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NPTEL

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Courses » Energy Efficiency, Acoustics and daylighting in Building

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Unit 9 - Fundamentals of Acoustics and Noise

Register for Certification exam

Course outline

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Assignment 8

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2019-03-27, 23:59 IST.

Questions 1 and 2 are linked
Questions 6, 7 and 8 are linked

1) The sound intensity level measured at a point is 80 dB ; what is the corresponding sound intensity at that point (in $\mu W/m^2$)?

Hint

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 99.9,100.1

2 points

2) From the information in question 1, determine the root mean square (rms) pressure (in Pa) corresponding to the given sound level? Assume density of air to be 1.2 kg/m^3 and the velocity of sound in air as 340 m/s.

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 0.198,0.206

2 points

3) The ratio of acoustic impedance offered to sound waves by gold to that by brass is

Accepted Answers:
(Type: Range) 1.30,1.34

2 points

4) Calculate the frequency (in Hz) of sound waves in air, given their wave number is 92.4 m^{-1}. Assume that the velocity of sound waves in air is 340 m/s.

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 4950,5050

2 points

5) What is the directivity index of a source located at the corner of a room?

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 9.00,9.05

2 points

6) In a seminar hall, the first and the last row of students sit respectively at distances of 3m and 30m from the speaker (sound source). The directivity factor of source is 2. The sound pressure level (SPL) heard by students in the first row is 60 dB. Determine the power level (in dB) of the source (speaker). Neglect the attenuation due to air. ***4 points***

- 90.25
- 85.92
- 77.53
- 81.24

No, the answer is incorrect.
Score: 0

Accepted Answers:
77.53

7) Using the information given in question 6, what is the SPL (in dB) heard by students sitting in the last row? Neglect the attenuation due to air. ***3 points***

- 45
- 40
- 35
- 50

No, the answer is incorrect.
Score: 0

Accepted Answers:
40

8) If the relative humidity inside the hall is 50%. Determine the attenuation in sound level (in dB) at the last row due to air. Given, the predominant sound frequency is 5000 Hz. Use the information given in question 6, when needed. ***3 points***

- 11.1
- 5.56
- 1.11
- 0.56

No, the answer is incorrect.
Score: 0

Accepted Answers:
1.11

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