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[https://www.100test.com/kao\\_ti2020/243/2021\\_2022\\_2007\\_E5\\_B9\\_B4\\_E6\\_89\\_98\\_c81\\_243485.htm](https://www.100test.com/kao_ti2020/243/2021_2022_2007_E5_B9_B4_E6_89_98_c81_243485.htm) Reading Comprehension Time: 55 minutes (including the reading of the directions). Now set your clock for 55 minutes. Question 110 The word laser was coined as an acronym for Light Amplification by the Stimulated Emission of Radiation. Ordinary light, from the Sun or a light bulb, is emitted spontaneously, when atoms or molecules get rid of excess energy by themselves, without any outside intervention . Stimulated emission is different because it occurs when an atom or molecule holding onto excess energy has been stimulated to emit it as light. Albert Einstein was the first to suggest the existence of stimulated emission in a paper published in 1917. However , for many years physicists thought that atoms and molecules always were much more likely to emit light spontaneously and that stimulated emission thus always would be much weaker. It was not until after the Second World War that physicists began trying to make stimulated emission dominate. They sought ways by which one atom or molecule could stimulate many other to emit light , amplifying it to much higher powers. The first to succeed was Charles H.Townes, then at Columbia University in New York . Instead of working with light , however, he worked with microwaves, which have a much longer wavelength, and built a device he called a "maser" for Microwave Amplification by the Stimulated Emission of Radiation. Although he thought of the key idea in 1951, the first maser was not completed until a couple of years

later. Before long, many other physicists were building masers and trying to discover how to produce stimulated emission at even shorter wavelength. The key concepts emerged about 1957. Townes and Arthur Schawlow, then at Bell Telephone Laboratories, wrote a long paper outlining the conditions needed to amplify stimulated emission of visible light waves. At about the same time, similar ideas crystallized in the mind of Gordon Gould, then a 37- year-old graduate student at Columbia, who wrote them down in a series of notebooks. Townes and Schawlow published their ideas in a scientific journal, Physical Review Letter, but Gould filed a patent application. Three decades later, people still argue about who deserves the credit for the concept of the laser.

1. The word "coin" in line 1 could be replaced by (A) created (B) mentioned (C) understood (D) discovered
2. The word "intervention" in line 4 can best be replaced by (A) need (B) device (C) influence (D) source
3. The word "it" in line 5 refers to (A) light bulb (B) energy (C) molecule (D) atom
4. Which of the following statements best describes a laser? (A) A device for stimulating atoms and molecules to emit light (B) An atom in a high-energy state (C) A technique for destroying atoms or molecules (D) An instrument for measuring light waves
5. Why was Towne ' s early work with stimulated emission done with microwaves? (A) He was not concerned with light amplification (B) It was easier to work with longer wavelengths. (C) His partner Schawlow had already begun work on the laser. (D) The laser had already been developed
6. In his research at Columbia University, Charles Townes worked with all of the following

EXCEPT (A) stimulated emission (B) microwaves (C) light amplification (D) a maser 7. In approximately what year was the first maser built? (A) 1917 (B) 1951 (C) 1953 (D) 1957 8. The word "emerged" in line 20 is closest in meaning to (A) increased (B) concluded (C) succeeded (D) appeared 9. The word "outlining" in line 21 is closest in meaning to (A) assigning (B) studying (C) checking (D) summarizing 10. Why do people still argue about who deserves the credit for the concept of the laser? (A) The researchers' notebooks were lost. (B) Several people were developing the idea at the same time. (C) No one claimed credit for the development until recently. (D) The work is still incomplete.

Question 1121 Panel painting, common in thirteenth- and fourteenth-century Europe, involved a painstaking, laborious process. Wooden planks were joined, covered with gesso to prepare the surface for painting, and then polished smooth with special tools. On this perfect surface, the artist would sketch a composition with chalk, refine it with inks, and then begin the deliberate process of applying thin layers of egg tempera paint (egg yolk in which pigments are suspended) with small brushes. The successive layering of these meticulously applied paints produced the final, translucent colors. Backgrounds of gold were made by carefully applying sheets of gold leaf, and then embellishing or decorating the gold leaf by punching it with a metal rod on which a pattern had been embossed. Every step in the process was slow and deliberate. The quick-drying tempera demanded that the artist know exactly where each stroke be placed before the brush met the panel, and it required the use of fine brushes. It was,

therefore , an ideal technique for emphasizing the hard linear edges and pure, fine areas of color that were so much a part of the overall aesthetic of the time. The notion that an artist could or would dash off an idea in a fit of spontaneous inspiration was completely alien to these deliberately produced works. Furthermore, making these paintings was so time-consuming that it demanded assistance. All such work was done by collective enterprise in the workshops. The painter or master who is credited with having created painting may have designed the work and overseen its production, but it is highly unlikely that the artist ' s hand applied every stroke of the brush. More likely, numerous assistants, who had been trained to imitate the artist ' s style, applied the paint. The carpenter ' s shop probably provided the frame and perhaps supplied the panel, and yet another shop supplied the gold. Thus, not only many hands , but also many shops were involved in the final product. In spite of problems with their condition, restoration, and preservation many panel paintings have survived, and today many of them are housed in museum collections. 100Test 下载频道开通 , 各类考试题目直接下载。详细请访问 [www.100test.com](http://www.100test.com)