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NPTEL

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Courses » Energy Efficiency, Acoustics and daylighting in Building

Announcements **Course** Ask a Question Progress FAQ

## Unit 1 - How to access the portal

Register for  
Certification exam

### Course outline

#### How to access the portal

- How to access the home page?
- How to access the course page?
- How to access the MCQ, MSQ and Programming assignments?
- Quiz : ASSIGNMENT 0

#### Introduction

#### Environmental factors and climatic zones

#### Heat Transfer Concepts in Buildings

#### Heat Transfer Concepts in Buildings - 2

#### Thermal Comfort

## ASSIGNMENT 0

The due date for submitting this assignment has passed.

As per our records you have not submitted this assignment. **Due on 2019-01-27, 23:59 IST.**

This is a small assignment for revision of some basic mathematical concepts that will be useful in the course

Here are a few questions to brush up your mathematical skills before the course.

1)  $e^{in\theta} = \dots\dots\dots$

**1 point**

- $\cos n\theta + i \sin n\theta$
- $\cos n\theta - i \sin n\theta$
- $\cos \theta + i \sin \theta$
- $\sin \theta + i \cos \theta$

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

$\cos n\theta + i \sin n\theta$

2) Let  $f(x)$  be a periodic function with a period  $2\pi$  then it can be represented by a trigonometric series by the formula given as: **1 point**

- $a_0 + \sum_{n=1}^{\infty} (a_n \cos(nx) - b_n \sin(nx))$
- $a_0 + \sum_{n=1}^{2\pi} (a_n \cos(nx) + b_n \sin(nx))$
- $a_0 + \sum_{n=1}^{\infty} (a_n \cos(nx) + b_n \sin(nx))$

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3) Let  $f(t)=1$  when  $t>0$  then the Laplace transform of  $f(t)$  is given as:

1 point

- $1/s$
- $1$
- $0$
- $s$

No, the answer is incorrect.

Score: 0

Accepted Answers:

 $1/s$ 4)  $\frac{i}{1-i}$ 

1 point

express the above in terms of a complex number  $a+bi$  :

- $\frac{1}{2} - \frac{i}{2}$
- $-\frac{1}{2} + \frac{i}{2}$
- $\frac{1}{2} + \frac{i}{2}$
- $-\frac{1}{2} - \frac{i}{2}$

No, the answer is incorrect.

Score: 0

Accepted Answers:

 $-\frac{1}{2} + \frac{i}{2}$ 5)  $\begin{bmatrix} 1 & -4 \\ 1 & -5 \end{bmatrix}$ 

1 point

the inverse of matrix given above is:

- $\begin{bmatrix} 5 & -4 \\ 1 & -1 \end{bmatrix}$
- $\begin{bmatrix} 1 & -4 \\ 1 & -5 \end{bmatrix}$
- $\begin{bmatrix} -5 & -4 \\ 1 & 1 \end{bmatrix}$
- $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

No, the answer is incorrect.

Score: 0

Accepted Answers:

 $\begin{bmatrix} 5 & -4 \\ 1 & -1 \end{bmatrix}$ 6) if  $a, b$  and  $c$  are three vectors then which of the following are true:

1 point

$$a \cdot (b \times c) = (a \cdot b) \times c$$

$$a. (b \times c) = (a \times b).c$$

$$a \times (b \times c) = (a \times b) \times c$$

$$a \times (b \times c) \neq (a \times b) \times c$$

**No, the answer is incorrect.**

**Score: 0**

**Accepted Answers:**

$$a. (b \times c) = (a \times b).c$$

$$a \times (b \times c) \neq (a \times b) \times c$$

You were allowed to submit this assignment only once.

Previous Page

End