

P-N JUNCTION

7.1. Vocabulary

Ex. 1. Match the words with their Russian equivalents.

1. to flow through	a. на одной волне
2. current	b. ток
3. negative terminal	c. полупроводник
4. resistor 	d. не усложнять
5. voltage	e. отрицательный терминал
6. semiconductor	f. диод
7. diode 	g. увеличить напряжение
8. keep it simple	h. цепь
9. to generate electricity	i. напряжение
10. circuit	j. подключить к
11. on the same page	k. положительный терминал
12. to limit current	l. генерировать электричество
13. to connect to	m. ограничить ток
14. turn up the voltage	n. протекать через
15. positive terminal	o. резистор

Ex. 2. Complete the sentences with the given words.

to flow through, turn up the voltage, keep it simple, semiconductor, current (4), diode (2), resistor, positive terminal, on the same page, negative terminal, voltage, circuit (3), to generate electricity, To connect to

The _____ (1) in a P-N junction allows the flow of electrons effectively.

A _____(2) is used to protect the _____(3) from too much _____(4) passing through.

The _____(5) across the P-N junction determines how well it functions in the _____(6).

A _____(7) material is essential for creating efficient P-N junctions in devices.

An electronic _____(8) often includes a P-N junction to control the flow of electricity.

A _____(9) is created using a P-N junction, allowing _____(10) to pass in one direction only.

_____(11) the power supply, you should attach wires to both terminals correctly.

Electrons need _____(12) the P-N junction for the device to work properly.

Solar panels are designed _____(13) using multiple P-N junctions.

A good design will limit _____(14) to prevent damage to the sensitive components.

The _____(15) of the battery connects to the P-side of the junction.

The _____(16) must be connected to the N-side of the junction for it to work.

When you _____(17), the _____(18) may start conducting more effectively.

It is best to _____(19) when explaining how a P-N junction operates.

We need to make sure we are _____(20) about the project outline.

7.2. Grammar

Ex. 1. Put the words in the correct order.

1. Of the American Ohl Laboratories is Bell attributed p-n Russell to discovery junction of physicist usually the

2. role serves Schottky junction, metal of p-n is n-type the case where a the special junction a semiconductor
3. devices “building blocks” or p-n basic of units electronic most elementary junctions are semiconductor
4. some the junction p-n modern electronics have that in interesting possesses useful properties applications
5. a relatively semiconductor p-doped is conductive

7.3. Reading

Ex. 1. Read the text.

In electronics, a P-N junction is an essential part of a semiconductor device like a diode. This junction allows current to flow through it when connected in a certain manner. To understand it better, imagine you have a simple electronic circuit with a resistor and a diode.

When you connect the positive terminal of a battery to the P-side and the negative terminal to the N-side, current can flow through the diode. This flow happens because the electrons from the N-side move towards the P-side. It's important to have a resistor because it helps to limit current and prevent damage to the components.

Let's keep it simple and say you want to generate electricity efficiently. You need to turn up the voltage slowly and ensure that everyone involved in setting up the circuit is on the same page. Understanding the basic principles of a P-N junction aids in designing effective electronic circuits and devices.

Ex. 2. Answer the questions.

1. What is a P-N junction and why is it important in electronics?
2. How does current flow through a diode with a P-N junction when connected to a battery?
3. Why is it necessary to have a resistor in the electronic circuit with a diode?
4. What happens when you connect the positive terminal of a battery to the N-side and the negative terminal to the P-side of the diode?
5. How can understanding the basic principles of a P-N junction help in designing electronic circuits?

6. Why is it important to turn up the voltage slowly when trying to generate electricity efficiently?
7. What role does everyone involved in setting up the circuit play in ensuring its success?