

Unit Fifteen 15

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.

device	[di'vaɪs]	прибор
field	[fi:ld]	поле
loose	[lu:s]	свободный, нежесткий
tight	[taɪt]	плотный
self-inductance		самоиндукция
to couple	['kʌpl]	соединять, сцеплять
to separate	['sepəreɪt]	отделять
to transfer	[træns'fɜ:]	переносить
therefore	['ðeəfɔ:]	поэтому

2. Put down the words with the opposite meaning and translate them into Russian.

Model: inconstant – constant

incompetent – _____	inactive – _____
incorrect – _____	inconsistent – _____
indirect – _____	unable – _____
indefinite – _____	inability – _____

3. Put down Russian equivalents of these word combinations. Then translate them back into English.

loose coupling – _____
tight coupling – _____
transformer coupling – _____
electromagnetic fields – _____

Coupling

When circuits are indirect-inductively coupled energy is transferred from one circuit to another using electromagnetic field of the inductance through which a varying current is flowing. The coupling device is a transformer. It is not in series with the elements of the circuit, therefore the coupling is indirect. The transformer consists of two windings: the primary and the secondary. The primary circuit is connected to the voltage source, the secondary – to the load circuit.

The coupling may be tight and loose. In case the coils of the coupling element are close together, the coupling is tight. In case the coils are separated the coupling is loose. In the loose coupling the mutual inductance is small compared with the self-inductance.

4. Complete the sentences using the correct variant:

- | | |
|---|---|
| 1. The circuit connected to the voltage source is called | a) the secondary circuit.
b) the primary circuit. |
| 2. The circuit receiving its energy through a coupling is | a) the primary circuit.
b) the secondary circuit. |
| 3. The function of a coupling element is | a) to separate the circuits.
b) to transfer energy.
c) to prevent a short between the circuits. |
| 4. When the coupling is tight | a) the coils are separated.
b) the coils are close together. |
| 5. When the coils are close together | a) the coupling is loose.
b) the coupling is tight. |
| 6. The circuits are indirectly coupled when | a) the coupling element is common to both circuits and is in series with their other elements.
b) the coupling element is not common to the circuits and is not in series with their other elements. |

6. Answer the following questions:

1. What type of circuit is called the primary?
2. What type of circuit is called the secondary?
3. What is the function of a coupling element?
4. What type of coupling is called loose?
5. What type of coupling is called tight?
6. In what case are the circuits directly coupled?
7. In what case are the circuits indirectly coupled?
8. What is the difference between a tight and loose coupling?
9. In what case should a coupling element be substituted?