**TRANSFORMERS**

One of the great advantages in the use of the alternating current is the ease with which the voltage may be changed by means of a relatively simple device known as a transformer. Although there are many different types of transformers and a great variety of different applications, the principles of action are the same in each case.

The transformer is a device for changing the electric current from one voltage to another. It is used for increasing or decreasing voltage. So the function of a transformer is to change voltage and current of an alternating system to meet requirements of the equipment used. It is known to be simple in elementary principle, and in construction that is it involves no moving parts.

Transformers change voltage through electromagnetic induction.

The principle parts of a transformer are: an iron core and, usually, two coils of insulated windings. One of them is called primary, another is called the secondary. The primary coil is connected to the source of power. The secondary coil is connected to the load. Thus, the primary is the coil to which power is supplied. The secondary is the coil from which power is taken. In scientific terms to produce an alternating magnetic flux in the iron core an alternating current must be passed through the primary coil. This flux is considered to induce electromotive force in both primary and secondary coils. The secondary coil is open – circuited. Current flows in the secondary coil when the latter is connected to the external circuit or load. The flow of current in the secondary coil tends to reduce the flux in the core. Transformers are placed inside a steel tank usually with oil to improve the insulation and also to cool the device.

**II. Guess the meaning of the following international words:**

1) transformer; 2) type; 3) principle; 4) electric; 5) function; 6) elementary; 7) construction; 8) induction.

**III. Translate into Russian the words and expressions from the text:**

1) advantage; 2) voltage; 3) relatively simple; 4) application; 5) increase; 6) to decrease; 7) to meet requirements; 8) moving parts; 9) iron core; 10) insulated windings; 11) load; 12) electromotive force; 13) to induce.

**IV. Give the English equivalents to the words below:**

1) переменный ток; 2) прибор; 3) принцип работы (действия); 4) электромагнитная индукция; 5) катушка; 6) первичная (вторичная) обмотка; 7) источник питания; 8) магнитный поток; 9) стальной контейнер; 10) остужать.

**V. State questions to the underlined words:**

1. Voltage may be changed by *a transformer*.

2. *Transformers* change voltage through electromagnetic induction.

3. Transformer is used for *increasing or decreasing voltage*.

4. The *primary winding* is connected to the source of power.

5. Transformers are placed inside *a steel tank*.

**VI. Answer the questions:**

1. What kind of device is a transformer?

2. What are the functions of a transformer?

3. What are the principle parts of a transformer?

4. What is the primary coil connected to?

5. What is the secondary coil connected to?

6. What are the principles of action of a transformer?

7. Where are transformers usually placed?

**VI. Topics for discussion:**

1. Transformer as an electric device;

2. Main parts and principles of a transformer action.