**MICROELECTRONICS AND MICROMINIATURIZATION**

The intensive effort of electronics to increase the reliability and performance of its products while reducing their size and cost led to the results that hardly anyone could predict. The evolution of electronic technology is sometimes called a revolution: a quantitative change in technology gave rise to qualitative change in human capabilities. There appeared a new branch of science — microelectronics.

Microelectronics embraces electronics connected with the realization of electronic circuits, systems and subsystems from very small electronic devices. Microelectronics is a name for extremely small electronic components and circuit assemblies, made by film or semiconductor techniques. A microelectronic technology reduced transistors and other circuit elements to dimensions almost invisible to unaided eye. The point of this extraordinary miniaturization is to make circuits long-lasting, low in cost, and capable of performing electronic functions at extremely high speed. It is known that the speed of response depends on the size of transistor: the smaller the transistor, the faster it is. The smaller the computer, the faster it can work.

One more advantage of microelectronics is that smaller devices consume less power. In space satellites and spaceships this is a very important factor.

Another benefit resulting from microelectronics is the reduction of distances between circuit components. Packing density increased with the appearance of small-scale integrated circuit, medium-scale 1С, large-scale 1С and very-large-scale 1С. The change in scale was measured by the number of transistors on a chip. There appeared a new type of integrated circuits, microwave integrated circuit. The evolution of microwave 1С began with the development of planar transmission lines.Then new 1С components in a fineline transmission line appeared. Other more exotic techniques, such as dielectric waveguide integrated circuits emerged.

Microelectronic technique is continuing to displace othermodes. Circuit patterns are being formed with radiation having wavelength shorter than those of light.

Electronics has extended man's intellectual power. Microelectronics extends that power still further.

1. ***Запишите, найдите в тексте английские эквиваленты следующих словосочетаний:***

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| 1. Интенсивные усилия;
2. увеличить надежность;
3. увеличить параметры;
4. уменьшить размер и стоимость;
5. вряд ли кто-нибудь мог прогнозировать;
6. количественные и качественные изменения;
7. область науки;
8. пленочная технология;
9. полупроводниковый метод;
10. сокращать элементы схемы;
11. суть миниатюризации в том, что;
12. создать схемы с долгим сроком службы;
13. чрезвычайно высокая скорость реакции;
 | 1. чем меньше, тем быстрее;
2. преимущество;
3. расходовать энергию;
4. польза;
5. уменьшение расстояния между элементами схемы;
6. большая интегральная схема;
7. микроволновая интегральная схема;
8. волновод;
9. линия передач;
10. смещать;
11. изображение схем;
12. расширять возможности человека
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1. ***Постройте монологическое высказывание, ответив на вопросы по тексту:***
2. What would you say about electronics?
3. Why is the development of electronics called a revolution?
4. What is microelectronics?
5. What techniques does microelectronics use?
6. What is the benefit of reducing the size of circuit elements?
7. What do you understand by the term of microminiaturization?
8. What does the speed of the signal response depend on
9. What advantages of microelectronics do you know?
10. What scales of integration are known to you?
11. How are microelectronics techniques developing?
12. ***Выпишите из текста подчеркнутые формы глагола-сказуемого в пассивном залоге, переведите, укажите число и грамматическое время.***

Например, **were extended** –были расширены, мн.число, время Past Simple.

1. ***Запишите предложения, подчеркните сказуемые, определите грамматическое время.***
2. There appeared a new branch of science — microelectronics.
3. Microelectronics is a name for extremely small electronic components and circuit assemblies.
4. A microelectronic technology reduced transistors and other circuit elements.
5. The speed of response depends on the size of transistor: the smaller the transistor, the faster it is.
6. The change in scale was measured by the number of transistors on a chip.