**I. Read the text**

**EFFECTS PRODUCED BY A CURRENT**

The current flow is detected and measured by any of the effects that it produces. There are three important effects accompanying the motion of electric charges: the heating, the magnetic, and chemical effects, the latter is manifested under special conditions.

The production of heat is perhaps the most familiar among the principal effects of an electric current. The heating effect of the current is found to occur in the electric circuit itself. It is detected owing to an increase in the temperature of the circuit. This effect represents a continual transformation of electric energy into heat. For instance, the current which flows through the filament of an incandescent lamp heats that filament to a high temperature.

The heat produced per second depends both upon the resistance of the conductor and upon the amount of current carried through it. The thinner the wire is, the greater the developed heat is. On the contrary, the larger the wire is, the more negligible the heat produced is. Heat is greatly desirable at times but at other times it represents a waste of useful energy. It is this waste that is generally called "heat loss" for it serves no useful purposes and decreases efficiency.

The heat developed in the electric circuit is of great practical importance for heating, lighting and other purposes. Owing to it people are provided with a large number of appliances, such as: electric lamps that light our homes, streets and factories, electrical heaters that are widely used to meet industrial requirements, and a hundred and one other necessary and irreplaceable things which have been serving mankind for so many years.

The electric current can manifest itself in some other way. It is the motion of the electric charges that produces the magnetic forces. A conductor of any kind carrying an electric current, a magnetic field is set up about that conductor.

This effect exists always whenever an electric current flows, although in many cases it is so weak that one neglects it in dealing with the circuit. An electric charge at rest does not manifest any magnetic effect. The use of such a machine as the electric motor has become possible owing to the electromagnetic effect.

The last effect to be considered is the chemical one. The chemical effect is known to occur when an electric current flows through a liquid. Thanks to it a metal can be transferred from one part of the liquid to another. It may also effect chemical changes in the part of the circuit comprising the liquid and the two electrodes which are found in this liquid. Any of the above mentioned effects may be used for detecting and measuring current.

**II. Give the English equivalents for the following words:**

1. выявлять, обнаруживать; 6. лампа накаливания;

2. измерять; 7. прибор;

3. заряд; 8. потеря энергии;

4. нить накала; 9. освещать;

5. тепловой эффект; 10. обнаруживаться, проявляться.

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

transformation, temperature, chemical, magnetic, special, practical, motor, electrode.

**IV. Insert words and expressions:**

1. The current flow is (выявляется и измеряется) by any of the effects that it produces.

2. There are three important effects accompanying the motion of (электрические заряды).

3. The current which flows through the (нить накала лампы накаливания) heats that filament to a high temperature.

4. Heat represents (потерю полезной энергии) at times.

5. Electric lamps (освещать) our homes, streets and factories.

6. The electric current can (проявлять) magnetic effect.

**V. Choose the correct translation:**

*The heating effect of the current is found to occur in the electric circuit itself.*

1. Установлено, что тепловой эффект электрического тока обнаруживается в самой электрической цепи.

2. Тепловой эффект электрического тока может появляться в самой электрической цепи.

3. Установлено, что тепловой эффект электрического тока должен обнаруживаться в самой электрической цепи.

*Когда в любом проводнике появляется электрический ток, вокруг него возникает магнитное поле.*

1. A conductor of any kind carrying an electric current, a magnetic field was set up about that conductor.

2. A conductor of any kind have been carrying an electric current, a magnetic field is set up about that conductor.

3. A conductor of any kind carrying an electric current, a magnetic field is set up about that conductor.

*Последний эффект, который необходимо рассмотреть – химический эффект.*

1. The last effect is considered to be the chemical one.

2. The last effect to be considered is the chemical one.

3. The last effect would be considered the chemical one.

*Известно, что химический эффект возникает, когда электрический ток проходит через жидкость.*

1. The chemical effect is known to occur when an electric current flows through a liquid.

2. The chemical effect is famous to occur when an electric current flows through a liquid.

3. The chemical effect may be known to occur when an electric current flows through a liquid.

*Именно движение электрических зарядов порождает магнитные силы.*

1. The motion of the electric charges produces the magnetic forces.

2. It is the motion of the electric charges that produces the magnetic forces.

3. The motion of the electric charges is certain to produce the magnetic forces.

**VI. Answer the questions:**

1. What effects does the current flow produce?

2. How is the heating effect detected?

3. What does the heat produced depend upon?

4. What is called “heat loss”?

5. How is the magnetic effect set up?

6. What is the main condition of the magnetic effect existence?

7. When does the chemical effect occur?