Тетрадь

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Оглавление

Часть I

Module 1

1.1 Exercise №1

1.1.1 Match the words (1-6) with their definitions (a-f). Use a dictionary if necessary.

1. stimulated
2. radiation
3. acronym
4. emission
5. beam
6. amplification

a. energy in the form of heat or light that you cannot see and which can be very harmful

b. a word formed from the initial letters of other words

c. the increase in volume of a signal

d. a line of radiation or particles flowing in one direction

e. the act of sending out gases or other substances

f. made stronger or more active

1.1.2 Solution

1. f
2. a
3. b
4. e
5. d
6. c

1.2 Exercise №2

1.2.1 In groups answer the questions.

1. What is a laser?

    a. a device which produces a very narrow beam of light useful in many technologies

    b. a process of optical amplification of light based on radiation emission

    c. both a and b

2. What kind of word is the word ‘laser’?

    a. acronym

    b. shortening

    c. contraction

3. Can you decode the word ‘laser’? (use the words from task 1)

    L... A... by Stimulated E... of R... .

1.2.2 Solution

1. a

2. a

3. Light Amplification by Stimulated Emission of Radiation

1.3 Exercise №3

1.3.1 Study the pictures below. Which of the following words and phrases refer to ordinary light (1) and which to laser light (2)?

Coherent; its intensity decreases with distance; highly monochromatic; it is not strictly monochromatic; organised; less intense; travels in one direction; incoherent; highly intense; concentrated; travels in all directions; disorganised.

1.3.2 Solution

`Ordinary light:`

- disorganized
- its intensity decreases with distance
- it is not strictly monochromatic
- less intense, incoherent
- travels in all directions

`Laser light:`

- organized
- Coherent
- highly monochromatic
- travels in one direction
- highly intense
- concentrated

1.4 Exercise №6

[Устно]

1.4.1 Read the text again and answer the following questions.

1. Why can we say that lasers were predicted long before their invention?
2. What is a laser? What does the word 'laser' mean?
3. What kind of beam do lasers have?
4. What do we mean by the words 'monochromatic, directional, and coherent' when we refer to laser light?
5. Why is the light from the laser so concentrated?
6. Who proposed the theoretical possibility of the process that made lasers possible?
7. Who created the first microwave generator?
8. Who demonstrated the first successful light laser?
9. What laser types are mentioned in the text?
10. Do you agree with the author's opinion that lasers have found myriads of useful applications? What examples do you think best prove this point?
11. While reading this text, which uses of lasers surprised you the most?
12. Can you think of an example of a laser device or technology that you have used or are using?

1.5 Exercise №7

[Устно]

1.5.1 Read the statements and decide which of them are true (T) and which are false (F) according to text 10A. Explain why.

1. The word 'laser' means microwave amplification by stimulated emission of radiation.
2. Laser was invented at the dawn of the 20th century.
3. Albert Einstein was the first inventor of a laser.
4. Laser came into existence only in the second half of the 20-th century.
5. Unfortunately most of the applications of a laser proved to be unattainable in the real world.
6. The use of lasers in thermonuclear fusion reactors may be the key to the future.
7. Laser weapons are widely used by the military.
8. In medicine lasers can be used for various surgical procedures.
9. Very few inventions can match the impact of the laser's invention.
10. Laser technology has a promising future.