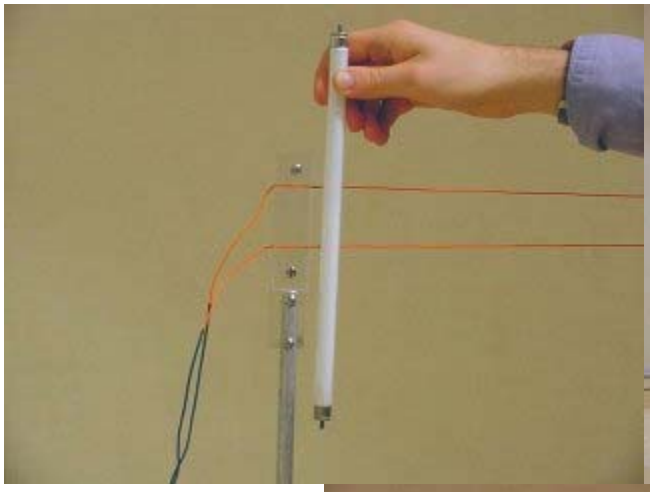
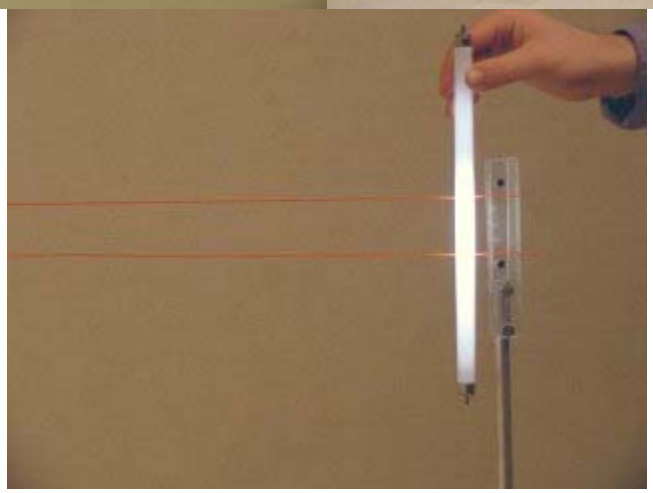
Answer #254

Part 1.

The answer is (d) the light will start off, oscillate in intensity, and end bright. This is seen in the photographs at the left and the right below, and in an mpeg video by clicking your mouse on the center photograph.

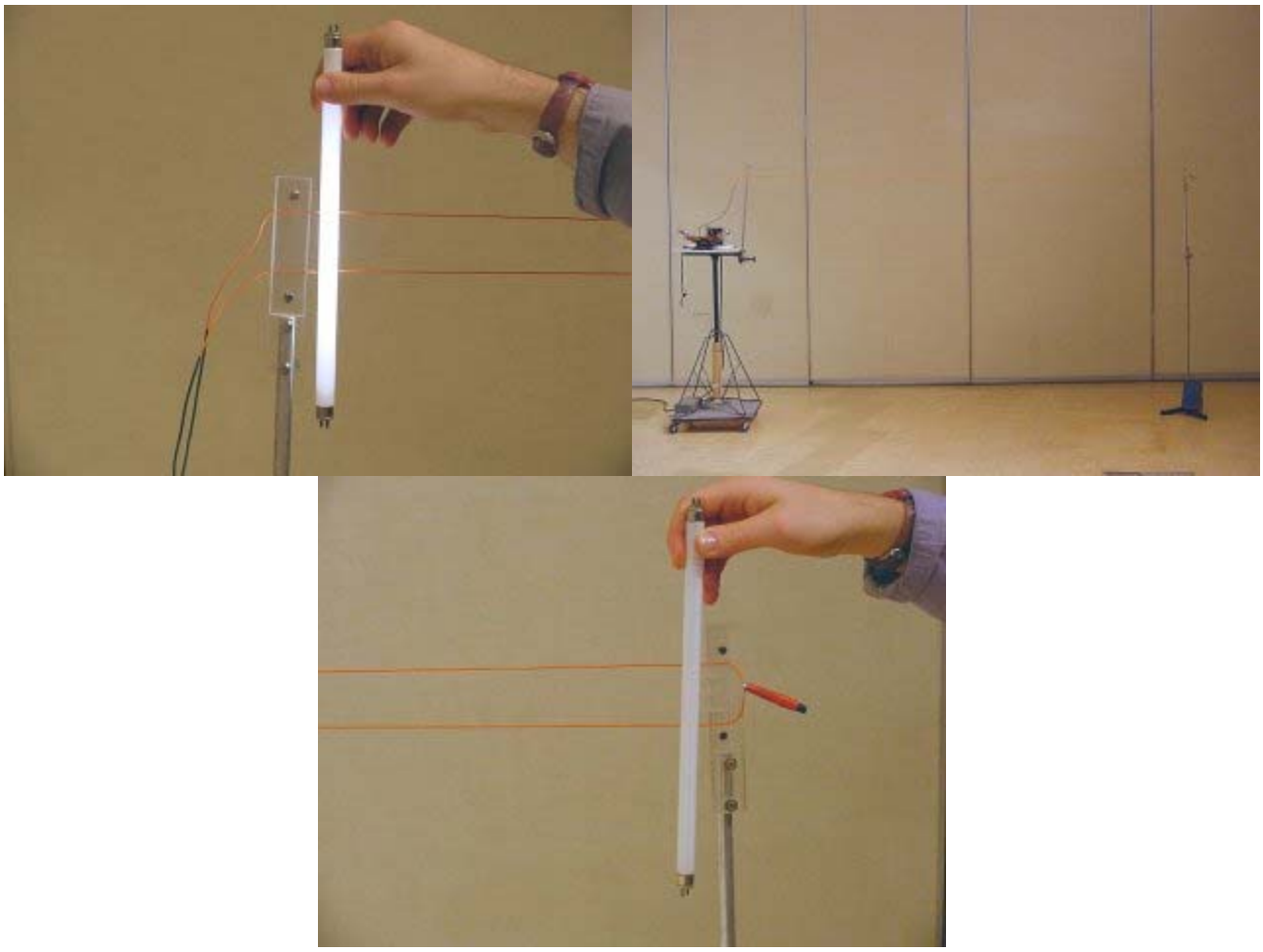




The open end of the antenna forces a voltage antinode at the far end, so that the light will go on at that point. The voltage along the antenna changes as it did in Question 253, forming a standing wave with the same wavelength and loop length. The end by the oscillator must therefore be a node, as seen.

Part 2.

The answer is (c) the light will start bright, oscillate in intensity, and end off. This is seen in the photographs at the left and the right below, and in an mpeg video by clicking your mouse on the center photograph.



The closed end of the antenna forces a voltage node at the far end, so the light will go off at that point. The voltage along the antenna changes as it did in Question 253, forming a standing wave with the same wavelength and loop length. The end by the oscillator must therefore be an antinode, as seen.

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For questions and comments regarding the *Question of the Week* contact Dr. Richard E. Berg by e-mail or using phone number or regular mail address given on the Lecture-Demonstration Home Page.