in October with 1300 bicycles sold and an early Christmas campaign with a price reduction helped sell 1500 e-bikes in November and 1600 in December.

1	2	3	4	5	6



1	2	3	4	5
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**TASK 5 MATHS (10 x 0.5 = 5 points)**

Complete the following sentences with the words below. There are three extra words that you do not need to use. Write your answers in the table below.

**absolute, decimal, diameter, divide, force, multiplied, parallel, rectangular, round, thirds, thousand, thousands, average**

- What was your (1) \_\_\_\_\_ speed from Poznań to Warsaw?
- 0.5 is a (2) \_\_\_\_\_ fraction.
- You must check the (3) \_\_\_\_\_ (Ø) before drilling.
- What's the (4) \_\_\_\_\_ value of  $|-5|$  ?
- The shape of this garage is not square, it is (5) \_\_\_\_\_.
- The power of 5 kW is equal to five (6) \_\_\_\_\_ Watts.
- Two (7) \_\_\_\_\_ is approximately equal to 65 percent.
- || These two lines are (8) \_\_\_\_\_.
- We will pay fifty-fifty, so please (9) \_\_\_\_\_ the total by two.
- Car tires have a (10) \_\_\_\_\_ shape.

<b>1.</b>	<b>2.</b>	<b>3.</b>	<b>4.</b>	<b>5.</b>
<b>6.</b>	<b>7.</b>	<b>8.</b>	<b>9.</b>	<b>10.</b>