An Extensive Review of Integral Transform

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Abstract— **Integral transforms are among the most powerful and widely used mathematical tools in science and engineering. Many integral transformations have been proposed, tested, and successfully applied to solve problems arising in various scientific and technological fields. The importance of these transforms lies in their unique ability to convert complicated mathematical problems from one domain into another domain where simpler algebraic techniques can be employed. Because of this capability, integral transforms have become essential in solving differential equations, integral equations, boundary value problems, and systems of equations encountered in applied mathematics, physics, and engineering sciences.**
In this study, we perform a quick survey of recent developments in Laplace type integral transforms.

Index Terms—**Integral transform, Differential equation, Boundary value problem.**

I. INTRODUCTION

Integral transforms are important mathematical tools used to convert difficult differential equations into simpler algebraic equations. This method helps in solving complicated mathematical problems easily. In an integral transform, a function is multiplied by another function called the kernel and then integrated. The general form of an integral transform is

$$T\{f(t)\} = F(u) = \int_{t_1}^{t_2} f(t)K(t,u)\,dt$$

where $f(t)$is the input function, $F(u)$is the transformed function, and $K(t,u)$is the kernel of the transform.
In this paper we study the integral transform of Laplace type. Pierree-Simon Laplace pioneerd the Laplace transform which is very useful and effective technique for solving initial and boundary value problems.

Over the years, many integral transforms have been proposed and most of these transforms have been named after the mathematicians who proposed them. Some integral transforms and their properties have been chronologically displayed in this work.

1.HY transform [46]:
The Hy transform of a continuous function f(t) is defined by

$$HY\{f(t)\} = u\int_0^\infty e^{-u^2} f(t)dt$$

HY transform of some elementary functions are

Function	HY transform
1	$\frac{1}{u}$
t^n	$\frac{n!}{u^{2n+1}}$
e^{at}	$\frac{u}{u^2 - a}$
$\sin at$	$\frac{au}{u^4 - a^2}$
$\cos at$	$\frac{u^3}{u^4 + a^2}$

HY transform of Derivatives
Let $HY\{f(t)\} = F(u)$ then,
i) $HY\{f'(t)\} = u^2F(u) - uf(0)$
ii) $HY\{f''(t)\} = u^4F(u) - u^3F(0) - uf'(0)$
iii) $HY\{f^n(t)\} = u^{2n}F(u) - \sum_1^{n-1} u^{2(n-k)-1}f^k(0)$

2.Bayawa Integral Transform [65]:
The Bayawa Integral Transform is defined as

$$B\{f(t)\} = \int_0^\infty K(s,t)\, f(t)dt$$

Where
- $K(s,t)$ is the kernel function,

- $f(t)$ is the original function
- $B\{f(t)\}$ denotes the transformed function.

Properties of Bayawa Integral Transform

1)Linearity property:

If a and b are constants, then

$$B\{af(t)+bg(t)\}=aB\{f(t)\}+bB\{g(t)\}$$

Bayawa Integral of Derivatives:

i) $B\{f'(t)\}=sB\{f(t)\}-f(0)$

ii) $B\{f''(t)\}=s^2B\{f(t)\}-sf(0)-f'(0)$

3.Sharad Transform[10]

The Sharad Transform of a function $f(t)$ is defined as

$$S\{f(t)\}=u\int_0^\infty e^{-st}f(t)dt$$

Where

- $f(t)$ is the original function.
- s is the transform parameter.
- $S\{f(t)\}$ denotes the transformed function.

Sharad Transform of some elementary functions are

Function	Sharad Transform
1	$\frac{1}{s}$
t	$\frac{1}{s^2}$
t^n	$\frac{n!}{s^{n+1}}$
e^{at}	$\frac{1}{s-a}$
sinat	$\frac{a}{s^2+a^2}$
cosat	$\frac{s}{s^2+a^2}$

Properties of Sharad Transform

1)Linearity property

If a and b are constants, then

$$S\{af(t)+bg(t)\}=aS\{f(t)\}+bS\{g(t)\}$$

Sharad Transform of Derivatives

i) $S\{f'(t)\}=sS\{f(t)\}-f(0)$

ii) $S\{f''(t)\}=s^2S\{f(t)\}-sf(0)-f'(0)$

4.Mhase integral transform[66]:

Mhase integral transform of a function $f(t)$ is defined as

$$M\{f(t)\}=\int_0^\infty e^{-st}f(t)dt$$

Mhase integral transform of some elementary functions are

Function	Mhase integral transform
1	$\frac{1}{s}$
t	$\frac{1}{s^2}$
t^n	$\frac{n!}{s^{n+1}}$
e^{at}	$\frac{1}{s-a}$
sinat	$\frac{a}{s^2+a^2}$
cosat	$\frac{s}{s^2+a^2}$

Basic properties of Mhase integral transform

1)Linearity property

If a and b are constants ,then

$$M\{af(t)+bg(t)\}=aM\{f(t)\}+bM\{g(t)\}$$

Mhase integral transform of Derivatives

i) $M\{f'(t)\}=sM\{F(t)\}-f(0)$

ii) $M\{f''(t)\}=s^2F(s)-sf(0)-f'(0)$

5.Khalouta Transform[32]:

The Khalouta Transform of a function $f(t)$ is defined as

$$K\{f(t)\}=\int_0^\infty e^{-\frac{t}{s}}f(t)dt$$

Khalouta Transform of some elementary functions are

Function	Khalouta Transform
1	s
t	s^2
t^n	$n!\,s^{n+1}$
e^{at}	$\frac{s}{1-as}$
sinat	$\frac{as^2}{s^2+a^2s^2}$
cosat	$\frac{s}{1+a^2s^2}$

Basic properties of Khalouta Transform

1)Linearity property

If a and b are constants, then

$$K\{af(t)+bg(t)\}=aK\{f(t)\}+bK\{g(t)\}$$

2)Scaling property

$$K\{f(at)\}=\frac{1}{a}F\left(\frac{s}{a}\right)$$

Khalouta Transform of Derivatives

i) $K\{f'(t)\}=\frac{1}{s}\{F(s)\}-f(0)$

ii) $K\{f''(t)\}=\frac{1}{s^2}\{F(s)\}-\frac{f(0)}{s}-f'(0)$

6.Fareena Transform[67]:

Fareena Transform of a function f(t) is defined as

$$F\{f(t)\}=\int_0^\infty e^{-ut}f(t)dt$$

Fareena Transform of some elementary functions are

Function	Fareena Transform
1	1
t	$\frac{1}{u}$
t^n	$\frac{n!}{u^n}$
e^{at}	$\frac{u}{u-a}$
sinat	$\frac{au}{u^2+a^2}$
cosat	$\frac{u^2}{u^2+a^2}$

Basic properties of Fareena Transform

1)Linearity property:

If a and b are constants, then

$$F\{af(t)+bg(t)\}=aF\{f(t)\}+bF\{g(t)\}$$

Fareena Transform of Derivatives

i) $K\{f'(t)\}=\frac{1}{s}\{F(s)\}-f(0)$

ii) $K\{f''(t)\}=\frac{1}{s^2}\{F(s)\}-\frac{f(0)}{s}-f'(0)$

7.Ramdhan Group Transform[47]

Ramdhan Group Transform of a function f(t) is defined as

$$R\{f(t)\}=\frac{1}{u}\int_0^\infty e^{-st}f(t)dt$$

Ramdhan Group Transform of some elementary functions are

Function	Ramdhan Group Transform
1	$\frac{1}{us}$
t	$\frac{1}{us^2}$
t^n	$\frac{n!}{us^{n+1}}$
e^{at}	$\frac{1}{u(s-a)}$
sinat	$\frac{a}{u(s^2+a^2)}$

Basic properties of Ramdhan Group Transform

1)Linearity property

If a and b are constants, then

$$R\{af(t)+bg(t)\}=aR\{f(t)\}+bR\{g(t)\}$$

II)Scaling property

$$R\{f(at)\}=\frac{1}{a}F\left(\frac{s}{a}\right)$$

Ramdhan Group Transform of Derivatives

i) $R\{f'(t)\}=s\{F(s)\}-\frac{f(0)}{u}$

ii) $R\{f''(t)\}=s^2\{F(s)\}-\frac{sf(0)}{s}-f'(0)$

8.Kashuri and Fundo Transform[68]

The Kashuri and Fundo Transform of a function f(t) is defined as

$$KF\{f(t)\}=u\int_0^\infty e^{-ut}f(t)dt$$

Where

u is the transform parameter,

f(t) is the original function

KF{f(t)} denotes the transformed function.

Kashuri and Fundo Transform of some elementary functions are

Function	Kashuri and Fundo Transform
1	1
t	$\frac{1}{u}$
t^n	$\frac{n!}{u^n}$
e^{at}	$\frac{u}{u-a}$
sinat	$\frac{au}{u^2+a^2}$
cosat	$\frac{u^2}{u^2+a^2}$
sinhat	$\frac{au}{u^2-a^2}$
coshat	$\frac{u^2}{u^2-a^2}$

Basic properties Kashuri and Fundo Transform

1)Linearity property

If a and b are constants ,then

$$KF\{af(t)+bg(t)\}=aKF\{f(t)\}+bKF\{g(t)\}$$

II)Scaling property

$$KF\{e^{at}f(t)\}=F(u-a)$$

Kashuri and Fundo Transform of Derivatives:

i) $KF\{f'(t)\}=uKF\{F(t)\}-uf(0)$

ii) $KF\{f''(t)\}=u^2KF\{F(t)\}-u^2f(0)-uf'(0)$

9.Kamal transform[27]

The Kamal transform of a function f(t)is defined by

$$K\{f(t)\}=\int_0^\infty e^{-\frac{t}{u}}f(t)dt$$

where uis the transform parameter.

Kamal transformof some elementary functions are

Function	Kamal transform
1	u
t	u^2
t^n	$n!\,u^{n+1}$
e^{at}	$\frac{u}{1-au}$
$\sin at$	$\frac{au^2}{1+a^2u^2}$
$\cos at$	$\frac{u}{1+a^2u^2}$

Properties Kamal transform

1)Linearity property

If a and b are constant, then

$$K\{af(t)+bg(t)\}=aK\{f(t)\}+bK\{g(t)\}$$

2)Scaling property

$$K\{f(at)\}=\frac{1}{a}F\left(\frac{s}{a}\right)$$

Kamal transform of Derivatives

i) $K\{f'(t)\}=\frac{1}{u}\{F(u)\}-f(0)$

ii) $K\{f''(t)\}=\frac{1}{u^2}F(u)-\frac{f(0)}{u}-f'(0)$

10.Mahgoub Transform[36]

The Mahgoub Transform of a function f(t)is defined by

$$M\{f(t)\}=s\int_0^\infty e^{-st}f(t)d$$

Function	Mahgoub Transform
1	1
t	$\frac{1}{s}$
t^n	$\frac{n!}{s^n}$
e^{at}	$\frac{s}{s-a}$
$\sin at$	$\frac{as}{s^2+a^2}$
$\cos at$	$\frac{s^2}{s^2+a^2}$

Properties of Mahgoub Transform

1)Linearity property

If a and b are constants ,then

$$M\{af(t)+bg(t)\}=aM\{f(t)\}+bM\{g(t)\}$$

2)Exponential Shift property

$$M\{e^{at}f(t)\}=F(u-a)$$

Mahgoub Transform of Derivatives

i)$M\{f'(t)\}=uM\{f(t)\}-u^2f(0)$

ii) $M\{f''(t)\}=u^2S\{f(t)\}-u^3f(0)-u^2f'(0)$

11.Tarig Transform[16]

The Tarig Transform of a function f(t)is defined by

$$T\{f(t)\}=\frac{1}{u}\int_0^\infty e^{-ut}f(t)dt$$

Function	Tarig Transform
1	$\frac{1}{u^2}$
t	$\frac{1}{u^3}$
t^n	$\frac{n!}{u^{n+2}}$
e^{at}	$\frac{1}{u(u-a)}$

Properties of Tarig Transform

1)Linearity property

If a and b are constants, then

$$T\{af(t)+bg(t)\}=aT\{f(t)\}+bT\{g(t)\}$$

2)Scaling property

$$T\{f(at)\}=\frac{1}{a}F\left(\frac{u}{a}\right)$$

Tarig Transform of Derivatives

i)$T\{f'(t)\}=uT\{f(t)\}-\frac{f(0)}{u}$

12.Sadik Transform[34]

The Sadik Transform of a function f(t)is defined by

$$S\{f(t)\}=\frac{1}{v^{\propto}}\int_0^\infty e^{\frac{-st}{v}}f(t)dt$$

Function	Sadik Transform
1	$\frac{v^{1-\alpha}}{s}$
t	$\frac{v^{2-\alpha}}{s^2}$
t^n	$\frac{n!\,v^{n+1-\alpha}}{s^{n+1}}$

Properties of Sadik Transform
1)Linearity property
If a and b are constants, then

$$S\{af(t)+bg(t)\} = aS\{f(t)\} + bS\{g(t)\}$$

2)Exponential Shift property

$$S\{e^{at}f(t)\} = F(s-av)$$

Sadik Transform of Derivatives

$$T\{f'(t)\} = \frac{s}{v}S\{F(s)\} - \frac{f(0)}{v^{\alpha}}$$

13.Yang Transform[69]
The Yang Transform of a function f(t)is defined by

$$Y\{f(t)\} = \int_0^{\infty} e^{-\frac{t}{u}} f(t)dt$$

Yang Transform of some elementary functions are

Function	Yang Transform
1	u
t	u^2
e^{at}	$\frac{u}{1-au}$

Properties of Yang Transform
1)Linearity property
If a and b are constants, then

$$Y\{af(t)+bg(t)\} = aY\{f(t)\} + bY\{g(t)\}$$

Yang Transform of Derivatives

$$Y\{f'(t)\} = \frac{1}{u}T(u) - f(0)$$

14.Shehu Transform[42]
The Shehu Transform of a function f(t)is defined by

$$S\{f(t)\} = \int_0^{\infty} e^{-\frac{st}{u}} f(t)dt$$

Shehu Transform of some elementary functions are

Function	Shehu Transform
1	$\frac{u}{s}$
t	$\frac{u^2}{s^2}$
e^{at}	$\frac{u}{s-au}$

Properties of Shehu Transform
1)Linearity property
If a and b are constants, then

$$S\{af(t)+bg(t)\} = aS\{f(t)\} + bS\{g(t)\}$$

2)Scaling property

$$S\{f(at)\} = \frac{1}{a}F\left(\frac{u}{a}\right)$$

Shehu Transform of Derivatives:

$$S\{f'(t)\} = \frac{s}{u}F(u,s) - f(0)$$

15.Sawi Transform [38]
The Sawi Transform of a function f(t)is defined by

$$S\{f(t)\} = \frac{1}{u^2}\int_0^{\infty} e^{\frac{-t}{u}} f(t)dt$$

Sawi Transform of some elementary functions are

Function	Sawi Transform
1	$\frac{1}{u}$
t	1

1)Linearity property
If a and b are constants ,then

$$S\{af(t)+bg(t)\} = aS\{f(t)\} + bS\{g(t)\}$$

Sawi Transform of Derivatives

$$S\{f'(t)\} = \frac{1}{u}F(u) - \frac{f(0)}{u^2}$$

16.Barne's Polynomial Integral Transform[70]
The Barne's Polynomial Integral Transform of a function f(t)is defined by

$$B\{f(t)\} = \frac{1}{u}\int_0^{\infty} P_n(t)e^{-st} f(t)dt$$

1)Linearity property:
If a and b are constants ,then

$$B\{af(t)+bg(t)\} = aB\{f(t)\} + bB\{g(t)\}$$

Barne's Polynomial Integral Transform of Derivatives

i) $B\{f'(t)\} = sF(s) - f(0)$

17.Atangana Kilicman Integral Transform[8]

Atangana Kilicman Integral Transform of a function $f(t)$is defined by

$$A\{f(t)\} = s^n \int_0^\infty e^{-st} f(t)dt$$

Function	Atangana Kilicman Integral Transform
1	s^{n-1}
t^m	$n!\,u^{n+1}$

Properties of Atangana Kilicman Integral Transform

1)Linearity property

If a and b are constants,then

$$A\{af(t) + bg(t)\} = aA\{f(t)\} + bA\{g(t)\}$$

Atangana Kilicman Integral Transform of Derivatives

i) $A\{f'(t)\} = sA\{f(t)\} - s^n f(0)$

18.Hankel Transform[71]

Hankel Transform of a function $f(t)$is defined by

$$H_n\{f(t)\} = s^n \int_0^\infty rf(r)J_n(sr)dr$$

where $J_n(sr)$is the Bessel function of first kind.

Properties of Properties of Atangana Kilicman Integral Transform

1)Linearity property

If a and b are constants, then

$$H_n\{af(r) + bg(r)\} = aH_n\{f(r)\} + bH_n\{g(r)\}$$

Hankel Transform of Derivatives

i) $H_n\left\{\frac{df}{dr}\right\} = -sH_{n+1}\, f(r)$

19.Kharrat Toma Transform[41]

Kharrat Toma Transform of a function $f(t)$is defined by

$$KT\{f(t)\} = s^2 \int_0^\infty e^{-st} f(t)dt$$

Kharrat Toma Transform of some elementary functions are

Function	Kharrat Toma Transform
1	s
t	1
t^n	$\frac{n!}{s^{n-1}}$

Properties of Properties of Kharrat Toma Integral Transform

1)Linearity property

If a and b are constants, then

$$KT\{af(t) + bg(t)\} = aKT\{f(t)\} + bKT\{g(t)\}$$

Kharrat Toma of Derivatives

$$KT\{f'(t)\} = sKT\{f(t)\} - s^2 f(0)$$

20.Alenzi Transform[72]

The Alenzi transform of a function $f(t)$is defined as

$$A\{f(t)\} = u \int_0^\infty e^{\frac{-t}{u}} f(t)dt$$

Alenzi Transform of some elementary functions are

Function	Alenzi Transform
t	u^2
t	u^3
t^n	$n!\,u^{n+2}$
e^{at}	$\frac{u^2}{1-au}$
sinat	$\frac{au^3}{1+a^2u^2}$
cosat	$\frac{u^2}{1+a^2u^2}$

Properties of Properties of Alenzi Transform

1)Linearity property

If a and b are constants,then

$$A\{af(t) + bg(t)\} = aA\{f(t)\} + bA\{g(t)\}$$

II)Scaling property

$$A\{f(at)\} = \frac{1}{a} F\left(\frac{u}{a}\right)$$

III)Exponential Shift property

$$A\{e^{at} f(t)\} = F\left(\frac{u}{1-au}\right)$$

Alenzi Transform of Derivatives

$$A\{f'(t)\} = \frac{1}{u}\{F(u)\} - uf(0)$$

ii) $A\{f''(t)\} = \frac{1}{u^2}F(u) - \frac{f(0)}{u} - uf'(0)$

21.W Transform[56]

The W transform is defined by

$$W\{f(t)\} = \frac{1}{u}\int_0^\infty e^{\frac{-t}{u}} f(t)dt$$

W Transform of some elementary functions are

Function	W Transform
1	1
t	u
t^n	$n!\,u^n$
e^{at}	$\frac{1}{1-au}$
sinat	$\frac{au}{1+a^2u^2}$
cosat	$\frac{1}{1+a^2s^2}$

Properties of Properties W Transform

1)Linearity property

If a and b are constants, then

$$W\{af(t) + bg(t)\} = aW\{f(t)\} + bW\{g(t)\}$$

2)Scaling property

$$W\{f(at)\} = \frac{1}{a}F\left(\frac{u}{a}\right)$$

W Transform of Derivatives:

i)$W\{f'(t)\} = \frac{1}{u}\{F(u)\} - \frac{1}{u}f(0)$

ii) $W\{f''(t)\} = \frac{1}{u^2}F(u) - \frac{f(0)}{u^2} - uf'(0)$

22.Pourreza Transform[73]

The Pourreza transform is defined as

$$P\{f(t)\} = s\int_0^\infty f(t)\, e^{-st}\, dt$$

Pourreza Transform of some elementary functions are

Function	Pourreza Transform
1	1
t	$\frac{1}{s}$
t^n	$\frac{n!}{s^n}$
e^{at}	$\frac{s}{s-a}$
sin at	$\frac{as}{s^2+a^2}$
cos at	$\frac{s^2}{s^2+a^2}$

Properties of Properties Pourreza transform

i) Linearity Property

$$P\{af(t) + bg(t)\} = aP\{f(t)\} + bP\{g(t)\}$$

ii) Exponential Shift Property

$$P\{e^{at}f(t)\} = F(s-a)$$

Pourreza transform of Derivatives

i)$P\{f'(t)\} = sP\{f(t)\} - sf(0)$

ii)$P\{f''(t)\} = s^2P\{f(t)\} - s^2f(0) - sf'(0)$

23.G-Transform[13]

The G-transform of a function f(t)is defined by

$$G\{f(t)\} = \int_0^\infty f(t)\, e^{-st/u}\, dt$$

G-transform of some elementary functions are

Function	G-transform
1	$\frac{u}{s}$
t	$\frac{u^2}{s^2}$
t^n	$\frac{n!\,u^{n+1}}{s^{n+1}}$
e^{at}	$\frac{u}{s-au}$

Properties of Pourreza transform

i) Linearity Property

$$G\{af(t) + bg(t)\} = aG\{f(t)\} + bG\{g(t)\}$$

(ii) Scaling Property

$$G\{f(at)\} = \frac{1}{a}F\left(\frac{s}{au}\right)$$

G-transform of Derivatives

i)$G\{f'(t)\} = \frac{s}{u}F(s,u) - f(0)$

ii)$G\{f''(t)\} = \frac{s^2}{u^2}F(s,u) - \frac{s}{u}f(0) - f'(0)$

24.Formable Transform[73]

The Formable transform is defined as

$$F\{f(t)\} = u\int_0^\infty f(t)\, e^{-st/u}\, dt$$

Formable transform of some elementary functions are

Function	G-transform
1	$\frac{u^2}{s}$
t	$\frac{u^3}{s^2}$
t^n	$\frac{n!\, u^{n+2}}{s^{n+1}}$
e^{at}	$\frac{u^2}{s-au}$

Properties of Formable transform

i) Linearity Property

$$F\{af(t)+bg(t)\} = aF\{f(t)\} + bF\{g(t)\}$$

(ii) Exponential Shift Property

$$F\{e^{at}f(t)\} = F(s-au)$$

Formable transform of Derivatives

i)$F\{f'(t)\} = \frac{s}{u}F(s,u) - uf(0)$

ii)$F\{f''(t)\} = \frac{s^2}{u^2}F(s,u) - sf(0) - uf'(0)$

25.ARA Transform[49]

The ARA transform of a function f(t)is defined by

$$A\{f(t)\} = s^n\int_0^\infty f(t)\, e^{-st}\, dt$$

ARA transform of some elementary functions are

Function	ARA transform
1	s^{n-1}
t	s^{n-2}
t^m	$\frac{m!}{s^{m-n+1}}$
e^{at}	$\frac{s^n}{s-a}$

Properties of ARA transform

1) Linearity Property

$$A\{af(t)+bg(t)\} = aA\{f(t)\} + bA\{g(t)\}$$

2) Scaling Property

$$A\{f(at)\} = \frac{1}{a^n}F\left(\frac{s}{a}\right)$$

ARA transform of Derivatives

i)$A\{f'(t)\} = sA\{f(t)\} - s^n f(0)$

ii)$A\{f''(t)\} = s^2A\{f(t)\} - s^{n+1}f(0) - s^n f'(0)$

26.Kushare Transform[33]

The Kushare transform of a function f(t)is defined by

$$K\{f(t)\} = s\int_0^\infty f(t)\, e^{-t}\, dt$$

Kushare transform of some elementary functions are

Function	Kushare transform
1	s
t^n	$n!\, s$
e^{at}	$\frac{s}{1-a}$
$\sin at$	$\frac{as}{1+a^2}$
$\cos at$	$\frac{s}{1+a^2}$

Properties of Kushare transform

1) Linearity Property

$$K\{af(t)+bg(t)\} = aK\{f(t)\} + bK\{g(t)\}$$

2) Shifting Property

$$K\{e^{at}f(t)\} = F(s-a)$$

Kushare transform of Derivatives

i)$K\{f'(t)\} = F(s) - sf(0)$

ii)$K\{f''(t)\} = F(s) - sf(0) - sf'(0)$

27.Soham Transform[45]

The Soham transform is defined as

$$S\{f(t)\} = \int_0^\infty f(t)\, e^{-t/u}\, dt$$

Soham transform of some elementary functions are

Function	Soham transform
1	u
t	u^2
t^n	$n!\, u^{n+1}$
e^{at}	$\frac{u}{1-au}$

Properties of Soham transform

i) Linearity Property

$$S\{af(t)+bg(t)\} = aS\{f(t)\} + bS\{g(t)\}$$

ii) Scaling Property

$$S\{f(at)\} = \frac{1}{a} F\left(\frac{u}{a}\right)$$

Soham transform of Derivatives

i)$S\{f'(t)\} = \frac{1}{u} F(u) - f(0)$

ii)$S\{f''(t)\} = \frac{1}{u^2} F(u) - \frac{f(0)}{u} - f'(0)$

28.Anuj Transform[7]

The Anuj transform is defined by

$$A\{f(t)\} = u \int_0^{\infty} f(t)\, e^{-ut}\, dt$$

Anuj transform of some elementary functions are

Function	Anuj transform
1	1
t	$\frac{1}{u}$
t^n	$\frac{n!}{u^n}$
e^{at}	$\frac{u}{u-a}$

Properties of Anuj Transform

1) Linearity Property

$$A\{af(t) + bg(t)\} = aA\{f(t)\} + bA\{g(t)\}$$

2) Exponential Shift Property

$$A\{e^{at} f(t)\} = F(u-a)$$

Anuj Transform of Derivatives

i)$A\{f'(t)\} = uF(u) - uf(0)$

ii)$A\{f''(t)\} = u^2 F(u) - u^2 f(0) - uf'(0)$

29.Emad Sara Transform[40]

The Emad Sara transform is defined as

$$E\{f(t)\} = \frac{1}{u} \int_0^{\infty} f(t)\, e^{-ut}\, dt$$

Emad Sara transform of some elementary functions are

Function	Emad Sara transform
1	$\frac{1}{u^2}$
t	$\frac{1}{u^3}$
t^n	$\frac{n!}{u^{n+2}}$
e^{at}	$\frac{1}{u(u-a)}$

Properties of Emad Sara transform

i) Linearity Property

$$E\{af(t) + bg(t)\} = aE\{f(t)\} + bE\{g(t)\}$$

(ii) Scaling Property

$$E\{f(at)\} = \frac{1}{a} F\left(\frac{u}{a}\right)$$

Emad Sara transform of Derivatives

i)$E\{f'(t)\} = uF(u) - \frac{f(0)}{u}$

ii)$E\{f''(t)\} = u^2 F(u) - f(0) - \frac{f'(0)}{u}$

30.Emad Falih Transform[29]

The Emad Falih transform is defined by

$$E\{f(t)\} = u^2 \int_0^{\infty} f(t)\, e^{-t/u}\, dt$$

Emad Falih transform of some elementary functions are

Function	Emad Falih transform
1	u^3
t	u^4
t^n	$n!\, u^{n+3}$
e^{at}	$\frac{u^3}{1-au}$

Properties of Emad Sara transform

1) Linearity Property

$$E\{af(t) + bg(t)\} = aE\{f(t)\} + bE\{g(t)\}$$

2) Exponential Shift Property

$$E\{e^{at} f(t)\} = F\left(\frac{u}{1-au}\right)$$

Emad Falih transform of Derivatives

i)$E\{f'(t)\} = \frac{1}{u} F(u) - u^2 f(0)$

ii)$E\{f''(t)\} = \frac{1}{u^2} F(u) - uf(0) - u^2 f'(0)$

31.General Integral Transform by Jafari[23]

The general integral transform introduced by Hassan Jafari is defined by

$$J\{f(t)\} = \int_a^b K(s,t) f(t)\, dt$$

where $K(s,t)$is the kernel of the transform.

general integral transform of some elementary functions are

Function	General integral transform
1	$\frac{u}{s}$

t	$\frac{u^2}{s^2}$
t^n	$\frac{n!\,u^{n+1}}{s^{n+1}}$

Properties of Emad Sara transform

1) Linearity Property

$$J\{af(t)+bg(t)\}=aJ\{f(t)\}+bJ\{g(t)\}$$

2) Convolution Property

$$J\{f*g\}=J\{f\}\cdot J\{g\}$$

General integral transform of Derivatives

i)$J\{f'(t)\}=sF(s)-f(0)$

32.AR Transform[74]

The AR transform is defined as

$$AR\{f(t)\}=\int_0^\infty f(t)\,e^{-st/u}\,dt$$

AR transform of some elementary functions are

Function	AR transform
1	$\frac{u}{s}$
t	$\frac{u^2}{s^2}$
t^n	$\frac{n!\,u^{n+1}}{s^{n+1}}$

Properties of Emad AR transform

1) Linearity Property

$$AR\{af(t)+bg(t)\}=aAR\{f(t)\}+bAR\{g(t)\}$$

2) Scaling Property

$$AR\{f(at)\}=\frac{1}{a}F\left(\frac{s}{au}\right)$$

AR transform of Derivatives

i)$AR\{f'(t)\}=\frac{s}{u}F(s,u)-f(0)$

ii)$AR\{f''(t)\}=\frac{s^2}{u^2}F(s,u)-\frac{s}{u}f(0)-f'(0)$

33.Complex SEE Transform[44]

The Complex SEE transform is defined by

$$C\{f(t)\}=\int_0^\infty f(t)\,e^{-i\omega t}\,dt$$

where i = sqrt − 1.

Complex SEE transform of some elementary functions are

Function	Complex SEE transform
1	$\frac{1}{iomega}$
e^{at}	$\frac{1}{iomega-a}$
sin at	$\frac{a}{omega^2-a^2}$
cos at	$\frac{iomega}{omega^2-a^2}$

Properties of Complex SEE transform

i) Linearity Property

$$C\{af(t)+bg(t)\}=aC\{f(t)\}+bC\{g(t)\}$$

(ii) Frequency Shift Property

$$C\{e^{iat}f(t)\}=F(\omega-a)$$

Complex SEE transform of Derivatives

i)$C\{f'(t)\}=i\omega F(\omega)-f(0)$

ii)$C\{f''(t)\}=(i\omega)^2F(\omega)-i\omega f(0)-f'(0)$

34. SEA transform[75]

The SEA transform of a function f(t)is defined as

$$SEA\{f(t)\}=\frac{1}{u^2}\int_0^\infty f(t)\,e^{-t/u}\,dt$$

SEA transform of some elementary functions are

Function	SEA transform
1	$\frac{1}{u}$
t	1
t^n	$n!\,u^{n-1}$
e^{at}	$\frac{1}{u(1-au)}$

(i) Linearity Property

$$SEA\{af(t)+bg(t)\}=aSEA\{f(t)\}+bSEA\{g(t)\}$$

(ii) Scaling Property

$$SEA\{f(at)\}=\frac{1}{a}F\left(\frac{u}{a}\right)$$

SEA transform of Derivatives

i)$SEA\{f'(t)\}=\frac{1}{u}F(u)-\frac{f(0)}{u^2}$

ii)$SEA\{f''(t)\}=\frac{1}{u^2}F(u)-\frac{f(0)}{u^3}-\frac{f'(0)}{u^2}$

35.GF1 Integral Transform[59]

The GF1 integral transform is defined by

$$GF1\{f(t)\}=u\int_0^\infty f(t)\,e^{-ut}\,dt$$

GF1 integral transform of some elementary functions are

Function	GF1 integral transform
1	1
t	$\frac{1}{u}$

t^n	$\frac{n!}{u^n}$
e^{at}	$\frac{u}{u-a}$

(i) Linearity Property

$$GF1\{af(t)+bg(t)\} = aGF1\{f(t)\} + bGF1\{g(t)\}$$

(ii) Exponential Shift Property

$$GF1\{e^{at}f(t)\} = F(u-a)$$

GF1 integral transform of Derivatives

i)$GF1\{f'(t)\} = uF(u) - uf(0)$

ii)$GF1\{f''(t)\} = u^2F(u) - u^2f(0) - uf'(0)$

36.KKAT Transform[28]

The KKAT transform is defined as

$$K\{f(t)\} = u\int_0^\infty f(t)\, e^{-st/u}\, dt$$

KKAT transform of some elementary functions are

Function	KKAT transform
1	$\frac{u^2}{s}$
t	$\frac{u^3}{s^2}$
t^n	$\frac{n!\, u^{n+2}}{s^{n+1}}$
e^{at}	$\frac{u^2}{s-au}$

i) Linearity Property

$$K\{af(t)+bg(t)\} = aK\{f(t)\} + bK\{g(t)\}$$

ii) Scaling Property

$$K\{f(at)\} = \frac{1}{a}F\left(\frac{s}{au}\right)$$

KKAT transform of Derivatives

i)$K\{f'(t)\} = \frac{s}{u}F(s,u) - uf(0)$

ii)$K\{f''(t)\} = \frac{s^2}{u^2}F(s,u) - sf(0) - uf'(0)$

37.Mellin Transform[35]

Definition

The Mellin transform of f(t)is defined by

$$M\{f(t)\} = \int_0^\infty t^{s-1}\, f(t)\, dt$$

Mellin transform of some elementary functions are

Function	Mellin transform
e^{-t}	$\Gamma(s)$
$t^n e^{-t}$	$\Gamma(n+s)$
$\sin t$	$\Gamma(s)$sinfracpis2

(i) Linearity Property

$$M\{af(t)+bg(t)\} = aM\{f(t)\} + bM\{g(t)\}$$

(ii) Scaling Property

$$M\{f(at)\} = a^{-s}F(s)$$

Mellin transform of Derivatives

i)$M\{f'(t)\} = -(s-1)F(s-1)$

ii)$M\{f''(t)\} = (s-1)(s-2)F(s-2)$

38.RAHMOH Transform[17]

The RAHMOH transform is defined as

$$R\{f(t)\} = \int_0^\infty f(t)\, e^{-t/u}\, dt$$

RAHMOH transform of some elementary functions are

Function	RAHMOH transform
1	u
t	u^2
t^n	$n!\, u^{n+1}$
e^{at}	$\frac{u}{1-au}$

1)Linearity Property

$$R\{af(t)+bg(t)\} = aR\{f(t)\} + bR\{g(t)\}$$

2) Exponential Shift Property

$$R\{e^{at}f(t)\} = F\left(\frac{u}{1-au}\right)$$

RAHMOH transform of Derivatives

i)$R\{f'(t)\} = \frac{1}{u}F(u) - f(0)$

ii)$R\{f''(t)\} = \frac{1}{u^2}F(u) - \frac{f(0)}{u} - f'(0)$

39.HK Transform[22]

The HK transform is defined by

$$HK\{f(t)\} = u^2\int_0^\infty f(t)\, e^{-ut}\, dt$$

HK transform of some elementary functions are

Function	HK transform
1	u
t	1
t^n	$\frac{n!}{u^{n-1}}$
e^{at}	$\frac{u^2}{u-a}$

1) Linearity Property

$$HK\{af(t)+bg(t)\} = aHK\{f(t)\} + bHK\{g(t)\}$$

(ii) Scaling Property

$$HK\{f(at)\} = \frac{1}{a^2} F\left(\frac{u}{a}\right)$$

HK transform of Derivatives

i) $HK\{f'(t)\} = uF(u) - u^2 f(0)$

ii) $HK\{f''(t)\} = u^2 F(u) - u^3 f(0) - u^2 f'(0)$

40.Khalouta Transform[32]

The Khalouta transform is defined as

$$K\{f(t)\} = \frac{1}{u}\int_0^\infty f(t)\, e^{-st/u}\, dt$$

Khalouta transform of some elementary functions are

Function	Khalouta transform
1	$\frac{1}{s}$
t	$\frac{u}{s^2}$
t^n	$\frac{n!\, u^n}{s^{n+1}}$
e^{at}	$\frac{1}{s-au}$

1) Linearity Property

$$K\{af(t) + bg(t)\} = aK\{f(t)\} + bK\{g(t)\}$$

2) Exponential Shift Property

$$K\{e^{at} f(t)\} = F(s - au)$$

Khalouta transform of Derivatives

i) $K\{f'(t)\} = \frac{s}{u} F(s,u) - \frac{f(0)}{u}$

ii) $K\{f''(t)\} = \frac{s^2}{u^2} F(s,u) - \frac{s}{u^2} f(0) - \frac{f'(0)}{u}$

41.Hunaiber Transform[4]

The Hunaiber transform is defined by

$$H\{f(t)\} = \int_0^\infty f(t)\, e^{-ut}\, dt$$

Hunaiber transform of some elementary functions are

Function	Hunaiber transform
1	$\frac{1}{u}$
t	$\frac{1}{u^2}$
t^n	$\frac{n!}{u^{n+1}}$
e^{at}	$\frac{1}{u-a}$

i) Linearity Property

$$H\{af(t) + bg(t)\} = aH\{f(t)\} + bH\{g(t)\}$$

ii) Scaling Property

$$H\{f(at)\} = \frac{1}{a} F\left(\frac{u}{a}\right)$$

Hunaiber transform of Derivatives:

i) $H\{f'(t)\} = uF(u) - f(0)$

ii) $H\{f''(t)\} = u^2 F(u) - uf(0) - f'(0)$

42.Abaub Shkheam Transform[25]

The Abaub Shkheam transform is defined as

$$A\{f(t)\} = \int_0^\infty e^{-st/u} f(t)\, dt$$

Abaub Shkheam transform of some elementary functions are

Function	Abaub Shkheam transform
1	$\frac{u}{s}$
t	$\frac{u^2}{s^2}$
t^n	$\frac{n!\, u^{n+1}}{s^{n+1}}$

i) Linearity Property

$$A\{af(t) + bg(t)\} = aA\{f(t)\} + bA\{g(t)\}$$

Abaub Shkheam transform of Derivatives

i) $A\{f'(t)\} = \frac{s}{u} F(s,u) - f(0)$

43.AMJ Transform[22]

The AMJ transform is defined by

$$AMJ\{f(t)\} = \int_0^\infty f(t)\, e^{-st}\, dt$$

AMJ transform of some elementary functions are

Function	AMJ transform
1	$\frac{1}{s}$
t	$\frac{1}{s^2}$
t^n	$\frac{n!}{s^{n+1}}$
e^{at}	$\frac{1}{s-a}$

1) Linearity Property

$$AMJ\{af(t) + bg(t)\} = aAMJ\{f(t)\} + bAMJ\{g(t)\}$$

2) Shifting Property

$$AMJ\{e^{at} f(t)\} = F(s - a)$$

AMJ transform of Derivatives

i) $AMJ\{f'(t)\} = sF(s) - f(0)$

ii) $AMJ\{f''(t)\} = s^2 F(s) - sf(0) - f'(0)$

44.g-Transform[13]

The g-transform is defined as

$$g\{f(t)\} = \frac{1}{u^2}\int_0^{\infty} f(t)\, e^{-ut}\, d$$

g-transform of some elementary functions are

Function	g-transform
1	$\frac{1}{u^3}$
t	$\frac{1}{u^4}$
t^n	$\frac{n!}{u^{n+3}}$
e^{at}	$\frac{1}{u^2(u-a)}$

1) Linearity Property

$$g\{af(t) + bg(t)\} = ag\{f(t)\} + bg\{g(t)\}$$

2) Scaling Property

$$g\{f(at)\} = \frac{1}{a^2} F\left(\frac{u}{a}\right)$$

g-transform of Derivatives

i)$g\{f'(t)\} = uF(u) - \frac{f(0)}{u^2}$

ii)$g\{f''(t)\} = u^2F(u) - \frac{f(0)}{u} - \frac{f'(0)}{u^2}$

45.Quideen Transformation[22]

The Quideen transformation of a function $f(t)$is defined by

$$O\{f(t)\} = \int_0^{\infty} f(t)\, e^{-t/u}\, dt$$

Quideen transform of some elementary functions are

Function	Quideen transformation
1	u
t	u^2
t^n	$n!\, u^{n+1}$
e^{at}	$\frac{u}{1-au}$

1) Linearity Property

$$O\{af(t) + bg(t)\} = aO\{f(t)\} + bO\{g(t)\}$$

2) Scaling Property

$$O\{f(at)\} = \frac{1}{a} F\left(\frac{u}{a}\right)$$

3) Exponential Shift Property

$$O\{e^{at}f(t)\} = F\left(\frac{u}{1-au}\right)$$

Quideen transformation of Derivatives

i)$O\{f'(t)\} = \frac{1}{u}F(u) - f(0)$

ii)$O\{f''(t)\} = \frac{1}{u^2}F(u) - \frac{f(0)}{u} - f'(0)$

46.Fareeha Transform[53]

The Fareeha transform is defined as

$$F\{f(t)\} = \int_0^{\infty} e^{-st} f(t)\, dt$$

Fareeha transform of some elementary functions are

Function	Fareeha transform
1	$\frac{1}{s}$
t	$\frac{1}{s^2}$
t^n	$\frac{n!}{s^{n+1}}$
e^{at}	$\frac{u}{1-au}$
$\sin at$	$\frac{a}{s^2+a^2}$
$\cos at$	$\frac{s}{s^2+a^2}$

(i) Linearity Property

$$F\{af(t) + bg(t)\} = aF\{f(t)\} + bF\{g(t)\}$$

(ii) Frequency Shift Property

$$F\{e^{at}f(t)\} = F(s-a)$$

(iii) Differentiation Property

$$F\{tf(t)\} = -\frac{d}{ds}F(s)$$

Fareeha transform of Derivatives

i)$F\{f'(t)\} = sF(s) - f(0)$

ii)$F\{f''(t)\} = s^2F(s) - sf(0) - f'(0)$

47.Abdallah Group Transform[20]

The Abdallah Group transform is defined by

$$A\{f(t)\} = \int_0^{\infty} K(s,t) f(t)\, dt$$

where $K(s,t)$is the kernel function.

(i) Linearity Property

$$A\{af(t) + bg(t)\} = aA\{f(t)\} + bA\{g(t)\}$$

(ii) Convolution Property

$$A\{f * g\} = A\{f\} \cdot A\{g\}$$

Abdallah Group transform of Derivatives

i)$A\{f'(t)\} = sF(s) - f(0)$

ii)$A\{f''(t)\} = s^2F(s) - sf(0) - f'(0)$

48.Rangaig Transform[46]

The Rangaig transform of a function $f(t)$is defined as

$$R\{f(t)\} = \int_0^{\infty} f(t)\, e^{-st/u}\, dt$$

Rangaig transform of some elementary functions are

Function	Rangaig transform
1	$\frac{u}{s}$
t	$\frac{u^2}{s^2}$
t^n	$\frac{n!\,u^{n+1}}{s^{n+1}}$
e^{at}	$\frac{u}{s-au}$

(i) Linearity Property

$$R\{af(t)+bg(t)\}=aR\{f(t)\}+bR\{g(t)\}$$

(ii) Scaling Property

$$R\{f(at)\}=\frac{1}{a}F\left(\frac{s}{au}\right)$$

(iii) Exponential Shift Property

$$R\{e^{at}f(t)\}=F(s-au)$$

Rangaig transform of Derivatives

i)$R\{f'(t)\}=\frac{s}{u}F(s,u)-f(0)$

ii)$R\{f''(t)\}=\frac{s^2}{u^2}F(s,u)-\frac{s}{u}f(0)-f'(0)$

49.Emad-Salam-Elaf Transform[63]

The Emad-Salam-Elaf transform is defined by

$$E\{f(t)\}=\frac{1}{u}\int_0^\infty e^{-st/u}\,f(t)\,dt$$

Emad-Salam-Elaf transform of some elementary functions are

Function	Emad-Salam-Elaf
1	$\frac{1}{s}$
t	$\frac{u}{s^2}$
t^n	$\frac{n!\,u^n}{s^{n+1}}$
e^{at}	$\frac{1}{s-au}$
$\sin at$	$\frac{au}{s^2+a^2u^2}$
$\cos at$	$\frac{s}{s^2+a^2u^2}$

(i) Linearity Property

$$E\{af(t)+bg(t)\}=aE\{f(t)\}+bE\{g(t)\}$$

(ii) Exponential Shift Property

$$E\{e^{at}f(t)\}=F(s-au)$$

(iii) Scaling Property

$$E\{f(at)\}=\frac{1}{a}F\left(\frac{s}{au}\right)$$

Emad-Salam-Elaf transform of Derivatives

i)$E\{f'(t)\}=\frac{s}{u}F(s,u)-\frac{f(0)}{u}$

ii)$E\{f''(t)\}=\frac{s^2}{u^2}F(s,u)-\frac{s}{u^2}f(0)-\frac{f'(0)}{u}$

50.Upadhya Transform[54]

The Upadhya transform of a function f(t)is defined by

$$U\{f(t)\}=\frac{1}{u}\int_0^\infty f(t)\,e^{-t/u}\,dt$$

Upadhya transform of some elementary functions are

Function	Upadhya Transform
1	1
t	u
t^n	$n!\,u^n$
e^{at}	$\frac{1}{1-au}$
$\sin at$	$\frac{au}{1+a^2u^2}$
$\cos at$	$\frac{1}{1+a^2u^2}$

1) Linearity Property

$$U\{af(t)+bg(t)\}=aU\{f(t)\}+bU\{g(t)\}$$

2) Scaling Property

$$U\{f(at)\}=\frac{1}{a}F\left(\frac{u}{a}\right)$$

3) Exponential Shift Property

$$U\{e^{at}f(t)\}=F\left(\frac{u}{1-au}\right)$$

Upadhya transform of Derivatives

i)$U\{f'(t)\}=\frac{1}{u}F(u)-\frac{f(0)}{u}$

ii)$U\{f''(t)\}=\frac{1}{u^2}F(u)-\frac{f(0)}{u^2}-\frac{f'(0)}{u}$

51.Laplace Transform[58]

The Laplace Transform of a function f(t)is defined by

$$L\{f(t)\}=\int_0^\infty e^{-st}\,f(t)dt$$

Laplace Transform of some elementary functions are

Function	Laplace Transform
1	$\frac{1}{s}$
t	$\frac{1}{s^2}$
t^n	$\frac{n!}{s^{n+1}}$

e^{at}	$\frac{1}{s-a}$
$\sin at$	$\frac{a}{s^2+a^2}$
$\cos at$	$\frac{s}{s^2+a^2}$

1) Linearity

$$L\{af(t)+bg(t)\} = aL\{f(t)\}+bL\{g(t)\}$$

2) First Shifting Property

$$L\{e^{at}f(t)\} = F(s-a)$$

3) Change of Scale

$$L\{f(at)\} = \frac{1}{a}F\left(\frac{s}{a}\right)$$

i)$L\{f'(t)\} = sF(s)-f(0)$

ii)$L\{f''(t)\} = s^2F(s)-sf(0)-f'(0)$

52.Sumudu Transform[24]

$$S\{f(t)\} = \int_0^\infty f(ut)\,e^{-t}dt$$

Sumudu Transform of some elementary functions are

Function	Sumudu Transform
1	1
t	u
t^n	$n!\,u^n$
e^{at}	$\frac{1}{1-au}$
$\sin at$	$\frac{au}{1+a^2u^2}$
$\cos at$	$\frac{1}{1+a^2u^2}$

1) Linearity

$$S\{af(t)+bg(t)\} = aS\{f(t)\}+bS\{g(t)\}$$

2) Scaling Property

$$S\{f(at)\} = F(au)$$

3) Differentiation Property

$$S\{tf(t)\} = u\frac{d}{du}F(u)$$

Sumudu Transform of Derivatives

i)$S\{f'(t)\} = \frac{F(u)-f(0)}{u}$

ii)$S\{f''(t)\} = \frac{F(u)-f(0)-uf'(0)}{u^2}$

53.Laplace-Carson Transform[58]

$$LC\{f(t)\} = s\int_0^\infty e^{-st}f(t)dt$$

Laplace-Carson Transform of some elementary functions are

Function	Laplace-Carson Transform
1	1
t	$\frac{1}{s}$
t^n	$\frac{n!}{s^n}$
e^{at}	$\frac{s}{s-a}$
$\sin at$	$\frac{as}{s^2+a^2}$
$\cos at$	$\frac{s^2}{s^2+a^2}$

i) Linearity

$$LC\{af(t)+bg(t)\} = aLC\{f(t)\}+bLC\{g(t)\}$$

ii) Frequency Shift

$$LC\{e^{at}f(t)\} = F(s-a)$$

Laplace-Carson Transform of Derivatives

i)$LC\{f'(t)\} = sLC\{f(t)\}-sf(0)$

ii)$LC\{f''(t)\} = s^2LC\{f(t)\}-s^2f(0)-sf'(0)$

54.Natural Transform[28]

$$N\{f(t)\} = \int_0^\infty f(t)\,e^{-st/u}dt$$

Laplace-Carson Transform of some elementary functions are

Function	Natural Transform
1	$\frac{u}{s}$
t	$\frac{u^2}{s^2}$
t^n	$\frac{n!\,u^{n+1}}{s^{n+1}}$
e^{at}	$\frac{u}{s-au}$
$\sin at$	$\frac{au^2}{s^2+a^2u^2}$
$\cos at$	$\frac{su}{s^2+a^2u^2}$

(i) Linearity

$$N\{af(t)+bg(t)\} = aN\{f(t)\}+bN\{g(t)\}$$

(ii) Exponential Shift

$$N\{e^{at}f(t)\} = F(s-au,u)$$

Natural Transform of Derivatives

i)$N\{f'(t)\} = \frac{s}{u}F(s,u)-f(0)$

ii)$N\{f''(t)\} = \frac{s^2}{u^2}F(s,u) - \frac{s}{u}f(0) - f'(0)$

55.Elzaki Transform[15]

$$E\{f(t)\} = u\int_0^\infty f(t)\, e^{-t/u}dt$$

Elzaki Transform of some elementary functions are

Function	Elzaki Transform
1	u^2
t	u^3
t^n	$n!\,u^{n+2}$
e^{at}	$\frac{u^2}{1-au}$
sin at	$\frac{au^3}{1+a^2u^2}$
cos at	$\frac{u^2}{1+a^2u^2}$

i) Linearity

$$E\{af(t)+bg(t)\} = aE\{f(t)\} + bE\{g(t)\}$$

(ii) Scaling Property

$$E\{f(at)\} = \frac{1}{a}F\left(\frac{u}{a}\right)$$

Elzaki Transform of Derivatives

i)$E\{f'(t)\} = \frac{1}{u}F(u) - uf(0)$

ii)$E\{f''(t)\} = \frac{1}{u^2}F(u) - f(0) - uf'(0)$

56.Aboodh Transform[1]

$$A\{f(t)\} = \frac{1}{s}\int_0^\infty e^{-st}f(t)dt$$

Aboodh Transformof some elementary functions are

Function	Aboodh Transform
1	u^2
t	u^3
t^n	$n!\,u^{n+2}$
e^{at}	$\frac{u^2}{1-au}$
sin at	$\frac{au^3}{1+a^2u^2}$
cos at	$\frac{u^2}{1+a^2u^2}$

(i) Linearity

$$A\{af(t)+bg(t)\} = aA\{f(t)\} + bA\{g(t)\}$$

(ii) Frequency Shift

$$A\{e^{at}f(t)\} = F(s-a)$$

Aboodh Transform of Derivatives

i)$A\{f'(t)\} = sF(s) - \frac{f(0)}{s}$

ii)$A\{f''(t)\} = s^2F(s) - f(0) - \frac{f'(0)}{s}$

57.ZZ Transform[61]

$$ZZ\{f(t)\} = u\int_0^\infty f(t)\, e^{-st/u}dt$$

ZZ Transform of some elementary functions are

Function	ZZ Transform
1	$\frac{u^2}{s}$
t	$\frac{u^3}{s^2}$
t^n	$\frac{n!\,u^{n+2}}{s^{n+1}}$
e^{at}	$\frac{u^2}{s-au}$
sin at	$\frac{au^3}{s^2+a^2u^2}$
cos at	$\frac{su^2}{s^2+a^2u^2}$

i) Linearity

$$ZZ\{af(t)+bg(t)\} = aZZ\{f(t)\} + bZZ\{g(t)\}$$

(ii) Exponential Shift

$$ZZ\{e^{at}f(t)\} = F(s-au,u)$$

(iii) Scaling Property

$$ZZ\{f(at)\} = \frac{1}{a}F\left(\frac{s}{au},u\right)$$

ZZ Transform of Derivatives

i)$ZZ\{f'(t)\} = \frac{s}{u}F(s,u) - uf(0)$

ii)$ZZ\{f''(t)\} = \frac{s^2}{u^2}F(s,u) - sf(0) - uf'(0)$

58.Mohand Transform[37]

The Mohand transform of a function f(t), defined for $t \geq 0$, is given by

$$M\{f(t)\} = u^2\int_0^\infty f(t)\, e^{-ut}dt$$

where uis the transform parameter and the integral converges.

Mohand transform of some elementary functions are

Function	Mohand transform
1	u
t	1
t^n	$\frac{n!}{u^{n-1}}$
e^{at}	$\frac{u^2}{u-a}$

1)Linearity

$$M\{af(t) + bg(t)\} = aM\{f(t)\} + bM\{g(t)\}$$

2)Scaling

$$M\{f(at)\} = \frac{1}{a^2} F\left(\frac{u}{a}\right)$$

Mohand transform of Derivatives

i)$M\{f'(t)\} = uF(u) - u^2 f(0)$

59.ZMA Transform[6]

The ZMA Transform of a function f(t), defined for is given by

$$ZMA\{f(t)\} = \frac{1}{u}\int_0^\infty f(t)\, e^{-st/u} dt$$

ZMA Transform of some elementary functions are

Function	ZMA Transform
1	$\frac{1}{s}$
t	$\frac{u}{s^2}$
t^n	$\frac{n!\, u^n}{s^{n+1}}$
e^{at}	$\frac{1}{s - au}$

1)Linearity

$$ZMA\{af(t) + bg(t)\} = aZMA\{f(t)\} + bZMA\{g(t)\}$$

2)Scaling Property

$$ZMA\{f(at)\} = \frac{1}{a} F\left(\frac{s}{au}\right)$$

3)Exponential Shift

$$ZMA\{e^{at} f(t)\} = F(s - au, u)$$

ZMA Transform of Derivatives

$$ZMA\{f'(t)\} = \frac{s}{u} F(s, u) - \frac{f(0)}{u}$$

60.NE Transform[60]

The NE Transform of a function f(t), defined for $t \geq 0$, is given by

$$NE\{f(t)\} = u\int_0^\infty e^{-\frac{st}{u}} f(t) dt$$

where

sand uare transform parameters,

f(t)is a piecewise continuous function of exponential order

NE Transform of some elementary functions are

Function	NE Transform
1	$\frac{u^2}{s}$
t	$\frac{u^3}{s^2}$
e^{at}	$\frac{u^2}{s - au}$
sin (at)	$\frac{au^3}{s^2 + a^2u^2}$

Properties of NE Transform

Let

$$NE\{f(t)\} = F(s, u)$$

1. Linearity Property

If aand bare constants, then

$$NE\{af(t) + bg(t)\} = aNE\{f(t)\} + bNE\{g(t)\}$$

2. Change of Scale Property

For $a > 0$,

$$NE\{f(at)\} = \frac{1}{a} F\left(\frac{s}{a}, u\right)$$

3. Exponential Shifting Property

If $NE\{f(t)\} = F(s, u)$, then

$$NE\{e^{at} f(t)\} = F(s - au, u)$$

4. Transform of Multiplication by t

$$NE\{tf(t)\} = -u\frac{\partial F(s, u)}{\partial s}$$

5. Transform of Multiplication by t^n

$$NE\{t^n f(t)\} = (-u)^n \frac{\partial^n F(s, u)}{\partial s^n}$$

NE Transform of Derivatives

$$NE\{f'(t)\} = \frac{s}{u} F(s, u) - uf(0)$$

61.KAJ Transform[50]

$$KAJ\{f(t)\} = \int_0^\infty f(t)\, e^{-t/u} dt$$

KAJ Transform of some elementary functions are

Functions	KAJ Transform
1	u
t	u^2
e^{at}	$\frac{u^2}{s - au}$
sin (at)	$\frac{au^3}{s^2 + a^2u^2}$

1)Linearity

2)Scaling

3)Exponential Shift

KAJ Transform of Derivatives

$$KAJ\{f'(t)\} = \frac{1}{u} F(u) - f(0)$$

62.SEJI Transform[64]

$$\mathrm{SEJI}\{f(t)\} = \int_0^\infty f(t)\, e^{-iq(s)t} dt$$

SEJI Transform of some elementary functions are

Function	SEJI Transform
1	$\frac{1}{iq(s)}$
t	$\frac{1}{(u)^2}$
e^{at}	$\frac{1}{iq(s)-a}$

1)Linearity
2)Frequency Shift
3)Convolution
SEJI Transform of Derivatives

$$\mathrm{SEJI}\{f'(t)\} = iq(s)F(s) - f(0)$$

63.Raj Transform[24]

$$R\{f(t)\} = s\int_0^\infty f(t)\, e^{-st} dt$$

Raj Transform of some elementary functions are

Function	Raj Transform
1	1
t	$\frac{1}{s}$
t^n	$\frac{n!}{s^n}$

Raj Transform of Derivatives

$$R\{f'(t)\} = sR\{f(t)\} - sf(0)$$

64.IMAN Transform[5]

$$\mathrm{IMAN}\{f(t)\} = \int_0^\infty f(t)\, e^{-t/u} dt$$

IMAN Transform of some elementary functions are

Function	IMAN Transform
1	u
t	u^2
e^{at}	$\frac{u}{1-au}$

IMAN Transform of Derivatives

$$\mathrm{IMAN}\{f'(t)\} = \frac{1}{u}F(u) - f(0)$$

65.INEM Transform[43]

$$\mathrm{INEM}\{f(t)\} = \int_0^\infty p(s)\, e^{-st} f(t) dt$$

1)Linearity
2)Scaling
3)Frequency Shift
INEM Transform of Derivatives

$$\mathrm{INEM}\{f'(t)\} = sF(s) - p(s)f(0)$$

66.Rohit Transform[19]

$$R\{f(t)\} = \frac{1}{u}\int_0^\infty f(t)\, e^{-st/u} dt$$

Rohit Transform of some elementary functions are

Function	Rohit Transform
1	$\frac{1}{s}$
t	$\frac{u}{s^2}$
e^{at}	$\frac{1}{s-au}$

Rohit Transform of Derivatives

$$R\{f'(t)\} = \frac{s}{u}F(s,u) - \frac{f(0)}{u}$$

67.DV (Dinesh Verma) Transform[18]

$$\mathrm{DV}\{f(t)\} = \frac{1}{u^2}\int_0^\infty f(t)\, e^{-t/u} dt$$

DV (Dinesh Verma) Transform of some elementary functions are

Function	DV (Dinesh Verma) Transform
1	$\frac{1}{u}$
t	1
t^n	$n!\, u^{n-1}$

DV (Dinesh Verma) Transform of Derivatives

$$G\{f'(t)\} = \frac{s}{u}F(s,u) - \frac{f(0)}{u}$$

68.Gupta Transform[18]

The Gupta Transform of a function f(t), defined for $t \geq 0$, is given by

$$G\{f(t)\} = \frac{1}{u}\int_0^\infty e^{-\frac{st}{u}} f(t) dt$$

where
sand uare transform variables,
f(t)is piecewise continuous and of exponential order.
1. Linearity Property
If aand bare constants, then

$$G\{af(t) + bg(t)\} = aG\{f(t)\} + bG\{g(t)\}$$

Change of Scale Property
For $a > 0$,

$$G\{f(at)\} = \frac{1}{a} F\left(\frac{s}{a}, u\right)$$

Exponential Shifting Property

If

$$G\{f(t)\} = F(s, u),$$

then

$$G\{e^{at} f(t)\} = F(s - au, u)$$

69.J Transform [43]

The J Transform of a function $f(t)$, defined for $t \geq 0$, is given by

$$J\{f(t)\} = s \int_0^\infty e^{-st} f(t) dt$$

where:

$s$is the transform parameter,

$f(t)$is piecewise continuous and of exponential order

1. Linearity Property

If $a$and $b$are constants, then

$$J\{af(t) + bg(t)\} = aJ\{f(t)\} + bJ\{g(t)\}$$

2.First Shifting Property

$$J\{e^{at} f(t)\} = F(s - a)$$

Function	J Transform
1	1
t	$\frac{1}{s}$
t^n	$\frac{n!}{s^n}$
e^{at}	$\frac{s}{s-a}$
sin (at)	$\frac{as}{s^2+a^2}$
cos (at)	$\frac{s^2}{s^2+a^2}$

70.Rishi Transform[31]

The Rishi Transform of a function $f(t)$, defined for $t \geq 0$, is given by

$$R\{f(t)\} = \frac{1}{u} \int_0^\infty e^{-t/u} f(t) dt$$

where $u$is the transform parameter and $f(t)$is piecewise continuous on $[0, \infty)$.

Rishi Transform of some elementary functions are

Function	Rishi Transform
1	1
t	u
e^{at}	$\frac{1}{1-au}$
sin (at)	$\frac{au}{1+a^2u^2}$
cos (at)	$\frac{1}{1+a^2u^2}$

1. Linearity Property

If $a$and $b$are constants, then

$$R\{af(t) + bg(t)\} = aR\{f(t)\} + bR\{g(t)\}$$

2. Change of Scale Property

For $a > 0$,

$$R\{f(at)\} = \frac{1}{a} F\left(\frac{u}{a}\right)$$

3. Exponential Shifting Property

$$R\{e^{at} f(t)\} = F\left(\frac{u}{1 - au}\right)$$

REFERENCES

[1] Aboodh Khalid Suleman: The New Integral Transform, "Aboodh Transform". Global Journal of Pure and Applied Mathematics, vol. 9, No. 1 pp. 35-43 (2013).

[2] Muhammad Akbar and Rashid Mawaz, Introducing a New Integral Transform Called AR-Transform, Journal of Mathematical Techniques in Modelling, Vol.1, Issue 1, (2024).

[3] Ahmad A. Alenzi: Application of Modified Integral Transform to Solve Ordinary and Partial Differential Equations. Applied Mathematical Sciences, vol. 15, No. 15, pp. 737-748 (2021)

[4] Mona Hunaiber Ali , Al Aati; Some fundamental properties Hunaiber transform and its appilcations to partial differential equations, International Journal of Mathematics and Computer Research, Vol. 10, Issue 7(2022) pp. 2808-2811.

[5] Iman Ahmed Almardy, The new integral transform, "Iman transform" International Journal of Advanced Research in Science, Communication and Technology, Vol. 3, Issue 1 (March 2023) pp. 1-5.

[6] Zanib Mohammed Alwan, ZMA transform Technique, Journal of Interdisciplinary Mathematics, Oct. 2021.

[7] Anuj kumar, Shikha Bansal and Sudhanshu Aggarwal: A New Novel Integral Transform Anuj Transform with Applications, Design Engineering, Issue 9, pp. 12741-12745.

[8] Atangana, A. and Kilicman, A.: A Novel Integral Operator Transform and its Application to some FODE and FPDE with Some Kind of Singularities. Math. Probl. Eng. (2013).

[9] Barnes, B.: Polynomial Integral Transform for Solving Differential Equations. Eur. J. Pure Appl. Math. Vol 9, No. 2, pp. 140-151 (2016).

[10] Sharad B. Ugale and Dinkar P. Patil ; A New More General Integral Transform: Sharad Transform and Its Applications, Communications in Mathematics and Applications, Vol. 15, No. 4, pp. 1305–1316, 2024

[11] Bochner, S., Chandrasekharn, K.: Fourier Transform, Princeton University Press London, UK (1949).

[12] Deakin, M. A. B.: Euler's Investigation of Integral Transform. Arch. Hist. Exat. Sci. Vol. 33, pp. 307-319 (1985).

[13] Debnath Lokenath and Bhatta Dambaru:Integral Transforms and their Applications. Third Edition, CRC Press, Taylor and Francis Group Boca Raton, London, Newyork.

[14] Derle, M.S. , Patil, D. P. , Rahane, N. K.: On Generalized Double Rangaig Integral Transform and Applications. Stochastic Modelling and Applications, vol.26, No. 3 (2022).

[15] Elzaki, T. M.: The New Integral Transform "Elzaki Transform" . Glob. J. Pure Appl. Math. 7, pp. 57-64 (2011).

[16] Elzaki, Tarig M. and Elzaki Salih M. : On the New Integral Transform, "Tarig Transform" and System of Ordinary Differential Equations. Applied Mathematics ,Elixir Appl. Math. Vol. 36, pp. 3226-3229 (2011).

[17] R. A. Farah and M. A. Hamad; On the use of RAHMOH integral transform for solving differential equations, International Journal of Physics and Mathematics Vol. 6(2) (2024) pp. 1-8..

[18] Rahul Gupta, Rohit Gupta and Dinesh Verma; Application of Novel integral transform: Gupta transform to mechanical and electrical oscillators, ASIO Journal of Chemistry, Physics, Mathematics and Applied Sciences, Vol. 4, No. 1(2020) pp. 4-7.

[19] Rohit Gupta; On novel integral transform: Rohit transform and its applications in boundary value problems, ASIO Journal of Chemistry, Physics, Mathematics and Applied Sciences, Vol. 4, No. 1(2020) pp. 8-13.

[20] Borhen Halouani, Pravin Ailawalla and A.M. Abdallh; Dualities and applications of the new integral transform, AIP Advances14, 125016(2024), pp. 125016-1 to 125016-6.

[21] Ali Hameed and Emad Kuffi ; The SEA integral transformation and its applications in ordinary differential equations, International Journal of Health Science, Vol. 6, (2022) , pp. 613-622.

[22] Hozon Hilmi and Karwan H. F. Jwamer; A new integral transform and applications: HK transform, Zanco Journal of Pure and Applied Sciences (2024) pp. 37-46.

[23] Jafari, H. : A New General Integral Transform for Solving Integral Equations. Journal of Advanced Research, vol. 32, pp. 133-138(2021).

[24] C. Jesuraj and A. Rajkumar, A new modified Sumudu transform Called Raj Transform to solve differential equations and problems in Engineering and Science, International Journal of Emerging Technology 11(2) (2020) pp. 958-964.

[25] Jinam A. Jasim, Emad A. Kuffi and Sadik A. Mehdi; A review on the integral transform, Journal of University of Anbar for Pure Science, Vol. 17(2)(2023) pp. 273-310.

[26] Yang Xian-Jun: A New Integral Transform Method for Solving Steady Heat Transfer Problem. Thermal Science, vol.20, Suppl.3 (2016)

[27] Sedeeg Abdeliah Kamal H.: The New Integral Transform, "Kamal Transform". Advances in Theoretical and Applied Mathematics, vol. 11, No. 4, pp. 451-458 (2016).

[28] Karry Iqbal, Muhammad Kalim and Adnan Khan; Application of Karry-Kalim-Adnan transformation (KKAT) to mechanics and electric circuits, Journal of Function Space, Vol. 2022(1) (July 2022) pp. 1-11.

[29] Khan, Z. H., Khan, W. A.: Natural Transform-Properties and Applications. NUST J. Engg. Sci. No.1, pp. 127-133(2008).

[30] Emad Kuffi, Sarah Falih Makttof: "Emad Falih Transform", A New Integral Transform. Journal of Interdisciplinary Mathematics, vol. 24, Issue 8 (2022).

[31] Emad A. Kuffi and Elaf S. Abbas; A complex integral transform, "Complex EE Transform" and its applications, Mathematical Statistician and Engineering Applications, Vol. 71, No. 2 (2022) pp. 263-266.

[32] R. Kumar, J. Chandel and S. Aggarwal, A new integral transform, "Rishi Transform" with applications, Journal of Scientific Research, Vol. 14(2) (2022).

[33] Nikita Kumawat, AkankshaShukla and Mahendra

Narayan Mishra; Khalouta transform and applications to fractional differential equations, Front. Appl. Math. Stat., Vol. 10(2024).
[34] Kushare, S. R., Patil, D. P. and Takate, A. M.: The New Integral Transform, “Kushare Transform" International Journal of Advances in Engineering and Management, vol. 3, Issue 9, pp. 1589-1592(2021).
[35] Shaikh Sadikali Latif: Introducing a New Integral Transform, “Sadik Transform”. American International Journal of Research in Science, Technology, Engineering and Mathematics, vol. 22 No. 1, pp. 100-102 (2018).
[36] Yuri Luchko and VirgianiaKiryakova; Applications of the Mellin integral transform techniques in fractional Calculus, Chapter Feb. 2019 DOI: 10.1515/9783110571622-008 (Available on Research gate)
[37] Mahgoub Mohand M. Abdelrahim: The New Integral Transform, “Mahgoub Transform”. Advances in Theoretical and Applied Mathematics, vol. 11, No. 4, pp. 391-398 (2016).
[38] Mahgoub Mohand M. Abdelrahim: The New Integral Transform, “Mohand Transform”. Advances in Theoretical and Applied Mathematics, vol. 12, No. 2, pp. 113-120 (2017).
[39] Mahgoub Mohand M. Abdelrahim: The New Integral Transform, “Sawi Transform”. Advances in Theoretical and Applied Mathematics, vol. 14, No. 1, pp. 81-87 (2019).
[40] Eman A. Mansour, Emad A. Kuffi and Sadia A. Mehdi; The new integral transform, “SEE Transform” and its applications, Periodicals of engineering and Natural Sciences, Vol. 9, No. 2, (2021) pp. 1016-1029.
[41] Sarah Falih Makttof, Emad Kuffi and Elaf Sabah Abbas: “Emad Sara Transform, A New Integral Transform. Journal of Interdisciplinary Mathematics, vol. 24, Issue 7, (2021).
[42] Mustapha, R.A., Salau, A. M., Bahatunde Idowu, Ogbai, C. O. and Idowu, G. A : Kharrat Toma Transform and its Application in Solving Some Ordinary Differential Equations with Initial Boundary Conditions. International Journal of Innovative Science and Research Technology, vol. 6, Issue 8 pp. 224-229 (2021)
[43] Maitama, S. and Zhao, W.: A New Integral Transform, Shehu Transform a Generalization of Sumudu and Laplace Transform for Solving Differential Equations. Int. J. Anal. Appl. Vol. 17 pp. 167-190 (2019)
[44] Intidhar Zamil Mushtt, Emad Abbas Kuffi, A Novel integral transform; INEM transform , Journal of Kufa for Mathematics and Computer Vol. 10, No. 2 Aug 2023, pp. 109-113.
[45] E. A. Mansoor, E. A. Kuffi, The Complex SEE transform technique in difference Equations and differential difference equations, Vol. 12, No. 3 (2024) pp. 624-637.
[46] Patil D. P., Khakale S. S.: The New Integral Transform, “Soham Transform" International Journal of Advances in Engineering and Management, vol. 3, Issue 10, pp. 126-132(2021).
[47] Patil D. P., Gangurde J. P., Wagh, S. N. and Bachhav, T. P.: Applications of the HY Transform for Newtons Law of Cooling. International Journal of Research and Analytical Reviews, Vol. 9, Issue 2, pp. 740-745, (2022).
[48] Ralson R. K., Ramdhan, M. A., El-Danat, T. S. and Hadhoud, A. R.: On a New General Integral Transform; Some Properties and remarks. J. Math. Comput. Sci. Vol. 6, Issue 1, pp.103-109 (2016).
[49] Rangaig N., Minor, N., Penonal G., Fillipians, J. and Convicto, V.: On Another Type of Transform Called Rangaig Transform. Int. J. Partial Diff. Equ. Appl. Vol. 5 pp. 42-48 (2017).
[50] Rania Sadeh, Ahmed Qazza and Aliaa Burgan: A New Integral Transform “ARA Transform”, its Properties and Application, Symmetry, Vol. 12,925 (2000).
[51] Abbas Elaf Sabah, Emad A Kuffi, Alyaa Abedalrhman Jawad, New integral “Kuffi-Abbas-Jawad (KAJ) transformation and its applications on ordinary differential equations, Journal of Interdisciplinary Mathematics, July 2022.
[52] Shehu Maitama and Weidong Zhao; BeyoudShehu transform and natural transform, “J transform” properties and applications, Journal of Applied Analysis and Computation, Vol. 10, No. 4 (2020) pp. 1223-1241.
[53] Srivastava, H, Luo, M. and Raina, R.: A New Integral Transform and its Applications. Acta Math. Sci. 35(B, pp 1386-1400 (2015).
[54] Nguyen Minh Tuan, Sanoe Koonprasert; Fareeha transform performance in solving fractional differential telegraph equations combining adomain decomposition method, Math. Meth

Appl. Sci. 2023(46) pp. 11043-11057.

[55] Lalitmohan Upadhyaya: Introducing the Upadhyaya Integral Transform. Bulletin of Pure and Applied Sciences, vol. 38 E (Math and Stat) No. 1 pp. 471-510 (2019).

[56] Dinesh Verma; Putting forward a novel integral transform "Dinesh Verma Transform" and its applications, International Journal of Scientific Research in Mathematical and Statistical Sciences, Vol. 7, No. 2, (2020) pp. 139-145.

[57] Ping Wang, Xin-Yu Peng and Fang Wang; The analysis and application of a new integral transform W transform, Thermal Sciences, Vol. 27, No. 5A(2023) pp. 3823- 3827.

[58] Watugula G. K.: Sumudu Transform; A New Integral Transform to Solve Differential Equations and Control Engineering Problems. Int. J. Math. Edu. Sci. Technol. Vol. 24, pp. 35-43 (1993).

[59] Widder D. V.: The Laplace Transform. Princeton University Press London, UK (1946).

[60] Gwila Nbila Wila and Ali Farhat; GF_1 integral transform and its applications, Journal of Alasmarya University Basic and Applied Science,Vol. 7, No. 2, (2022) pp. 84-93.

[61] Ervenila Musta Xhaferraj, The new integral transform: NE transform and its appplications, European Journal of Formal Science and Engineering, Vol. 6, Issue 1(2023) pp. 23-34.

[62] Zafar Zain UI Abadin: ZZ Transform method. International Journal of Advanced Engineering and Global Technology, vol. 4 Issue 1, pp. 1605-1611 (2016).

[63] R. D. Mhase, A. R. Fulari, S.A. Tarte and H. N. Shaikh; A new integral transform and its applications, International Journal of Scientific Research in Science and Technology, Vol. 11(19) (2014)pp. 424-442.

[64] Salam Abdulhussein Seben, Emad A. Kuffi and Elaf Sabah Abbas; Another kind of general integral transform called, Emad-Salam-Elaf transform", BIO Web of Conferences ,97,00139(2024).

[65] Sadiq A. Mehdi, Emad A. Kuffi and Jinam A. Jasim; Solving ordinary differential equations using a new general complex integral transform, Journal of interdisciplinary Mathematics, DOI 10.1080/09720502.2022.2089381, 2022.

[66] Bayawa Zayyanu B. and Haliru Aisha A.; The new integral transform " Bayawa Transform", International Journal of Advanced Research in Science, Communication and Technology, Vol. 4, Issue 2(2024), pp.18-126.

[67] R. D. Mhase, A. R. Fulari, S.A. Tarte and H. N. Shaikh; A new integral transform and its applications, International Journal of Scientific Research in Science and Technology, Vol. 11(19) (2014)pp. 424-442.

[68] Nguyen Minh Tuan, Sanoe Koonprasert; Fareeha transform performance in solving fra1h. Meth Appl. Sci. 2023(46) pp. 11043-11057.

[69] Jinam A. Jasim, Emad A. Kuffi and Sadik A. Mehdi; A review on the integral transform, Journal of University of Anbar for Pure Science, Vol. 17(2)(2023) pp. 273-310.

[70] Yang Xian-Jun: A New Integral Transform Method for Solving Steady Heat Transfer Problem. Thermal Science, vol.20, Suppl.3 (2016)

[71] Barnes, B.: Polynomial Integral Transform for Solving Differential Equations. Eur. J. Pure Appl. Math. Vol 9, No. 2, pp. 140-151 (2016).

[72] Debnath Lokenath and Bhatta Dambaru:Integral Transforms and their Applications. Third Edition, CRC Press, Taylor and Francis Group Boca Raton, London, Newyork.

[73] Ahmad A. Alenzi: Application of Modified Integral Transform to Solve Ordinary and Partial Differential Equations. Applied Mathematical Sciences, vol. 15, No. 15, pp. 737-748 (2021)

[74] Shamal A. Gangarde, Shruti P. Katkade, et al.:Laplace Pourreza Transform, International Journal of Scientific Research in Science and Technology September-October-2024, 11 (19):443-451

[75] Muhammad Akbar and Rashid Mawaz, Introducing a New Integral Transform Called AR Transform, Journal of Mathematical Techniques in Modelling, Vol.1, Issue 1, (2024)

[76] Ali Hameed and Emad Kuffi ; The SEA integral transformation and its applications in ordinary differential equations, International Journal of Health Science, Vol. 6, (2022) , pp. 613-622.