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NPTEL

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Courses » Energy Efficiency, Acoustics and daylighting in Building

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## Unit 10 - Sound Transmission

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### Course outline

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● mod09lec35

● mod09lec36

## Assignment 9

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-04-03, 23:59 IST.**

Questions 3 to 6 are linked to data given in question 3

Questions 7 to 9 are linked to data given in question 7

In multiple choice questions please choose the closest option in case of making approximations in rounding off etc.,

1) Distance from the source at which direct and reverberant field intensities are same is called ..... **2 points**

- Room Constant
- Room Radius
- Reverberation time
- Mean free path

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Room Radius*

2) Total energy density at any point in a closed room corresponds to ..... **2 points**

- Direct sound energy density
- Reverberant field energy density
- Sum of direct and reverberant field energy densities
- Product of direct and reverberant field energy densities

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

*Sum of direct and reverberant field energy densities*

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Quiz :  
Assignment 9

Solutions of  
Assignment 9

Noise Control

Fundamentals of  
Daylighting

Daylighting  
Design

Interaction  
Session

85.68

75.23

65.48

55.45

No, the answer is incorrect.

Score: 0

Accepted Answers:

65.48

4) A barrier wall of height 6m is proposed at a distance of 10m from the source center. What is the path difference (in m) (diffracted path – directly transmitted path) between the source and the receiver? **2 points**

0.11

0.22

0.44

0.66

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.66

5) What is the value of Fresnel's number corresponding to the above path difference? **2 points**

0.07

0.13

0.27

0.40

No, the answer is incorrect.

Score: 0

Accepted Answers:

0.40

6) Determine the sound pressure level (in dB) experienced by the observer (introduced in question 3) in the presence of barrier. **3 points**

55.73

65.48

75.45

86.1

No, the answer is incorrect.

Score: 0

Accepted Answers:

55.73

7) A semi reverberant room of dimension  $12 \times 8 \times 3.5 \text{ m}^3$  (L x B x H) is used as class room and it is given that average sound absorptivity of the any surface is 0.21. Assume velocity of sound in air as 330 m/s.

What is the total surface area of the room (in  $\text{m}^2$ )?

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 330,334

2 points

8) Determine the reverberation time (in s) calculated from Sabine's formula?



No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 0.75,0.79

2 points

9) Determine the reverberation time (in s) calculated from Eyring's formula?



No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Range) 0.67,0.725

2 points

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