

**Courses » Fundamentals of Acoustics**

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# Unit 7 - Week 06: Power and spherical waves

## Course outline

How to access the portal?

**Week 01: Introduction and Terminology**

**Week 02: Concept Review**

**Week 03: Wave equation**

**Week 04: Transmission line equations**

**Week 05: 1-D Waves**

**Week 06: Power and spherical waves**

Lesson 1: Specific Acoustic Impedance

## Week 6 Assignment

The due date for submitting this assignment has passed.

**Due on 2017-03-09, 23:59 IST.**

### Submitted assignment

1) Specific acoustic impedance for a sound wave propagation in 1-D depends upon \_\_\_\_\_. **1 point**

- Medium of wave propagation.
- Boundary conditions of wave propagation
- Both a and b.
- None of the above.

2) Characteristic acoustic impedance for a sound wave propagation in 1-D depends upon \_\_\_\_\_. **1 point**

- Medium of wave propagation
- Boundary conditions of wave propagation
- Both a and b
- None of the above

3) Specific acoustic impedance is the ratio of \_\_\_\_\_. **1 point**

- Complex velocity to Complex pressure .
- Complex pressure to Complex velocity .
- Velocity to pressure .
- Pressure to velocity .

4) The term reflection coefficient (R) is defined as the ratio of \_\_\_\_\_. (Where P+ and P- are the pressures of forward and backward travelling wave respectively. ) **1 point**

- $P+/P-$
- $P-/P+$
- $P+ + P-$

for a Closed Tube

- Lesson 2: Specific Acoustic Impedance for an Open Tube and an Infinitely Long Tube
- Lesson 3: Specific Acoustic Impedance for a Tube with Imperfect Termination
- Lesson 4: Kundt's Tube
- Lesson 5: Volume Velocity
- Lesson 6: Comparison of Impedances for a Radially Propagating Wave and a Planar Wave

○ Quiz : Week 6 Assignment

● Week 6 Assignment Solution

**Week 07:  
Spherical waves and interference**

**Week 08:  
Directivity and mufflers**

**Week 09:  
Sound in rooms**

**Week 10:**

○ P+ - P-

5) Which of the following instruments can be used for characterizing acoustic properties of a material? **1 point**

- Kundt's tube.
- Microphone.
- Acoustic Analyzer.
- Hydrophone.

6) The definition of standing wave ratio ( $\rho$ ) is: **1 point**

- $\rho = (\text{minimum pressure amplitude}) / (\text{maximum pressure amplitude})$
- $\rho = (\text{maximum pressure amplitude}) / (\text{minimum pressure amplitude})$
- $\rho = (2 \times \text{minimum pressure amplitude}) / (\text{maximum pressure amplitude})$
- $\rho = (\text{minimum pressure amplitude}) / (2 \times \text{maximum pressure amplitude})$

7) Kundt's tube experiment is also known as \_\_\_\_\_. **1 point**

- Travelling microphone method.
- Fixed microphone method.
- Intermittent motion microphone method .
- none of the above.

8) Sound wave through closed 1-D tube is a \_\_\_\_\_. **1 point**

- Standing wave.
- Travelling wave .
- Both.
- None of above.

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**Reverb time  
and FFT**


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**Week 11:  
Weighting  
and loudness**

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**Week 12:  
Miscellaneous  
topics and  
closure**

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