**Text 1 Measurements**

**Vocabulary:**

Dimension – величина, объем

Uncertainty – неточность, неопределенность, недостоверность

Wavelength – длина волны

Precision – точность

Error – ошибка

Stopwatch – секундомер

**Ex.1 Read and translate the following text.**

Measurement is the assignment of numbers to objects or events. It is a cornerstone of most natural sciences, technology, economics, and quantitative research in other social sciences.

Any measurement of an object can be judged by the following meta-measurement criteria values: level of measurement (which includes magnitude), dimensions (units), and uncertainty. They enable comparisons to be done between different measurements and reduce confusion. Even in cases of clear qualitative similarity or difference, increased precision through quantitative measurement is often preferred in order to aid in replication. For example, different colours may be operationalized based either on wavelengths of light or (qualitative) terms such as "green" and "blue" which are often interpreted differently by different people. The science of measurement is called metrology.

A measuring instrument is a device for measuring a physical quantity. In the physical sciences, quality assurance, and engineering measurement is the activity of obtaining and comparing physical quantities of real-world objects and events. Established standard objects and events are used as units, and the process of measurement gives a number relating the item under study and the referenced unit of measurement. Measuring instruments, and formal test methods which define the instrument's use, are the means by which these relations of numbers are obtained. All measuring instruments are subject to varying degrees of instrument error and measurement uncertainty.

Scientists, engineers and other humans use a vast range of instruments to perform their measurements. These instruments may range from simple objects such as rulers and stopwatches to electron microscopes and particle accelerators. Virtual instrumentation is widely used in the development of modern measuring instruments.

**Ex.2 Match the word with its definition.**

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| 1. error | a. the state of being inaccurate, unsettled or in doubt or dependent on chance |
| 2**.** measurement | b. a mistake, a wrong action attributable to bad judgment or ignorance or inattention |
| 3. metrology | c. the quality, condition, or fact of being exact and accurate |
| 4. uncertainty | d. the act or process of assigning numbers to phenomena according to a rule |
| 5. precision | e. the scientific study of measurement |

**Ex.3 Answer if the following statements are true or false. Correct the false ones.**

1. Measurement is an important feature of most natural and social sciences.

2. Metrology is the science of measurement.

3. Measuring instruments do not have any degrees of instrument error and measurement uncertainty.

4. Scientists and engineers use only high- precision instruments like electron microscopes.

5. A measuring instrument is a device for measuring a physical quantity.