Answer Submitted.
X

Week 0 : Assignment 0

Assignment not submitted

1) **2 points**

Suppose A is a 5×3 matrix, B is an $r \times s$ matrix and C is a 4×3 matrix. If $A^T * B * C$ is defined, which of the following is true?

a. $r = 5, s = 4$
b. $r = 3, s = 5$
c. $r = 3, s = 4$
d. $r = 4, s = 3$

- (●) a.
- ( ) b.
- ( ) c.
- ( ) d.

Yes, the answer is correct.
Score: 2

Accepted Answers:
a.

2) **2 points**

Which of the following is/are true for an idempotent matrix?

a. $A = A^{-1}$.
b. $A = A^T$
c. $A^2 = A$
d. None of the above mentioned.

a.
b.
c.
d.

Yes, the answer is correct.
Score: 2

Accepted Answers:
c.

3) **2 points**

What is the definition of the delta function $\{\delta(t)\}$ in time?

a. $\delta(t) = \begin{cases} 1, & t = 0 \\ -1, & t \neq 0 \end{cases}$

b. $\delta(t) = \begin{cases} +\infty, & t = 0 \\ 1, & t \neq 0 \end{cases}$

c. $\delta(t) = \begin{cases} +\infty, & t = 0 \\ 0, & t \neq 0 \end{cases}$

d. None of these

a.
b.
c.
d.

Yes, the answer is correct.
Score: 2

Accepted Answers:
c.

4) **2 points**

Let **u**, **v**, **w** be three non-zero vectors which are linearly dependent, then

a. **u** is linear combination of **v** and **w**
b. **v** is linear combination of **u** and **w**
c. **w** is linear combination of **u** and **v**
d. All of the above

a.
b.
c.
d.

Yes, the answer is correct.
Score: 2

Accepted Answers:
d.

5) **2 points**

Consider the system

$3x + ky = 3$
$3x + 2y = 5$

The system will have no solution when k is

a. $k = 2$
b. $k = 1$
c. $k \neq 1$
d. $k \neq 3$

- (●) a.
- ( ) b.
- ( ) c.
- ( ) d.

Yes, the answer is correct.
Score: 2
Accepted Answers:
a.

6) ***2 points***

Given that 3 is an eigenvalue of $A = \begin{bmatrix} 3 & 0 & 0 \\ 0 & 4 & 5 \\ 0 & 4 & 3 \end{bmatrix}$, find the other two eigenvalues?

a. 2 and 8
b. 2 and -1
c. 5 and 6
d. 8 and -1

- ( ) a.
- ( ) b.
- ( ) c.
- (●) d.

Yes, the answer is correct.
Score: 2
Accepted Answers:
d.

7) ***2 points***

Which of the following is/are true for a symmetric matrix?

a. $A = A^{-1}$.
b. $A = A^T$
c. $A^{-1} = A^T$
d. None of the above mentioned.

- a.
- b.
- c.
- d.

Yes, the answer is correct.
Score: 2

Accepted Answers:
b.

8) **2 points**

If $A = \begin{bmatrix} 1 & 1 \\ 1 & -1 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$ then matrix multiplication A*B = _____.

a. $\begin{bmatrix} 5 & 7 & 9 \\ 3 & 3 & 3 \end{bmatrix}$

b. $\begin{bmatrix} 5 & 7 & 9 \\ -3 & -3 & -3 \end{bmatrix}$

c. Not defined.

d. None of the above mentioned.

- a.
- b.
- c.
- d.

Yes, the answer is correct.
Score: 2

Accepted Answers:
b.

9) **2 points**

How is the continuous time impulse function defined in terms of the step function?

a. $\delta(t) = \int u(t)dt$

b. $\delta(t) = |u(t)|$

c. $\delta(t) = \frac{d(u(t))}{dt}$

d. None of these

- a.
- b.
- c.
- d.

Yes, the answer is correct.
Score: 2

Accepted Answers:
c.

10) Which of the following is correct? ***2 points***

a. $\int_{-\infty}^{+\infty} \delta(t)dt = \infty$

b. $\int_{-\infty}^{+\infty} \delta(t)dt = 0$

c. $\int_{-\infty}^{+\infty} \delta(t)dt = 1$

d. None of these

- a.
- b.
- c.
- d.

Yes, the answer is correct.
Score: 2

Accepted Answers:
c.

Check Answers and Submit

Your score is: 20/20