

Question 1

Which of the below technical specifications describes test objects for temperature measurements in diagnostic ultrasound fields?

- a) IEC 62359 Ed. 2.1 2017/09
- b) IEC TECHNICAL SPECIFICATION 62556
- c) IEC TECHNICAL SPECIFICATION 63070
- d) IEC TECHNICAL SPECIFICATION 62306

Question 1

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- a) IEC 62359 Ed. 2.1 2017/09
- b) IEC TECHNICAL SPECIFICATION 62556
- c) IEC TECHNICAL SPECIFICATION 63070
- d) IEC TECHNICAL SPECIFICATION 62306 – Correct answer**

Question 2

IEC TECHNICAL SPECIFICATION 63070 describes transducer evaluation by:

- a) Infra-red imaging
- b) Thermocouples
- c) Ultrasound power
- d) Peak negative pressure
- e) Pressure

Question 2

IEC TECHNICAL SPECIFICATION 63070 describes transducer evaluation by:

- a) **Infra-red imaging – Correct answer**
- b) Thermocouples
- c) Ultrasound power
- d) Peak negative pressure
- e) Pressure

Question 3

IEC TECHNICAL SPECIFICATION 62556 contains consideration regarding temperature or thermal due to HIFU field:

- a) True
- b) False
- c) Only using infra-red imaging
- d) Only using thermocouples

Question 3

IEC TECHNICAL SPECIFICATION 62556 contains consideration regarding temperature or thermal due to HIFU field:

- a) True
- b) False – Correct answer**
- c) Only using infra-red imaging
- d) Only using thermocouples

Question 4

Which of the below values is the suggested limit of MI for neonatal lung and intestine diagnosis:

- a) 1.0
- b) < 0.3
- c) > 0.7
- d) < 0.8
- e) < 0.9

Question 4

Which of the below values is the suggested limit of MI for neonatal lung and intestine diagnosis:

- a) 1.0
- b) < 0.3 – Correct answer**
- c) > 0.7
- d) < 0.8
- e) < 0.9

Question 5

How many thermal index categories are defined?

- a) 1
- b) 2
- c) 3
- d) 4
- e) 5

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Question 6

What percentage of energy is absorbed in soft tissue, leading to heating?

- a) 60 – 80%
- b) 40 – 60%
- c) 20 – 40%
- d) 5 – 20%

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Question 7

The temperature at the boundary of a lesion is equivalent to:

- a) 55 °C for 10 seconds
- b) 55 °C for 1 second
- c) 65 °C for 10 seconds
- d) 75 °C for 1 second

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Question 8

HIFU uses:

- a) High intensity unfocused beams
- b) Low intensity focused beams
- c) Low intensity unfocused beams
- d) High intensity focused beams

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- a) High intensity unfocused beams
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- c) Low intensity unfocused beams
- d) **High intensity focused beams – Correct answer**

Question 9

A relevant property of the acoustic beam for the simulation is:

- a) Attenuation coefficient
- b) Acoustic impedance
- c) Pulse duration
- d) Specific heat capacity

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Question 10

A hologram is:

- a) A projection of pressure measurements
- b) A 2D scan of pressure measurements
- c) A 3D scan of pressure measurements
- d) An image of the pressure source

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- a) A projection of pressure measurements
- b) A 2D scan of pressure measurements – Correct answer**
- c) A 3D scan of pressure measurements
- d) An image of the pressure source

Explanation: A hologram is a 2D scan of pressure measurements acquired on a plane tranverse to the wave propagation.

Question 11

Which sentence below is true:

- a) The holography technique is a pure numerical simulation method
- b) With the holography technique, only pressure fields in water can be estimated
- c) With the holography technique, a pressure source is reconstructed from a 2D scan of pressure measurements
- d) The holography technique does not need experimental measurements

Question 11

Which sentence below is true:

- a) The holography technique is a pure numerical simulation method
- b) With the holography technique, only pressure fields in water can be estimated
- c) With the holography technique, a pressure source is reconstructed from a 2D scan of pressure measurements – Correct Answer**
- d) The holography technique does not need experimental measurements