

the tremendous capabilities of the laser beam, but they could not be realized until the laser of adequate capacity was developed. To make a laser device really useful the radiation intensity had to be increased (since capacity determines productivity) and high beam efficiency created.

Creating a highly effective laser device is still one of the main problems of quantum electronics. In a gas laser device all one has to do in order to increase the capacity is to increase the volume and the pressure of gas. This sounds simple, but the doing of it is not.

The best results were achieved with electro-ionizing laser devices (EILs) operating on carbon dioxide. They have found a wide field of application. EILs of some 10-kilowatt capacity can weld and cut metal; pulse EILs with radiation energy of 10 kilojoules and a pulse duration of 1/1,000,000th of a second can heat plasma to nearly thermonuclear temperatures.

*16. Закончите предложения в соответствии с содержанием текста:

- The list of jobs the laser can do is...
 - limited;
 - very short;
 - so long that it is impossible to name all of them.
- The laser productivity is determined by...
 - radiation intensity;
 - the volume of gas in a laser tube;
 - the size.
- One of the main problems of quantum electronics is...
 - creating a very small laser device;
 - creating a laser device which would operate in various conditions;
 - creating a highly effective laser device.

17. Заполните пропуски, пользуясь списком слов, данных ниже:

- One cannot ... all the jobs which the laser can do.
- Scientists say that the ... of the laser are tremendous.
- The laser is widely used for ... and ... metals.
- The gas lasers operating on ... has found a wide field of application.

cutting; capabilities; welding; carbon dioxide; list

Revision Exercise

Определите значения глагола *to be* в предложениях (§ 132). Текст переведите.

Physics is the science studying various phenomena in nature. Its object is to determine exact relations between physical phenomena. Physics

is divided very naturally into two great branches, experimental and theoretical. The task of the former is to make observations and carry out experiments. On the basis of the experimental facts theoretical physics is to formulate laws and predict the behaviour of natural phenomena. Every law is based on experiments, therefore it is important that experiments be done very accurately. It was the study of natural phenomena that made it possible to formulate various laws. There are still a lot of problems to be solved. Scientists all over the world are doing their best to find answers to numerous yet unsolved problems.



IT IS INTERESTING TO KNOW THAT...

...a laser beam is already widely used in medicine.

...a beam emitted by a helium-neon laser can be used for taking X-ray pictures, it being quite harmless for man's organism.

...laser beams are now being used for treatment and for diagnostics of various diseases.

ЗАКОНЧИВ РАБОТУ НАД УРОКОМ 17, ВЫ ДОЛЖНЫ ЗНАТЬ:

- Чтение букв и буквосочетаний, передающих звуки [ou] и [au].
- Грамматический материал: все формы причастия и способы их перевода, как определить в тексте независимый причастный оборот и правильно перевести его.
- Слова, выделенные для запоминания, с. 226.

Вы должны знать 416 слов и выражений.