

Answer Submitted.

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**NPTEL** (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » **Pattern Recognition And Application**  
(course)



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Course  
outline

How does an  
NPTEL  
online  
course  
work? ()

Week 0 ()

☐ Practice:  
Week 0 :  
Assignment 0  
(assessment?name=107

Week 1 ()

☐ Lecture 01 :

## Week 0 : Assignment 0

Assignment not submitted

1)

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

**2 points**

- 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)

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

**2 points**

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



Introduction  
(unit?unit=17&  
lesson=18)

☐ Lecture 02 :  
Feature  
Extraction - I  
(unit?unit=17&  
lesson=19)

☐ Lecture 03 :  
Feature  
Extraction - II  
(unit?unit=17&  
lesson=20)

☐ Quiz: Week 1 :  
Assignment 1  
(assessment?name=103)

- ☐ 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  $\mathbf{u}$ ,  $\mathbf{v}$ ,  $\mathbf{w}$  be three non-zero vectors which are linearly dependent, then

- a.  $\mathbf{u}$  is linear combination of  $\mathbf{v}$  and  $\mathbf{w}$   
b.  $\mathbf{v}$  is linear combination of  $\mathbf{u}$  and  $\mathbf{w}$   
c.  $\mathbf{w}$  is linear combination of  $\mathbf{u}$  and  $\mathbf{v}$   
d. All of the above

- ☐ a.  
☐ b.  
☐ c.  
☒ d.

Yes, the answer is correct.  
Score: 2

Accepted Answers:  
d.

5)



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

