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Unit 9 - Week 08: Directivity and mufflers

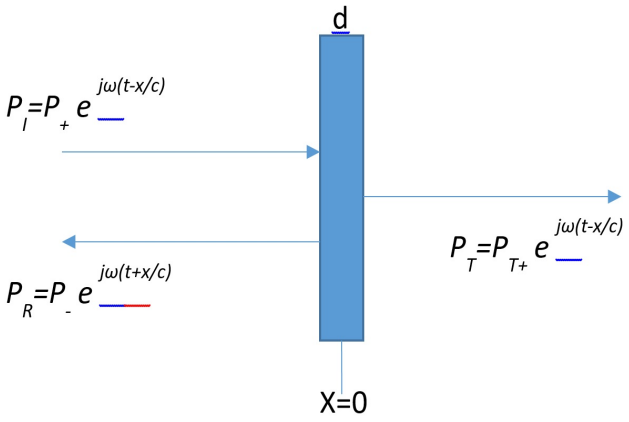
Week 8 assignment

The due date for submitting this assignment has passed.

Due on 2017-03-21, 23:59 IST.

Submitted assignment

1) The reflected (PR) and transmitted (PT) waves produced due to normal incident (PI) of sound wave on an infinitely deep barrier, are shown in figure below. The thickness of barrier is d and wavelength of incident wave inside the wall material is λ. If d = λ/400 then the phase difference of incident (PI) and transmitted (PT) waves will be: ***1 point***



- 0.005 π radians
- 0.05 π radians
- 0.5 π radians
- 5 π radians

2) Sound pressure level heard by a listener when there is a wall between a source and the listener is 76 dB. If the wall attenuates sound by 10 dB, what is the actual sound level produced by the source? ***1 point***

- 43 dB
- 66 dB
- 86 dB
- 76 dB

3) For an incident sound wave on a 20 mm thick wall, the sound transmission loss at extremely low frequencies _____ with increasing the mass of wall. ***1 point***

- Increases
- Decreases
- Does not change
- None of the options are correct

4) Sound transmission through a wall barrier depends upon_____. ***1 point***

- Mass of the wall barrier
- Characteristics impedance of media of propagation
- Frequency of incident sound
- All of the above

5) In _____ mufflers, sound is attenuated only by reflection and cancellation of sound waves. ***1 point***

- Reactive
- Absorptive
- Combination of reactive and absorptive
- None of the options are correct.

6) For a 1-D planar sound wave propagation through three media _____ at the interface of boundaries. ***1 point***

- Pressure continuous and velocity non-continuous
- Pressure and velocity both continuous
- Pressure and velocity both non-continuous
- Pressure non-continuous and velocity continuous

7) For a 2-media sound propagation, if the characteristic impedances of incident and transmitted media matches with each other then transmission loss will be _____. ***1 point***

- zero
- infinite
- Insufficient information
- None of the options are correct

8) Transducers used for sound generation in submarines have a coating of _____ on their radiating surface to improve transmission properties. ***1 point***

- Butyl rubber
- Synthetic rubber
- Nitrile rubber
- Rho-C rubber

Week 12: Miscellaneous topics and closure

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