

PASSAGE

$$\text{If } u = \sin^{-1}\left(\frac{x}{y}\right) + \tan^{-1}\left(\frac{y}{x}\right)$$

Read the following Statement and Choose the correct option.

$$\text{Then } x \frac{\partial u}{\partial x} + y \frac{\partial u}{\partial y}$$

- a)  $\frac{x}{\sqrt{y^2 - x^2}} - \frac{xy}{x^2 + y^2}$
- b)  $\frac{1}{\sqrt{y^2 - x^2}} - \frac{y}{x^2 + y^2}$
- c) 0
- d) -1

SKIP

SUBMIT ANSWER

Choose the correct option

Value of  $\int_0^a \int_0^{\sqrt{x}} 1 dx dy$  is equal to

- a) 6      b) 4      c) 10      d) None of these

D  $\rightarrow a\sqrt{a}$

Choose the correct option

$$\int_0^2 \int_0^{\sqrt{2}x} xy dy dx$$

a) 4

b)  $\frac{8}{3}$

c)  $\frac{5}{4}$

(d) None of

OPTIONS

a

c

d

b

A

PASSAGE

$$U = \sin^{-1}\left(\frac{x}{y}\right) + \tan^{-1}\left(\frac{y}{x}\right)$$

B

Read the following Statement and Choose the correct option.

Degree of the given function is

OPTIONS

1

0

-1

2

SKIP

SUBMIT ANSWER



Shot on OnePlus

By Aditya



PASSAGE

Taylor's expansion of  $\tan^{-1} \frac{y}{x}$  about  $(1, 1)$ .

A

Read the following Statement and Choose the correct option. (1 Marks)

Value of  $f_{yy}$  is

a)  $-1/2$

b) 1

c)  $1/2$

d) -1

OPTIONS

a)

b)

c)

d)

SKIP

SUBMIT ANSWER



Shot on OnePlus  
By Aditya

ASUS VivoBook

QUESTION

$$z = \sin^{-1}\left(\frac{x}{y}\right) + \tan^{-1}\left(\frac{y}{x}\right)$$

Read the following Statement and Choose the correct option:

Then  $y \frac{\partial z}{\partial y}$

a)  $-\frac{x}{\sqrt{y^2 - x^2}} + \frac{xy}{x^2 + y^2}$

b)  $\frac{1}{\sqrt{y^2 - x^2}} - \frac{y}{x^2 + y^2}$

c) 0

d) -1

SKIP

SUBMIT ANSWER



Shot on OnePlus  
By Aditya

ASUS VivoBook



## PASSAGE

Taylor's expansion of  $\tan^{-1} \frac{y}{x}$  about  $(1, 1)$ .

Read the following Statement and Choose the correct option. (1 Marks)

Value of  $f_{xy}$  is given as

a) 1

b) 2

c) 0

d) -1

## OPTIONS

a)

b)

c)

d)

SKIP

SUBMIT ANSWER



Shot on OnePlus

By Aditya

PASSAGE

Taylor's expansion of  $\tan^{-1} \frac{x}{x}$  about  $(1, 1)$ .

Read the following Statement and Choose the correct option. (1 Marks)

Value of  $f_{xx}$  is given as

a) 1

b) 2

c)  $\frac{1}{2}$

d) -1

OPTIONS

a)

b)

c)

d)

SKIP

SUBMIT ANSWER



Shot on OnePlus

By Aditya



PASSAGE

Taylor's expansion of  $\tan^{-1} \frac{x}{x}$  about  $(1, 1)$ .

B

Read the following Statement and Choose the correct option. (1 Marks)

Value of  $f_4$  is

a)  $\frac{1}{2}$

b)  $-\frac{1}{2}$

c) 1

d) -1

OPTIONS

a)

b)

c)

d)

SKIP

SUBMIT ANSWER



Shot on OnePlus  
By Aditya

PASSAGE

$$\text{If } u = \sin^{-1}\left(\frac{x}{y}\right) + \tan^{-1}\left(\frac{y}{x}\right)$$

A

Read the following Statement and Choose the correct option.

Then  $x \frac{\partial u}{\partial x}$

a)  $\frac{x}{\sqrt{y^2 - x^2}} - \frac{xy}{x^2 + y^2}$

b)  $\frac{1}{\sqrt{y^2 - x^2}} - \frac{y}{x^2 + y^2}$

c) 0

d) -1

SKIP

SUBMIT ANSWER



Shot on OnePlus  
by Aditya

Choose the correct option

Value of  $\int_0^1 \int_0^{\sqrt{1-x^2}} \int_0^{\sqrt{1-x^2-y^2}} xyz \, dz dy dx$  is equal to

a)  $\frac{1}{48}$

b)  $\frac{2}{48}$

c)  $\frac{1}{49}$

d) None of these

A

OPTIONS

b

a

d

c

PASSAGE

Taylor's expansion of  $\tan^{-1} \frac{2}{x}$  about  $(1, 1)$ .

8

Read the following Statement and Choose the correct option. (1 Marks)

Value of  $f_x$  is

a)  $\frac{1}{2}$

b)  $-\frac{1}{2}$

c) 1

d) -1

OPTIONS

a)

b)

c)

d)

SKIP

SUBMIT ANSWER



Shot on OnePlus  
By Aditya

PASSAGE

$$If u = \sin^{-1}\left(\frac{x}{y}\right) + \tan^{-1}\left(\frac{y}{x}\right)$$

A

Read the following Statement and Choose the correct option.

Euler Theorem is applicable for which kind of functions?

OPTIONS

Homogeneous functions

Non-homogeneous

None of the mentioned

SKIP

Type here to search





PASSAGE

STATEMENT : If  $u = \tan^{-1} \frac{x^3 + y^3}{x + y}$

Read the following Statement and Choose the correct option. (1 Mark)

1)  $\tan u$  is homogeneous function of degree

1) 1

2) 2

3) -1

4) -2

OPTIONS

1)

2)

3)

Type here to search





Change the order of integration  $\int_0^{4a} \int_{x^2/4a}^{2\sqrt{ax}} dy dx$  is

a)  $\int_0^{4a} \int_{x^2/4a}^{2\sqrt{ax}} dy dx$

b)  $\int_0^{2a} \int_{x^2/4a}^{2\sqrt{ax}} dy dx$

c)  $\int_0^{4a} \int_{x^2/4a}^{2\sqrt{ax}} dx dy$

d)  $\int_0^{4a} \int_{y^2/4a}^{2\sqrt{ay}} dx dy$



Choose the correct option

Degree of the homogeneous function  $u = ax^2 + 2hxy + by^2$  is ...

- (a) 1      (b) 2      (c) 3      (d) 4

OPTIONS

a

b

c

d

2

SKIP

Type here to search





PASSAGE

Consider the Group  $G = \{1, \omega, \omega^2\}$  Where  $\omega$  is the cube root of unity, if  $*$  denotes the multiplication operation, the structure  $(G, *)$

B

Read the following Statement and Choose the correct option. (1 Marks)

Is it a Cyclic Group under the multiplication operation?

OPTIONS

No

Yes

Can not be a Cyclic group



### PASSAGE

Consider the Group  $G = \{1, \omega, \omega^2\}$  Where  $\omega$  is the cube root of unity, If  $\cdot$  denotes the multiplication operation, the structure  $(G, \cdot)$

Read the following Statement and Choose the correct option. [1]

Inverse of  $\omega$  is

### OPTIONS

1

$\omega$

$\omega^2$

None

C





PASSAGE

Consider  $(Q, *)$  is set of rational numbers excluding 1 and  $*$  is defined as  $a*b = a + b - ab$ , for all  $a, b$  belongs  $Q$

B

Read the following Statement and Choose the correct option. (1 Marks)

Inverse element of 3 is

OPTIONS

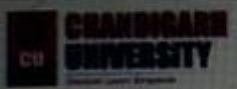
1

3/2

0

-3/2

GO



PASSAGE

Consider the Group  $G = \{1, \omega, \omega^2\}$  Where  $\omega$  is the cube root of unity, If  $*$  denotes the multiplication operation, the structure  $(G, *)$

A

Read the following Statement and Choose the correct option. (1 Marks)

Inverse of  $\omega^2$  is

OPTIONS

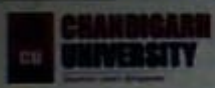
$\omega$

1

$\omega^2$

None





PASSAGE

Consider  $(Q, *)$  is set of rational numbers excluding 1 and  $*$  is defined as  $a*b=a+b-ab$ , for all  $a, b$  belongs  $Q$

A

Read the following Statement and Choose the correct option. (1 Marks)

Inverse element of 4 is

OPTIONS

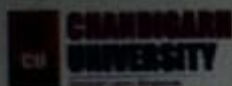
4/3

4/5

5/4

3/4

100%



### PASSAGE

Consider the Group  $G = \{1, \omega, \omega^2\}$  Where  $\omega$  is the cube root of unity, If  $*$  denotes the multiplication operation, the structure  $(G, *)$

A

Read the following Statement and Choose the correct option. (1)

What is its Identity Element?

### OPTIONS

1

$\omega$

$\omega^2$

None



PASSAGE

Suppose  $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$ , then



Read the following Statement and Choose the correct option. (1 Marks)

The Value of constant "a" is

OPTIONS

1

0

0.75

0.5

None of mentioned





PASSAGE

Suppose  $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$ , then

C

Read the following Statement and Choose the correct option. (1 Marks)

The Value of constant " b " is

OPTIONS

0

infinity

-0.5

1

None of mentioned



PASSAGE

Suppose  $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$ , then

C

Read the following Statement and Choose the correct option. (1 Marks)

The Value of constant " b " is

OPTIONS

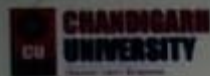
0

infinity

-0.5

1

None of mentioned



#### PASSAGE

Suppose  $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$ , then

Read the following Statement and Choose the correct option. (1 Marks)

Which is true?

#### OPTIONS

Both are positive integers

Both are negative integers

One positive and One Negative integer

Both are imaginary number

None of mentioned

e



Choose the correct option.

$$\lim_{x \rightarrow 0} \left(1 + \frac{1}{x}\right)^x$$

OPTIONS

0

1

2

none of the mentioned

SKIP

Choose the correct option.

$$\lim_{x \rightarrow 0} \sin x \log(x^2)$$

OPTIONS

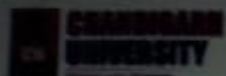
2

1

-1

0

SKIP



## PASSAGE

Suppose  $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$ , then

B

Read the following Statement and Choose the correct option. (1 Marks)

Direct substitution gives the limit of denominator, as  $x$  tends to zero

## OPTIONS

infinity

0

1

2

None of mentioned

SKIP



Choose the correct option.

$$\lim_{x \rightarrow 0} \left(1 + \frac{1}{x}\right)^x$$

OPTIONS

0

1

2

none of the mentioned

SKIP

Choose the correct option.

$$\lim_{x \rightarrow 0} \sin x \log(x^2)$$

OPTIONS

2

1

-1

0

SKIP



Choose the correct option.

$$\lim_{x \rightarrow 0} \left( \frac{\tan x}{x} \right)^{\frac{1}{x}}$$

OPTIONS

1

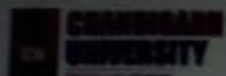
0

-1

none of the mentioned

Skip





## PASSAGE

Suppose  $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$ , then

B

Read the following Statement and Choose the correct option. (1 Marks)

Direct substitution gives the limit of denominator, as x tends to zero

## OPTIONS

infinity

0

1

2

None of mentioned

Skip

Choose the correct option.

$$\lim_{x \rightarrow 0} \cot x \log \left( \frac{1+x}{1-x} \right)$$

OPTIONS

2

1

-1

none of the mentioned

A

Skip



### PASSAGE

Consider the Group  $G = \{1, \omega, \omega^2\}$  Where  $\omega$  is the cube root of unity, If  $*$  denotes the multiplication operation, the structure  $(G, *)$

Read the following Statement and Choose the correct option. (1 Mark)

Is it a Group under the multiplication operation?

### OPTIONS

Yes

No

Can Not be a group

None

A



Choose the correct option.

$$\lim_{x \rightarrow \pi/2} (\sec x - \tan x)$$

OPTIONS

-1

2

1

0

Skip



Choose the correct option.

$$\lim_{x \rightarrow 0} \left( \frac{\tan x}{x} \right)^{\frac{1}{x}}$$

OPTIONS

1

0

-1

none of the mentioned

Skip

Choose the correct option.

$$\lim_{x \rightarrow 0} \cot x \log \left( \frac{1+x}{1-x} \right)$$

OPTIONS

2

1

-1

none of the mentioned

A

Skip





### PASSAGE

Consider the Group  $G = \{1, \omega, \omega^2\}$  Where  $\omega$  is the cube root of unity, If  $*$  denotes the multiplication operation, the structure  $(G, *)$

Read the following Statement and Choose the correct option. (1 Mark)

Is it a Group under the multiplication operation?

### OPTIONS

Yes

No

Can Not be a group

None

A

Choose the correct option.

$$\lim_{x \rightarrow \pi/2} (\sec x - \tan x)$$

OPTIONS

-1

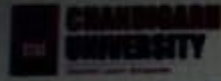
2

1

0

Skip





PASSAGE

Suppose  $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$ , then

Read the following Statement and Choose the correct option. (1 Marks)

Direct substitution gives the limit of numerator, as x tends to zero

OPTIONS

1 - a + b

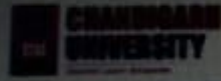
1 - a - b

0

1 - b

None of mentioned

SKIP



PASSAGE

Suppose  $\lim_{x \rightarrow 0} \frac{x(1 - a \cos x) + b \sin x}{x^3} = \frac{1}{3}$ , then

Read the following Statement and Choose the correct option. (1 Marks)

Direct substitution gives the limit of numerator, as x tends to zero

OPTIONS

1 - a + b

1 - a - b

0

1 - b

None of mentioned

SKIP



$G = \{+1, -1, +i, -i\}$  Where  $i$  is (iota) .

Read the following Statement and Choose the correct op

What is its identity Element ?

OPTIONS

1

-1

iota

None



**Read the following Statement and Choose the correct option. (1**

Is it a Group under the multiplication operation?

**OPTIONS**

Yes

No

Not Possible



ta) .

Read the following statement and choose the correct option. (1)

If it is a cyclic group then inverse of positive iota is

**OPTIONS**

positive iota only

negative iota only

negative iota and positive iota both

None



$i$  is (iota) .

Read the following Statement and Choose the correct option

If it is a cyclic group then its Generators are

**OPTIONS**

-1

1

negative iota only

negative iota and positive iota both



Read the following Statement and Choose the correct option. (1 M)

If it is a cyclic group then what is the order of its generator

**OPTIONS**

1

2

3

4



$\{+1, -1, +i, -i\}$  Where  $i$  is (iota).

Read the following Statement and Choose the correct option. (1 Marks)

What is its identity Element ?

OPTIONS

1

-1

iota

None

Review Later

SUBMIT ANSWER



Read the following Statement and Choose the correct option.

Find the limits of 'y' if Integral is taken  
as  $\int \int y \, dx \, dy$

- a)  $\frac{x^2}{4} \leq y \leq 25x$
- b)  $0 \leq y \leq 4$
- c)  $0 \leq y \leq 25x$
- d) None of these.

OPTIONS

a)

b)

c)

d)

Review Later



Read the following Statement and Choose the correct option.

Find the limits of  $y$  if integral is taken

as  $\iint y \, dy \, dx$

- a)  $\frac{x^2}{4} \leq y \leq 2x$
- b)  $0 \leq y \leq 4$
- c)  $0 \leq y \leq 2x$
- d) None of these

OPTIONS

a)

b)

c)

d)

Review



Read the following Statement and Choose the correct option.

Find the limits of 'y' if Integral is taken  
as  $\int \int y \, dx \, dy$

- a)  $\frac{x^2}{4} \leq y \leq 25x$
- b)  $0 \leq y \leq 4$
- c)  $0 \leq y \leq 25x$
- d) None of these.

OPTIONS

a)

b)

c)

d)

Review Later





Read the following Statement and Choose the correct option.

Find the limits of 'x' if integral is taken  
as  $\int \int y \, dx \, dy$

- a)  $\frac{y^2}{4} \leq x \leq 2\sqrt{y}$
- b)  $0 \leq x \leq 4$
- c)  $0 \leq x \leq 2\sqrt{y}$
- d) None of these

OPTIONS

a)

b)

c)

d)

Review Later

Read the following Statement and Choose the correct option.

The value of integral is

a)  $\frac{45}{5}$

b)  $\frac{24}{3}$

c) 0

d) None of these

OPTIONS

a)

b)

c)

d)

Re

Read the following Statement and Choose the correct option.

find the limits of  $x$  if integral is taken  
as  $\int \int y \, dy \, dx$

- a)  $0 \leq x \leq 4$
- b)  $\frac{y^2}{4} \leq x \leq 2\sqrt{y}$
- c)  $2\sqrt{y} \leq x \leq \frac{y^2}{4}$
- d)  $0 \leq x \leq 2\sqrt{y}$

OPTIONS

a)

b)

c)

d)

Review La

