



Ultrasonic Testing Lecture Guide, Second Edition

Errata – 2rd Printing 3/19

The following text correction pertains to the second edition of the *Ultrasonic Testing Lecture Guide*. Subsequent printings of the document will incorporate the corrections into the published text.

The attached corrected page applies to the first printing. In order to verify the print run of your book, refer to the copyright page. Ebooks are updated as corrections are found.

Page	Correction
54	<p>Questions 10 and 13 should be revised as follows:</p> <p>10. Sensitivity is related to wavelength as follows: a. the longer the wavelength, the higher the sensitivity. e. <u>b.</u> the shorter the wavelength, the lower the sensitivity. d. <u>c.</u> the longer the wavelength, the higher the sensitivity. d. the shorter the wavelength, the higher the sensitivity.</p> <p>13. The length of the near field can be computed using which formula? a. $L = D^2/4V$ b. $L = D^2/4\lambda$ c. $L = D^3/4\lambda$ d. $L = D^2/4\lambda$ <u>$D/4\lambda$</u></p>
174	<p>Questions 10 and 13 should be revised as follows (note: 10-d and 13-b are still the correct answers):</p> <p>10. Sensitivity is related to wavelength as follows: a. the longer the wavelength, the higher the sensitivity. e. <u>b.</u> the shorter the wavelength, the lower the sensitivity. d. <u>c.</u> the longer the wavelength, the higher the sensitivity. d. the shorter the wavelength, the higher the sensitivity.</p> <p>13. The length of the near field can be computed using which formula? a. $L = D^2/4V$ b. $L = D^2/4\lambda$ c. $L = D^3/4\lambda$ d. $L = D^2/4\lambda$ <u>$D/4\lambda$</u></p>

8. Most commercial ultrasonic testing is performed using frequencies between:
 - a. 0.2 and 25 MHz.
 - b. 20 to 60 Hz.
 - c. 60 to 120 Hz.
 - d. 25 MHz and higher.

9. It has been proven that _____ distinct zones are always present within the sonic beam.
 - a. two
 - b. three
 - c. four
 - d. five

10. Sensitivity is related to wavelength as follows:
 - a. the longer the wavelength, the higher the sensitivity.
 - b. the shorter the wavelength, the lower the sensitivity.
 - c. the longer the wavelength, the higher the sensitivity.
 - d. the shorter the wavelength, the higher the sensitivity.

11. The phrase “uneven intensities of the energy wave not related to distance of travel within the material” specifically relates to the physics of the:
 - a. near field.
 - b. the direction of propagation.
 - c. fraunhofer zone.
 - d. pulses farthest from the crystal.

12. The length of the near field is dependent on:
 - a. the velocity of sound in the transducer.
 - b. the diameter of the test object.
 - c. the diameter and frequency of the probe.
 - d. probe contact to the test object.

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14. The peak point exists at the:
 - a. beginning of the fraunhofer zone.
 - b. end of the far field.
 - c. beginning of the near field.
 - d. beginning of the fresnel zone.

15. Beam spread begins at the:
 - a. end of the far field.
 - b. end of the fresnel zone.
 - c. beginning of the near field.
 - d. face of the ceramic element.

16. The degree of beam spread can be computed to a specific:
 - a. length of the test object.
 - b. angle.
 - c. frequency.
 - d. test material.

17. As relating to beam spread, the larger the crystal, the _____ the beam.
 - a. broader
 - b. longer
 - c. tighter or narrower
 - d. shorter

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- 0.2 and 25 MHz.**
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 - 60 to 120 Hz.
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