PRIST DEEMED UNIVERSITY-ONLINE EXAMINATIONS-2020

24.08.2020AN_17148C31C/ 17148S31C/171EIC31/16148S31/161MCS31/ 171MCC31C/16148C31/16148S31 _Transform and Partial Differential Equations

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17148C31C/ 17148S31C/171EIC31/16148S31/161MCS31/ 171MCC31C/16148C31/16148S31 _Transform and Partial Differential Equations

Common to EEE, EIE, BIOTECH, MECHATRONICS, CSE, MECHANICAL, IT, ECE, CIVIL - II YEAR III SEM

The differential equation of all spheres whose radii are the same then arbitrary constant is ___

- 3
- 2
- 4
- 1

If z = ax + by + c the p = _____

- b
- c
- a
- 1

A PDE is said the _____ if the dependent variable and the partial derivatives occur in the first degree only and separately.

- Linear
- Non Linear
- Constant
- Complete

Let v(0, t) = 0 for all t ≥ 0 is the condition

- Boundary
- Functional
- Arbitrary
- String

A function f(x) is said to be _____ if and only if f(x+p) = f(x) is true for some value of p and every value of x.

- (●) Fourier
- ( ) Series
- ( ) Total
- ( ) Periodic

Z{ax(n) +by(n) = a Z{x(n)} + bZ{y(n)} then Z – transform is _____

- (●) Linear
- ( ) Additional
- ( ) Non Linear
- ( ) Equality

If $f(z) = \frac{2z}{z - e^{-T}}$ then f(0) is _____

- (●) 2
- ( ) -2
- ( ) 0
- ( ) 1

Let z = f(x+y) then arbitrary function is ____

- (●) 1

- 2
- 0
- 3

x sin nx is _____ function

- Transcendental
- Even
- Fourier
- Odd

f(x) be a function defined on (0,l). Suppose f(x) is sectionally continuous, then the finite Fourier ___ transform of f(x) is a function defind as $\bar{F}_s[f(x)]$

- infinite
- finite
- sine
- cos

The pdf of a vibrating string is $\frac{\partial^2 u}{\partial t^2} = \alpha^2 \frac{\partial^2 u}{\partial x^2}$ then α^2 is _____

- T/m

- Tx/m
- Ty/m

$e^{\frac{-x^2}{2}}$ is _____ under Fourier cosine transform

- Inverse
- Self-reciprocal
- Real Part
- Imaginary part

1 = A(n+1) + B the A is ____

- 0
- -1
- 2
- 1

$f(0) = \lim_{z\to\infty} F(z)$ is the _____ theorem

- Value
- Initial

- Final
- Boundary

A solution which contains as many arbitrary constants as there are independent variables is called _____ integral

- Minimum
- Partial
- Maximum
- Complete

$sinx = \sin(x + 2\pi) = \sin(x + 4\pi) = \cdots$ so sinx is a period function with the period 2π is called periodic function

- Transcendental
- Sinusoidal
- Position
- Primitive

PDE can be obtained by eliminating _____ functions from a given relation between the dependent and independent variables.

- Ordinary
- Differentially
- Partically

- (●) Arbitrary

The power full method of obtaining particular solutions of a pde is known as separation of _____ or product methods.

- ( ) Integer
- ( ) Coordinates
- (●) Variable
- ( ) Values

The _____ of two functions f(x) and g(x) is defined as (f*g)(x)

- ( ) Fourier
- (●) Convolution
- ( ) Production
- ( ) Multiply

F[af(x) + bg(x)] = aF[f(x)+bF(g(x)] is _____ property

- (●) Linear
- ( ) Singular
- ( ) Scale
- ( ) Modulation

Z transform of (n+2) is _____

- z/pow(z-1) + 2. z/(z-1)
- 1/z+2 + z/z-1
- a/z+2 +3 z/z-1
- z/z+1 + z/z-1

α^2 is used in the heat equation because α^2 is _____

- Null
- Negative
- Positive
- Zero

If z = ax + by +cz +d = 0 then Independent variables is _____

- 2
- 1
- 3
- 4

_____ transforms are used to in the solution of partial differential equations.

- ( ) Partical
- ( ) Integral
- (•) Lapace
- ( ) Fourier

$\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2} = 0$ is _____ type

- ( ) Parabolic
- ( ) float
- ( ) Hyperbolic
- (•) Elliptic

If f(-x) = _____ then f(x) is said to be odd function

- ( ) 0
- ( ) 1
- ( ) f(x)
- (•) -f(x)

_____ conditions is the function is periodic , single-valued and finite

- (•) Dirichlet's

- Normal
- Fourier
- Interval

Let Z $[\frac{a^n}{n}]$ is _____

- Log[z/z-a]
- Log[1/z-a]
- Log[z/a-z]
- Log[a/z-a]

Partial differential equations arise in connection with several physical and engineering problems in which the functions involved depend on two or more _____ variables such as time and coordinates in space.

- Dependent
- Independent
- Partial
- Dimension

One dimensional heat equation with the _____ and boundary conditions

- Initial
- Temperature

- Thermal
- Time

Let B^2 - 4AC = -4 then the equation is _____

- Elliptic
- Hyperolic
- Transform
- (•) Parabolic

The order of a pdf is the order of the ___ partial differential coefficient in it.

- Dependent
- (•) Highest
- Lowest
- Least

The _____ integral in the right hand side is known as Fourier integral theorem,

- Fourier
- (•) Partial
- Single

- Double

The _____ hand limit of f(x) at x = a then it is denoted as f(a+)

- Finte
- Continuity
- Left
- (•) Right

cosu(t-x) is _____

- cosut cost ux - sinut sinux
- sinut cost ux + cosut sinux
- cosut sint ux + sinut cosux
- (•) cosut cost ux + sinut sinux

The rate at which heat flows across any area is proportional to the area and to the temp gradient normal to the curve. This constant of proportionality is known as the _____ conductivity(k)

- (•) Thermal
- Head
- String
- Tempeature

If $f(x) - \frac{1}{2}(\pi - x)$ in the interval $(0, 2\pi)$ then a_0 is _____

- 4
- 0
- 1
- 2

$sin^3\theta =$ _____

- Option 3: $\frac{1}{3}[3\sin\theta - \sin 3\theta]$
- Option 2: $\frac{1}{2}[3\sin\theta - \sin 3\theta]$
- $3\sin\theta - \cos\theta$
- $\frac{1}{4}[3\sin\theta - \sin 3\theta]$

Option 4

Option 1

The Half range fourier cosine series for f(x)= x sinx in the interval 0 to pi then bn is _____

- 0
- -1
- 1
- -2

Give a function which is self reciprocal under Fourier sine and cosine _____ is $\frac{1}{\sqrt{x}}$

- Transform
- Derivation
- Functions
- Formula