

Department of Electrical and Computer Engineering

ECE 360 Knowledge Probe

This quiz is for assessment purposes only and will not be counted towards your grade in this class.
(Prerequisites to this class are: Phys. 161, Math 264, and ECE 213)

NAME: _____

BANNER ID _____

Do not write below this line.

- 1. /10
- 2. /10
- 3. /10
- 4. /10
- 5. /10
- 6. /10
- 7. /10
- 8. /10
- 9. /10
- 10. /10

Total Grade: 40 /100

Student 1

Probe 5 [Math 264]

$\iiint \nabla \cdot \vec{F} \, dV = \iint \vec{F} \cdot d\vec{S}$ with $d\vec{S} = \vec{a}_n \, dS$ is a statement of the divergence theorem.

- a. True
 b. False
 c. I have never seen this

Probe 6 [Math 264]

Given two vectors: $\vec{A} = \sqrt{3}\vec{a}_x + \vec{a}_y$ and $\vec{B} = 2\vec{a}_x$, find the angle between them.

- a. 30°
 b. 60°
 c. 90°
 d. 0°
 e. I do not know

Probe 7 [Math 264]

Find the gradient of the scalar field given by $f(x, y, z) = axz + bx^3y$

- a. $(az + 3bx^2y)\vec{a}_x + bx^3\vec{a}_y + ax\vec{a}_z$
 b. $az\vec{a}_x + bx^3\vec{a}_y$
 c. $az + bx^3$
 d. 0
 e. I do not know.

$$az + 3x^2by$$

Probe 8 [ECE 213]

What is the advantage of using the Laplace Transform in solving for the transient response of a circuit?

FREQ DOMAIN GIVES STEADY STATE OF CIRCUIT

Probe 9 [ECE 213]

The complete response to an RLC circuit is the sum of the forced response and the natural response.

- a. True
 b. False
 c. I have never seen this

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- 1. _____/10
- 2. _____/10
- 3. _____/10
- 4. _____/10
- 5. 6 /10
- 6. 0 /10
- 7. _____/10
- 8. _____/10
- 9. _____/10
- 10. 0 /10

1 e

Total Grade: 70/100

Student 2

Probe 5 [Math 264]

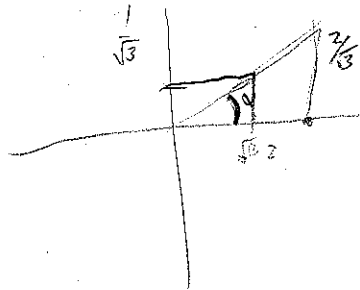
$\iiint \nabla \cdot \vec{F} \, dV = \iint \vec{F} \cdot d\vec{S}$ with $d\vec{S} = \vec{a}_n \, dS$ is a statement of the divergence theorem.

- C
- a. True
 - b. False
 - c. I have never seen this

Probe 6 [Math 264]

Given two vectors: $\vec{A} = \sqrt{3}\vec{a}_x + \vec{a}_y$, and $\vec{B} = 2\vec{a}_x$, find the angle between them.

- B
- a. 30°
 - b. 60°
 - c. 90°
 - d. 0°
 - e. I do not know



$\sin \alpha = \frac{1}{2}$
 $\sin \alpha = \frac{1}{2}$

Probe 7 [Math 264]

Find the gradient of the scalar field given by $f(x, y, z) = axz + bx^3y$

- A
- a. $(az + 3bx^2y)\vec{a}_x + bx^3\vec{a}_y + ax\vec{a}_z$
 - b. $az\vec{a}_x + bx^3\vec{a}_y$
 - c. $az + bx^3$
 - d. 0
 - e. I do not know.

Probe 8 [ECE 213]

What is the advantage of using the Laplace Transform in solving for the transient response of a circuit? *The equation becomes algebraic instead of differential*

Probe 9 [ECE 213]

The complete response to an RLC circuit is the sum of the forced response and the natural response.

- A
- a. True
 - b. False
 - c. I have never seen this

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NAME: _____

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- 1. _____/10
- 2. _____/10
- 3. _____/10
- 4. _____/10
- 5. _____/10
- 6. _____/10
- 7. _____/10
- 8. _____/10
- 9. _____/10
- 10. _____/10

Total Grade: 100/100

Student 3

Probe 5 [Math 264]

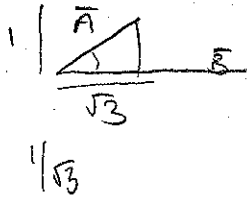
$\iiint \nabla \cdot \vec{F} \, dV = \iint \vec{F} \cdot d\vec{S}$ with $d\vec{S} = \vec{a}_n \, dS$ is a statement of the divergence theorem.

- a. True
 b. False
 c. I have never seen this

Probe 6 [Math 264]

Given two vectors: $\vec{A} = \sqrt{3}\vec{a}_x + \vec{a}_y$ and $\vec{B} = 2\vec{a}_x$, find the angle between them.

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 d. 0°
 e. I do not know



Probe 7 [Math 264]

Find the gradient of the scalar field given by $f(x, y, z) = axz + bx^3y$

- a. $(az + 3bx^2y)\vec{a}_x + bx^3\vec{a}_y + ax\vec{a}_z$
 b. $az\vec{a}_x + bx^3\vec{a}_y$
 c. $az + bx^3$
 d. 0
 e. I do not know.

Probe 8 [ECE 213]

What is the advantage of using the Laplace Transform in solving for the transient response of a circuit?

no need to solve a differential equation

Probe 9 [ECE 213]

The complete response to an *RLC* circuit is the sum of the forced response and the natural response.

- a. True
 b. False
 c. I have never seen this