Unit Eighteen 18

1. a) Cover the right column and read the English words. Translate them into Russian and check your translation.

b) Cover the left column and translate the Russian words back into English.

half	[hɑ:f]	половина
to rectify	[ˈrektɪfaɪ]	выпрямлять
to amplify	[ˈæmplɪfaɪ]	усиливать
to convert	[kənˈvə:t]	преобразовывать, обращать
by means of		посредством, с помощью
that is why		вот почему
to put into operation		приводить в действие, запускать
half		половина

2 Distribute the words below into the three columns:

action	process	doer

[ju:s] use, [ju:z] use, rectifier, rectification, amplifier, amplify, convert, user, converter, application, apply, pulse, pulsation, operate, operator

4. Translate these word combinations into Russian:

a. half-wave _____

half-cycle _____

half-wave rectifier _____

positive half-cycles _____

electron tube application _____

negative half-cycles _____

by means of a filter _____

b. by means of the suppressor grid _____

tubes used as rectifiers _____

tubes used as oscillators _____

Use of Electron Tubes

Let us consider some cases of electron tube application. Tubes are common elements of radio and electronic devices. Tubes are used

as rectifiers – to convert a.c. into d.c.,
as oscillators – to produce oscillating waves and
as amplifiers – to amplify the input voltage and current.

Half-Wave Rectifier

Alternating current is converted into direct current by means of a rectifier.

A half-wave rectifier consists of a diode in series with a resistance. In order to put a rectifier into operation, a source of a.c. should be applied to it. When an a.c. source is applied the diode begins to conduct. The rectifier passes currents during positive half-cycles of the applied voltage. That is why it is called a half-wave rectifier. When the device operates d.c. flows in the same direction. It is a pulsating current. Since pulsations should be eliminated, a filter is applied. Pulsations are eliminated by means of this filter.

5. Complete the sentences using the correct variant:

1. Electron tubes are used	a) as amplifiers only. b) as oscillators only. c) as rectifiers, amplifiers and oscillators.
2. A.c. is converted into d.c.	a) by means of a rectifier. b) by means of an amplifier.
4. In order to put a rectifier into operation	a) d.c. is applied. b) a.c. is applied.
5. A half-wave rectifier passes currents	a) during positive and negative half-cycles. b) during positive half-cycles of the applied voltage.
6. Rectified current is	a) direct oscillating current. b) direct pulsating current.
7. Pulsations are eliminated	a) by means of a choke coil. b) by means of a filter.

6. Answer the following questions:

1. How are electron tubes used?
2. What type of device is called a rectifier?
3. By what means is alternating current rectified into direct current?
4. What elements does a half-wave rectifier consist of?
5. What current should be applied to put a half-wave rectifier into operation?
6. When does a half-wave rectifier pass current?
7. By what means are pulsations eliminated?