

## Acoustics and Electromagnetism Level 3 Quiz

### 1) What is the definition of acoustics?

**Select one:**

- a) The study of light waves
- b) The study of sound waves
- c) The study of water waves
- d) The study of electrical waves

### 2) Which of the following materials is best at absorbing sound?

**Select one:**

- a) Concrete
- b) Glass
- c) Foam
- d) Metal

### 3) What is the range of frequencies that humans can hear?

**Select one:**

- a) 0 Hz to 120 Hz
- b) 10 Hz to 100 kHz
- c) 20 Hz to 20 kHz
- d) 50 Hz to 50 kHz

### 4) Which of the following is a characteristic of a longitudinal wave?

**Select one:**

- a) The particles move perpendicular to the wave direction.
- b) The wave moves through a vacuum.
- c) The particles move parallel to the wave direction.
- d) The wave frequency remains constant regardless of the medium.

### 5) What does the decibel (dB) scale measure?

**Select one:**

- a) Pitch of sound
- b) Loudness of sound
- c) Speed of sound
- d) Temperature of the medium

### 6) Sound waves cannot travel through a vacuum.

**Select one:**

- a) True
- b) False

7) The speed of sound is faster in air than in solids.

Select one:

- a) True
- b) False

8) Ultrasound is used in medical imaging because it has frequencies above 20 kHz.

Select one:

- a) True
- b) False

9) Acoustic metamaterials are engineered to manipulate sound in unique ways.

Select one:

- a) True
- b) False

10) Absorptive materials like foam are used to reduce echoes in a room.

Select one:

- a) True
- b) False