PROCEEDINGS ICEMEA 2021

1st International e Conference on

ESSENCE OF MATHEMATICS AND ENGINEERING APPLICATIONS

ICEMEA-2021

(29th&30th December 2021)

Editors
Dr.B.V.Appa Rao
Dr.Ch.V.Ramana Murthy
Dr.J.Peter Praveen

(DEEMED TO BE UNIVERSITY)
Green Fields, Vaddeswaram,
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Organized by :

Department of Mathematics

(DEEMED TO BE UNIVERSITY)

NAAC A++ GRADE

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Preface

KONERU LAKSHMAIAH EDUCATION FOUNDATION , VADDESWARAM ,GUNTUR IS ORGANIZING A MULTI-DISCIPLINARY I ST INTERNATIONAL CONFERENCE ENTITLED " ESSENCE OF MATHEMATICS AND ENGINEERING APPLICATIONS(ICEMEA-2021)" IN VIRTUAL MODE ON 29TH&30TH DECEMBER, 2021 HAS PROVIDED A GLOBAL PLATFORM BRINGING ACADEMIA, RESEARCHERS, ENGINEERS, INDUSTRY EXPERTS AND STUDENTS TOGETHER TO SHARE THEIR KNOWLEDGE, WORK AND EXPERIENCES BOTH THROUGH THE PRESENTATIONS FROM THE CONFERENCE AND DISSEMINATION OF HIGH QUALITY RESEARCH PUBLICATIONS IN THE AREAS OF MATHEMATICS AND SCIENCE. THIS ACTS AS AN INTERNATIONAL FORUM FOR ONLINE INTERACTIONS WITH EMINENT SPEAKERS AND RENOWNED EXPERTS ABOUT THE RECENT INNOVATIONS, TRENDS AND CONCERNS AS WELL AS PRACTICAL CHALLENGES ENCOUNTERED AND SOLUTIONS ADOPTED IN THE FIELD OF MATHEMATICS AND SCIENCE.

WE ARE EARNESTLY THANKFUL TO OUR MANAGEMENT, VICE-CHANSELLOR,PRO-VC'S,DEAN-R &D,DIRECTOR-FED,VICE-PRINCIPAL-FED,CHAIR PERSONS AND MEMBERS OF VARIOUS COMMITTEES, INTERNATIONAL AND NATIONAL ADVISORY COMMITTEES FOR THEIR WHOLEHEARTED SUPPORT AND ENCOURAGEMENT.

WE ARE ALSO THANKFUL FOR ALL THE AUTHORS WHO HAVE CONTRIBUTED THEIR RESEARCH WORKS TO THE CONFERENCE. WE TRULY BELIEVE THAT THE PARTICIPANTS WILL FIND THE DISCUSSIONS FRUITFUL AND WILL APPRECIATE THE OPPORTUNITY FOR SETTING UP FUTURE COLLABORATIONS.

CONVENER

ABOUT THE K L E F:

The Koneru Lakshmaiah Charities was established as a trust in the year 1980 with its official address at Museum road, Governorpet, Vijayawada and started KL College of Engineering in the Academic year 1980-81. The trust was converted into a Society by the name Koneru Lakshmaiah Education Foundation in the year 1996. The KL College of Engineering has attained autonomous status in the year 2006 and in February 2009, the Koneru Lakshmaiah Education Foundation Society was recognized as Deemed to be University offering academic programs at UG, PG, Doctoral and Post-Doctoral levels. The University is recognized by the All India Council for Technical Education (AICTE), New Delhi, has been accredited by the National Board of Accreditation (NBA), and is certified by ISO 9001-2015. It has been accredited by National Assessment and Accreditation Council (NAAC) with A++ grade with 3.57 CGPA on 4-point scale. The vision of the institution is to be a globally renowned university and the mission is to impart quality higher education and to undertake research and extension with emphasis on application and innovation that cater to the emerging societal needs through all-round development of students enabling them to be globally competitive and socially responsible citizens with intrinsic values.

ABOUT THE DEPARTMENT:

The department of Mathematics focuses on pure and applied mathematics catering to the professional needs of students of varied backgrounds. The department is offering courses for students majoring in Science, Engineering, Commerce and Business Administration. The department is offering M.Sc. Program in Applied Mathematics and Research Program leading to Ph.D.

LOCATION:

The KL Deemed to be University is located at Green fields, Vaddeswaram, Guntur Dist, Andhra Pradesh in a 100 acre green campus abutting Buckingham Canal about 9 km from Vijayawada railway station and bus stand. Vijayawada is located on the banks of river Krishna in the state of Andhra Pradesh. The city is well connected by National Highway and railways with Chennai (440km), Hyderabad (275km) and Visakhapatnam (385km). The city is the gateway for trains running from North to South India. Vijayawada is well connected by daily flights from the cities Visakhapatnam, Hyderabad, Chennai, Bangalore and Delhi.

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PRESIDENT'S MESSAGE

An engineer needs to use mathematics and apply science for engineering solutions to many types of problems pertaining to different disciplines.

Proper knowledge of mathematics is the prime requisite requirement for engineering various kinds of applications. An engineer must know general purpose mathematics and mathematics related to a specific discipline. An engineer having clear knowledge of the mathematics will be able to engineer solutions to the problems that are to be solved with least cost and time.

I am happy that the department of Mathematics, KLEF is organizing two day national conference on "1st International Conference on Essence of Mathematics and engineering applications(ICEMEA-2021)" which is quite apt for every engineering and also non engineering student. Various discussions and presentations on this topic should bring out various present day usages of mathematics using which one will be able to find solutions to complex problems.

I wish the organizers good luck for successfully conducting the National Conference and come out with the proceedings and recommendations which can be circulated to all the engineers for their knowledge and usage of the findings.

Er. KONERU SATYANARAYANA
PRESIDENT

CHANCELLOR'S MESSAGE

I am Happy to know that the Department of mathematics is organizing the two day national conference on "Essence of Mathematics and Engineering Applications "from 29th -30th December 2021.

Several specialists from IITs and International Professors are participating and contributing on several challenging Industrial problems and solutions in the conference.

The Two Day Conference is sure to provide a rich experience to the young researchers who can exchange ideas and learn from the expert participants and work towards greater achievements useful to the research community.

I wish all the delegates to interact and participate in all sessions to accomplish scientific breakthroughs.

I wish the conference a great success.

PROF.S.S.MANTHA
CHANCELLOR

VICE-CHANCELLOR'S MESSAGE

I extend my warm welcome to all the participants and appreciate the Department of Mathematics, KLEF Deemed to be University for their commitment and superb drive in organizing this **1st International Conference "Essence of Mathematics and Engineering Applications(ICEMEA-2021)" .** Conferences are the platforms for academic discourse. I am certain that this platform proves to be a great opportunity for the researchers, postgraduate students and industrial people for strengthening their academic and research aspirations. I believe in the virtual discussions and findings which can be generated only through these kinds of research and development (R&D) activities.

Mathematics is a rapidly growing interdisciplinary branch that incorporates many new advances in computer science and has applications in other sciences and industry. The deliberations of the delegates will undoubtedly generate lots of interesting and innovative concepts which pave the way to industrial commercialization. I extend my best wishes to the students and faculty who are a part of our University and to those who seek to join us in this conference for sharing and creating knowledge. I am sure that you will feel proud of sharing your academic excellence in our vibrant campus and wish you all a grand success.

Dr.G.PARDHA SARADHI VARMA
Vice Chancellor

DIRECTOR'S MESSAGE

I congratulate the Department of Mathematics of KLEF Deemed to be University in organizing this ***1st International Conference " Essence of Mathematics and Engineering Applications(ICEMEA-2021)"***I am sure that this conference becomes a right platform for the students, researches and industrial delegates to come up with innovative deliberations. Mathematics has become more and more international, and solidarity across countries which has been increasing at a fast pace. It is not just a language of science, but it is also a science of formulating theories for other sciences. Besides fundamental research, the importance of the interaction of mathematics with other areas of science, computers and industry is now largely in demand.

I whole heartedly appreciate the efforts of the organizers of the Department of Mathematics for coming forward with such a challenging theme of contemporary relevance. I hope that this conference will definitely become a landmark event in facilitating knowledge exchange and research discourse. I wish all the participants of the conference to come up with useful research deliberations.

PROF.A. JAGADEESH
CCO & DIRECTOR-FED

VICE-PRINCIPAL'S MESSAGE

It is quite gratifying to note and with great pleasure, I would like to state that the Department of Mathematics of our college is hosting its 1 st International Virtual Conference on Essence of Mathematics and Engineering Applications (ICEMEA-2021) on 29th& 30th December, 2021. Organizing such an event at this point of time reinforces our objective of developing an environment for the exchange of ideas towards technological developments. I wish the conference would be able to deliberate on current issues of national and international relevance, particularly in the field of Mathematics Modelling in Ecology, Rough Set Theory and its Application, Game Theory Models and Application WSNs, Life with Mathematics and Integration of Technology in Education. There have been unprecedented numbers of quality papers that are to be presented in the conference. I am sure that this occasion will provide an affable environment for the researchers and academicians to freely exchange the views and ideas with others. I convey my warm greetings and felicitations to the organizing committee and the participants and extend my best wishes for the success of the conference.

PROF.V.KRISHNA REDDY
VICE-PRINCIPAL

HOD MESSAGE

On behalf of the 1 st International Virtual Conference on Essence of Mathematics and Engineering Applications (ICEMEA-2021), I welcome all the invited keynote speakers, session chairs, paper presenters and participants. It is my great pleasure to serve as convener for the conference being organized at our University. I hope this conference provide online lively events where the researchers and practitioners from around the world join together to discuss a wide array of important issues in Mathematics and Science.

The theme of conference Essence of Mathematics and Engineering Applications is purposely broad so that we could have an eclectic array of papers ranging over a variety of the mess including such topics as innovative research practices, learning sciences, and utilization of technology in the present pandemic situation like Covid-19 and more. We have received 120 papers from the authors in different fields all over the globe.

I hope during your time at the conference in virtual mode will provide an

opportunity to engage with your peers to discuss your ideas for research and practice.

PROF.B.V.APPA RAO

PROFESSOR & HOD

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PROGRAM SCHEDULE

1st International Conference on

"ESSENCE OF MATHEMATICS AND ENGINEERING APPLICATIONS"

K L E F

29th December, 2021

DAY-1

S.No	Time	Event	nted by
1	9.30AM-09.35AM	Inauguration & Welcome to Dignitaries	Dr. Ankita Tiwari
2	09.35AM – 09.40 AM	Conference objectives by organizing Secretary	Dr. B. V. Appa Rao H.O.D.
3	09.40-09.45AM	Address by Convenor	Dr. Ch. V. Ramana Murthy
4	09.45-09.50 AM	Address by Dean R & D	Dr. J. K.Singh
5	09.50AM – 09.55 AM	Address by Registrar	Dr.Y.V.S.S.S.V. Prasada Rao
6	09.55-10.00 AM	Address by Honorable V.C	Dr.G.Pardha Saradhi Varma
7	10.00-10.05 AM	Address by Chief Guest	Dr. M Vishnu Vardhan Rao
8	10.05-10.10 AM	Proceeding Released by Director,CCO	Dr. A Jagdeesh ,
9	10.10-10.15 AM	Introduction of Resource person	Dr V.Vasanta Kumar
10	10.15AM-11.45AM	Invited Talk-1	Dr. J S Rao
11	11.45AM-11.50AM	Q& A followed by Session Chair Remarks	Dr. V.Vasanta Kumar
12	11:50-12.00 noon	BREAK	
13	12.00-12:05 PM	Introduction of Resource person	Dr. V.S. Bhagavan
14	12.05-01.20 PM	Invited Talk-II	Dr. M. Vishnu Vardhana Rao
15	01.20-01.30 PM	Q& A followed by Session Chair Remarks	Dr. V.S. Bhagavan
16	01.30pm-02.00 PM	LUNCH BREAK	
17	02.00pm-02.05 PM	Introduction of Resource person	Dr. K Rajyalakshmi
18	02.05-03.05 PM	Invited Talk-III	Dr.Abdul Aziz Bin Abdul Raman
19	03.05-03.15 PM	Q& A followed by Session Chair Remarks	Dr. K Rajyalakshmi
20	03.15-05.00 PM	Parallel session (Paper presentations)	

PROGRAM SCHEDULE

1st International Conference on

"ESSENCE OF MATHEMATICS AND ENGINEERING APPLICATIONS"

K L E F

30th December, 2021

DAY-2

S.No	Time	Event	Presented by
1	09.30 AM	GREETINGS & WELCOME TO ALL	Dr.Ankita Tiwari Assistant Professor
2	09.30-09.35 AM	Introduction of resource person	Dr. Y Bhargavi
3	09.35AM-11.00AM	Invited Talk-IV	Dr. Akbar Rezaei
4	11.00AM-11.10AM	Q& A followed by Session Chair Remarks	Dr T Eeswar lal
5	11.10AM-11.15AM	TEA BREAK	
6	11.15 AM-11.20	Introduction of Resource person	Dr.S.Ragamayi
7	11.20 AM – 12.25 AM	Invited Talk-V	Dr. Al-Farhany
8	12.25 PM-12.30AM	Q& A followed by Session Chair Remarks	Dr. Ch V Ramana Murthy
9	12.30 PM-1.30PM	LUNCH BREAK	
10	1.30 PM-3.30PM	Parallel Sessions(Paper Presentations)	
11	03.30 PM onwards	Valedictory Function	
12	03.30-03.35 P M	Address by FED Co-ordinator	Dr. V. Krishna Reddy
13	03.35-03.40 PM	Address by Principal,College of Science	Dr. K. Subramanyam
14	03.40-03.45 PM	Address by Guest of Honor	Er. W. Gauri Shankar
15	3.45 -03.50PM	Concluding remarks	Dr. V. S. Bhagavan
16	3.50-04.00PM	Participants feedback	
17	4.00-04.10 PM	Vote of Thanks by Co- Convenor	Dr. S. V. Subrahmanyam
18	04.10 PM	End of the conference	National Anthem

RESOURCE PERSONS
&
TOPICS OF PRESENTATIONS

S. NO.	NAME	UNIVERSITY	TOPIC	PHOTO
1	DR. J.S. RAO	Univesity Of California, Usa	Testing For Isotropy And A Related Random Walk Problem	
2	DR. M. VISHNU VARDHANA RAO	Icmr, New Delhi	Research Methodolgy And Bio-Statistics In Health Data	
3	DR. ABDUL AZIZ BIN ABDUL RAMAN	University Of Malaya, Malaysia	Development Of Optimized, Simplified, Maximizedand Safer Chemical Processes Through Mathematical Applications	
4	DR. AKBAR REZAEI	Payame Noor University, Iran	Some Topics In An Extention Of Ci-Algebras	
5	DR. KHALED AL-FARHANY	University Of Al-Qadisiyah, Iraq	Enchanceent Of Natural Convection In The Porous/Non-Porous Cavities Using Nanofluid/Hybrid And Magnetohydrodynamics	

Abstracts

ICEMEA-21-001

Controllability and Observability of Adjoint Dynamic Matrix Sylvester Impulsive Systems on Measure Chains

A. Sreenivasulu[1], B. V. Appa Rao[2]

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[2]Department of Mathematics, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Guntur-522502, Andhra Prasesh, India, bvardr2010@kluniversity.in

Abstract

In this work, we develop the results on controllability and observability of adjoint dynamic matrix Sylvester impulsive systems on measure chains. Also, it deals with the complete controllability and observability of the solution of a time-varying and time-invariant system on measure chains that generalize some known properties about stability from the continuous case to the time scales.

ICEMEA-21-002

On Multiplicative (Generalized) Left Derivations In Prime And Semi Prime Ring

[1]S.Lalitha, [2]Dr.S.Sreenivasulu, [3]Prof.A.MallikarjunReddy

[1]Department of Mathematics, Research Scholar, S.K.University, Ananthapuramu-515003, A.P.India.. &Lecturer in Mathematics,GDC(Yerraguntla),Kurnool.

[2]Department of mathematics, GDC (M), S.K.University, Ananthapuramu-515003, A.P.India.

[3]Department of Mathematics, S.K .University, Ananthapuramu-515003, A.P.India.

Abstract:

In a Semi-prime ring R. If $F(xy) = x F(y) + yd(x)$ for all $x,y \in R$ then the map $F: R \to R$ is called a Multiplicative (generalized) – Left derivation . Where $d : R \to R$ is any map (not necessarily derivation). The main objective of the present paper is to study the following situations. (1) If $F(xy) - xy = 0 \ \forall \ x, y \in I$ then $Id(I) = 0$ and $F(xy) = xF(y) \ \forall \ x, y \in I$ then F is a commuting map on I (2) If $F(xy) - yx = 0 \ \forall \ x, y \in I$ then $[I, I]I = 0$ and $Id(I) = 0$ and $F(xy) = xF(y) \ \forall \ x, y \in I$ then F is a commuting map on I (3) If $F(xy) - xy \in Z \ \forall \ x, y \in I$ then $I [d(x), x] = 0 \ \forall \ x \in I$

ICEMEA-21-003

Chemical Reaction Effect On Eyring-Powell Nano-Fluid Flow Over A Porous Stretching Sheet In The Presence Of Variable Viscosity

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[*]Department of Mathematics, VR Siddhartha Engineering College, Kanur, Vijayawada-520007.
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[3]Department of Mathematics, JNTUK Kakinada, AP-533003
Email: [1]akuri.sandhya@gmail.com, [2]gvrr1976@gmail.com, [3]deekshitulu_g@yahoo.com

Abstract:
Present analysis is to study the influence of chemical reaction over Magneto hydrodynamic (MHD) fluid flow on a permeable extending sheet in the existence of magnetic field with variable viscosity is considered. The non-dimensional governing laws for this examination are resolved by utilizing MATLAB BVP4C package. The effect of distinct non-dimensional governing factors on velocity, temperature and concentration profile are discoursed qualitatively & exhibited graphically, as well the skin friction, rate of heat and mass transfer are analyzed, also shown in tabular form.

ICEMEA-21-004

Effect Of Radiation Parameters Over Skin Friction on An Unsteady Convective Heat And Mass Transfer Flow

K. Jhansi Rani [1] & Ch. V. Ramana Murthy [2]
1 Department of Applied Mathematics,
Lakireddy Bali Reddy College of Engineering, MYLAVARAM-521 230 (A. P) INDIA
2 Department of Applied Mathematics,
Koneru Lakshmaiah Education Foundation, VADDESHWARAM – 522 502 (A.P) India
Email: drchvr@gmail.com

Abstract
Analytical solutions for heat transfer in a Newtonian viscous electrically conducting and heat-generating/absorbing fluid in a laminar flow over an inclined permeable surface are presented in this paper. They are solved analytically to the maximum extent possible for dimensionless governing equations. The impact of various involved factors is visually represented and described in depth. A reduction in skin friction can be noted when porosity rises. For a fixed pore size in the fluid bed, the skin friction is always constant and does not change with Grashoff number. The skin friction is shown to be independent of the Schmidt number. As the pore size of the boundary surface grows, the skin appears to become less supple. Furthermore, a rise in the Grashoff number adds to a decrease in skin friction. A consolidated study of all above illustrations suggest that the Schmidt number does not have any influence on the skin friction.

ICEMEA-21-005

Results on Residue Product of Bipolar Fuzzy Graphs

1S.Ragamayi, 2Cheruvu Krishnaveni
1Department of Mathematics,Koneru Lakshmaiah Education Foundation,Guntur, Andhra Pradesh, India.1sistla.raaga1230@gmail.com
2Department of Mathematics,Maris Stella College,Vijayawada, Andhra Pradesh, India.
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Abstract

In this paper, the residue product of two Bipolar fuzzy graphs is introduced. The effective, connected, and complete properties of the residue product are studied. The degree and total degree of a vertex in the residue product of two Bipolar fuzzy graphs are obtained. Also, we exemplified that if two Bipolar fuzzy graphs are regular then their residue product need not be regular. But we examined and specified some conditions under which the residue product of two regular Bipolar fuzzy graphs is regular. Also, it is proved that the lexicographic max product of is the direct sum of the maximal product and the residue product of the bipolar fuzzy graphs if

ICEMEA-21-006

Applications of Graph Theory in Real Life And Computer Science

S. Venu Madhava Sarma R. Sunil Kumar
Department of Mathematics, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Guntur(Dt),
T.V.Pradeep Kumar
Assistant professor of Mathematics, ANU College of Engineeriing, Acharya Nagarjuna University

Abstract

The field of mathematics plays vital role in various fields. One of the important areas in mathematics is graph theory which is used in structural models.This paper aims to emphasize the applications of graph theory in real life andTechnologies. This paper gives an overview *of* applications of graph theory inheterogeneous fields but focuses on Computer Science applications that uses graph theoretical concepts. Various papers based on graph theory have been studied related to computer science applications ,Applications in everyday life and an overview has been presented here.

ICEMEA-21-007

Application of Bi-Polar Fuzzy theory to Ideals in Gamma-Near rings and it's Characteristics

[1]V P Vineela Korada, [2]S. Ragamayi

[1a)] Research Scholar,Department of Mathematics,Koneru Lakshmaiah Education Foundation, Guntur, Andhra Pradesh, India.vineela.korada@gmail.com

[1b)] Department of Mathematics,Dhanekula Institute of Engineering and Technology, Vijayawada, Andhra Pradesh, India.vineela.korada@gmail.com

[2]Department of Mathematics,Koneru Lakshmaiah Education Foundation,Guntur, Andhra Pradesh, India.sistla.raaga1230@gmail.com

Abstract

The ultimate objective of a piece of this research work is to present the notation of Bipolar Fuzzy on Ideals of a Γ-Near ring. Also, we examine the one -one correspondence of Bipolar Fuzzy on Ideals of a Γ-Near ring and Crisp Ideals of a Γ-Near ring. Later, we study about the intersection of two ***BF-I-GNR*** is also a ***BF-I-GNR.*** Further we define homomorphism on ***BF-I-GNR.***The concept of Bipolar Fuzzy set is useful to study the computational framework for cognitive modeling and multiagent decision analysis. Also, it has wide scope and application in neural network, and fuzzy logic stages which are very much essential to detect of epileptiform discharges in the EEG by a hybrid system comprising mimetic in a multistage system.

ICEMEA-21-008

Value Distribution And Uniqueness Of Certain Linear Qc -Shift Operator Of Entire Functions

R. S. Dyavanal and Deepa Angadi

Department of Mathematics, Karnatak University, Dharwad - 580003, India

E-mail: renukadyavanal@gmail.com; deepa.a496b@gmail.com

Abstract:

This paper deals with the problems on uniqueness of linear polynomialin qc-shift operator along with the derivative of entire functions sharing_xed point. our results greatly extends the earlier results of Y. Du, Z.Gao, M. Chen, M. Zhao.

ICEMEA-21-009

Convective heat transfer analysis of an unsteady MHD Casson nanofluid flow on a stretching surface with slip effect under the influence of radiation, chemical reaction

G.Raghavendra Ganesh [1], b, W.Sridhar 2 , T.Hymavathi[3] Shaik Jaffrullah[4]
[1]Department of Mathematics, Dhanekula Institute of Engineering & Technology, Ganguru, Vijayawada, A.P ,521139, India
[1,2,4]Department of Mathematics, Koneru Lakshmaiah Eduacation Foundation, Vaddeswaram, Guntur, A.P,522502, India
[4]Department of Mathematics,Krishna University-Dr.MRAR PG Centre,Nuzivid, Krishna Dist. A.P, India

Abstract

In the present paper an unsteady Casson nanofluid flow on stretching surface consideredalong with Magnetic field, radiation, slip, chemical reaction and heat source effects. Under these assumptions guiding partial differential equations are converted into Ordinary differential equations using adequate similarity transforms. Keller box method was implemented to solve the system of equations numerically. The results of the study and the influences of parameters Casson, Suction, Magnetic, Eckert number, radiation, chemical reaction, heat generation parameters are portrayed in velocity, temperature, concentration profiles using MATLAB. Also the numerical values of Skin friction coefficient, Sherwood number are calculated. It is observed that Sherwood number escalates for progressive values of Brownian motion and Schmidt number whereas reverse trend is observed in case of thermoporesis parameter.

ICEMEA-21-010

The Principles Of Q-Fuzzy Prime Ideals And Q-Fuzzy Maximal Ideals

B.Sailaja1,V.B.V.N.Prasad2
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2 Professor, Department Of Mathematics, Koneru Lakshamaiah Education Foundation, Vaddeswaram, AndhraPradesh, India E-mail ID :vbvnprasad@kluniversity.in

Abstract:

The ingenious work of L.A.Zadeh and Rosenfield paved the way for the fuzzification of algebraic structures.Various mathematicians like Koroki, Wan-Jin-Liu, Malik and Moderson, Mukherjee and Sen made significant contributions in the domain of fuzzy ideals .In this paper we introduce the underlying principles of Q-fuzzy prime ideals and Q-fuzzy maximal ideals and their properties.

ICEMEA-21-011

A Note on New Class Of Balanced Ternary Designs

1Varalakshmi M and 2Rajya Lakshmi K
1Research Scholar and 2Assistant Professor
1,2 Department of Mathematics, Koneru Lakshmaiah Education Foundation (KL deemed to be University), Greenfields, Vaddeswaram, Guntur- 522502, India.

Abstract:
In this paper, following works of Tyagi and Rizwi (1979), Kanna et al. (2018), a new class of second order slope rotatable designs (SOSRD) using balanced ternary designs are suggested. Here we observed that the smaller number of designs points when we compare with the balanced incomplete block designs, Tyagi and Rizwi design points.

ICEMEA-21-012

Forecasting Gold Prices In India Using An Arima Model

Srilekha, N1, Rajyalakshmi K2*, Arumugum P3,
1,3Department of Statistics, Annamalai University, Annamalai Nagar, Chiddambaram, Tamilnadu.
2 Department of Mathematics, Koneru Lakshmaiah Education Foundation, Greenfields, Vaddeswaram, Guntur, Andhra Pradesh, India.

Abstract:
Over the years, the gold prices have been increasing rapidly. Covid-19 and its impact leads to rise in the prices of Gold in 2020. Many factors are responsible for the rise of gold price in India and it leads to investment decisions of individuals and enterprises. Autoregressive Integrated Moving Average (ARIMA) is useful method to forecast the timeseries data. In the present study we mainly focus on the daily prices of Gold from the year 2018 to 2020 to determine and forecast the daily gold prices in 2021. Also estimate the error (%) between the observed and estimated values through ARIMA model. This study will provide the estimates of suitable ARIMA model along with Autocorrelation function (ACF) & Partial autocorrelation function (PACF) to the selected data. The selected secondary source data exhibits the positive trends for understanding the efficiency, quantitative analysis and investment choices of the investors.

ICEMEA-21-013

Effects of Inclined Magnetic Field and Velocity Slip on Three-dimensional Flow of a Micropolar Fluid Over a Nonlinear Stretching Sheet

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Abstract:
This paper aims to present the effects of inclined magnetic field and velocity slip on three dimensional flow of micropolar liquid over a nonlinear elongated sheet with convective boundary conditions. The influences of thermal radiation and temperature dependent heat source are also reckoned. Using similarity transformations the governing partial differential equations are reduced to ordinary differential equations and the nonlinear equations are then solved numerically with the help of shooting technique and Runge – Kutta method. The characteristics of flow variables for different values of various physical variables are elaborated in detail via graphical and numerical presentations. Comparison of the outcome of the current analysis for certain cases is in accordance with the outcomes available in literature.

ICEMEA-21-014

Digital fuel indicators of various automobiles

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Abstract:
Today in digitalized world, if we can make fuel meter in the vehicle as digitalize it will help to know the precise amount of fuel available in the fuel tank. The above embellish fact is considered in our project and we found out a genuine solution for indicating the exact availability of fuel in the tank digitally. Here, we are indicating the amount of fuel in the tank (litres), the valve in litres will be numerical digits .This paper mainly focus on the indication of fuel level in two-wheelers, cars, aero planes various other features like the distance can be travelled to the corresponding fuel also, We can estimate the time it will take to refuel the vehicle and check the quantity of fuel left in the tank in the future. The amount of fuel available in the tank at any position of the vehicle can be forecasted with this digital fuel level indicator device.

ICEMEA-21-015

A Prime Radical for Near-Rings

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Abstract.
Let N be a right near-ring. A prime right N-group is introduced and its properties are studied. Using it a radical for near-rings is introduced and its properties are studied. This radical is a prime radical of near-rings. It is also obtained that this prime radical has good radical properties and in particular it is a Kurosh-Amitsur radical in the class of all zero-symmetric near-rings.

ICEMEA-21-016

A Note On Soft Boolean Near-Rings

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Abstract.
Molodtsov proposed the theory of soft sets, which can be viewed as a useful mathematical instrument for dealing with uncertainty because it avoids the problems that traditional theoretical approaches have caused. The definitions proposed by Ali et al. are used in this paper. In addition, we look at the features of soft Boolean near rings in relation to near-ring mappings, and we show that the structure is conserved even when epimorphisms occur. The main goal of this paper is to broaden the scope of soft Boolean near rings research.

ICEMEA-21-017

Fuzzy Integro-Dynamic Equations On Time Scales

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Abstract.
In this paper, we established the existence and uniqueness of some class of non-linear Fuzzy Integro-dynamic equations on time scales (FIDETs) and also verified the continuous dependence of solutions of FIDET's on initial conditions. Comparison results are also discussed. As an application of comparison results, we proved the global existence.

ICEMEA-21-018

On the Condition for Wave Number in the Stability of Hydromagnetic Swirling- flows

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2Department of Mathematics,University of Technology and Applied Sciences, Sultanate of Oman.

Abstract.
We consider linear stability of a density stratified swirling flows of an incompressible, inviscid hydromagnetic fluid confined between two concentric cylindrical non conducting walls with respect to axisymmetric normal mode disturbances. For this problem, we derived an instability region depending on various parameters. Furthermore, we obtained a condition for stability, namely if wave number is less than or equal to critical wave number implies stability.

ICEMEA-21-019

Fuzzy Logic Approach In Virtual Learning

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Abstract

The learning process is an internal cognitive event. Our society is changing into knowledge and information society with new challenges in all dimensions of our life. One of the challenges will be that we have to continue dealing with E-learning system which have become more persistent in educational context. This paper presents a concept of fuzzy set theory design in an online educational segment, which deal with uncertainties in the knowledge acquisition, representation and decision making. The fuzzy logic principles are used in creating the learner model and to provide the appropriate teaching material to each learner according to his/ her learning level. Fuzzy logic procedure involves three procedures namely fuzzification of all inputs, fuzzy inference process using Mamdani- rule base and a defuzzification system to get output in human understandable form. The fuzzy inference system will stretch the final crisp output.

ICEMEA-21-020

On the Modified Parabolic Instability Region for the Kuo Problem of Hydrodynamic Stability

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Abstract

We consider the study of inviscid, incompressible parallel zonal flows known as standard Kuo problem of hydrodynamic stability. For this Problem, we derived bounds for phase velocity of neutral mode and complex part of phase velocity of an unstable mode. Furthermore, we obtained parabolic instability which intersects with semi-circle instability region under some condition and a criterion for short wave stability.

ICEMEA-21-021

Reliability analysis of 4-component system using Markov technique

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Abstract:
The science of reliability is concerned with the problems of evaluating risks and their consequences. They are always related to some uncertainties based on which certain conclusions drawn. In this paper, Reliability has been modelled for 4-component system by using Markov technique and also Mean Time to Failure (MTTF) has been computed.

ICEMEA-21-022

Effect Of Viscous And Joules Dissipation On MHD Mixed Convective Chemically Reacting Fluid Flow Embedded In Porous Medium With Heat Source And Soret

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Abstract
This paper concerns with study of the steady MHD mixed convective heat and mass transfer flow past an infinite vertical plate in a porous medium with Joules heating and viscous dissipation in presence of chemical reaction, heat source and Soret effect. The basic partial differential equations are reduced to a system of nonlinear ordinary differential equations which are solved analytically using perturbation technique. Numerical calculations for the analytical expressions are carried out and the results are shown graphically. The effects of the various dimensionless parameters related to the problem on the velocity, temperature and concentration fields are discussed in detail.

ICEMEA-21-023

Second Order Interval Integro Dynamic Equations on Time Scales

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Abstract:
In this paper, we consider Interval valued second order Integro dynamic equations on time scales (ISIDETs). Using generalized Hukuhara delta derivative, we studied the existence and uniqueness results of solutions to ISIDETs. To prove this assertion, we use the idea of Banach Contraction Principle. Also, we studied the properties of the sum and H-difference of two Interval-Valued functions on time scales in different possible cases.

ICEMEA-21-024

Chemical Reaction Effects On Mhd Boundary Layer Flow Of A Nanofluid Past A Permeable Stretching Sheet With Slip Boundary Condtions

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Abstract:
The present research work is enthusiastic to examinethe MHD boundary layer flow of a nanofluid with the effects of magnetic field, slip boundary condition, thermal radiation and chemical reaction has been investigated. Similarity transformation is used to convert the governing non-linear boundarylayer equations into coupled higher order non-linear ordinary differential equations. These equationsare numerically solved using fourth order R–K method along with shooting technique. An analysishas been carried out to elucidate the effects of governing parameters corresponding to variousphysical conditions. Numerical results are obtained for the velocity, temperature and concentration,as well as, for the skin friction, local Nusselt number and local Sherwood number for severalvalues of governing parameters. The numerical results are discussed through graphically and discussed qualitatively.

ICEMEA-21-025

Bilateral Generating Relations Associated with Two Variable Generalized Hypergeometric Polynomials

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Abstract:

In this paper, the authors first prove a theorem on bilateral generating relations for a certain two-variable generalized hypergeometric polynomials $R_n(\beta;\gamma;x,y)$ by the group-theoretic technique is introduced by Weisner. It is then shown how the main result can be applied to derive a large variety of bilateral generating functions for various special functions, as well as for their various generalizations. Some results given by other researchers are thus observed to follow easily as special cases of the theorem proved in this paper. It is worth noting that special functions play role in the design of filters and approximation theory in communication engineering

ICEMEA-21-026

Homotopy Perturbation Method For Solution Of Q-Fractional Differential Equations

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Abstract.

In this paper, we present a numerical method for solving nonlinear q-fractional differential equations(q-FDEs). The homotopy perturbation method(HPM) is applied to construct the numerical solutions. Here, we contemplate the q-fractional derivative in the Caputo sense. By employing homotopy technique in topology, a homotopy is build with an installing parameter $p \in (0, 1)$, and is treated as a small parameter. Numerical result is provided. The proposed method is consistently valid for small parameters as well as for large parameters.

ICEMEA-21-027

Numerical solution on MHD Casson and Williamson Nanofluid Flow over a Stretching through a Porous Medium

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Abstract:

In this article, the effect of electromagnetic force with the effect of thermal radiation on the Casson and Williamson nanofluid on a stretching surface through a porous medium was studied. Also, the effect of Brownian motion and thermophoresis coefficients was considered. The system of governing nonlinear partial differential equations is transformed into a system of ordinary differential equations using similarity transformations and nondimensional variables which were subsequently solved numerically by using the Rung-Kutta fourth-order method with shooting technique. Moreover, the effect of the resulting physical parameters on the distributions of velocity, temperature, and concentration of nanoparticles has been studied by using graphical forms with an interest in providing physical meanings to each parameter. Finally, special diagrams were made to explain the study of the effect of some physical parameters on the skin friction coefficient and the local Nusselt number and Sherwood number; these results led to reinforcement in the values of the skin friction coefficient for the increased values of the magnetic field and the Darcy number while the effect on the local Nusselt number by thermal radiation as well as the heat generation/absorption coefficients became negative

ICEMEA-21-028

VAGUE JOIN SEMI L-FILTER OF LATTICE HOMOMORHISIM

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Abstract:-

In this paper contains the properties of vague join semi L-filter of lattice homomorphism. Also we defined g-invariant and established a correspondence between the vague join semi L- Filter of a lattice which are g-invariant and vague join semi L-filter of its homomorphic image.

Keywords: - Vague join semi L-filter, vague join semi L- filter lattice, Vague join semi L-filter of lattice homomorphism.

Mathematics Subject Classification (2000): 08A73

ICEMEA-21-029

Significance of Lorentz Force and Viscous Dissipation on Surface Drag Force and Heat Transfer Rate: A Statistical Approach with Propylene Glycol – Water based Hybrid Nanofluid

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Abstract

The boundary layer flow due to a slendering needle with irregular thickness is a topic of greatest practical importance as it has been utilized in many areas of science and engineering including biological sciences and industries. Among heat transfer liquids, Propylene Glycol-water solution is utilized in solar collectors. Thus any development in thermo-physical attributes of PG – water combination is probably going to best of straight forwardly to melioration in solar energy aggregation. With these things in mind, An attempt is made to scrutinize the significance of viscous dissipation and chemical reaction on PG – Water based hybrid nanofluid flow over a moving slender needle with Ohmic heating. Governing mathematical model is metamorphosed as a system of ODEs and then solved by using MATLAB. Outcomes are explicated through graphs. A statistical tool was used to confirm the impact of pertinent parameters on transfer rates and surface drag force. It is worth concluding that magnetic field parameter and Eckert number are having significant negative association with heat transfer rate. There is a significant positive association among chemical reaction parameter and mass transfer rate. Fluid temperature ameliorates with larger Eckert number and surface drag force diminishes with larger magnetic

field parameter. Furthermore, it is detected that the fluid concentration gets ameliorated with the raise in the order of chemical reaction.

ICEMEA-21-030

Thermo hydrodynamic Lubrication Analysis of Rolling/Sliding Line Contact by Bingham Plastic Fluid

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Abstract

This research work emphasises the qualitative analysis of hydrodynamic non-Newtonian lubrication of asymmetric rollers under usual boundary conditions for a heavily loaded rigid system under the operating behaviour of rolling and sliding line contact. The viscosity of incompressible Bingham plastic fluid is assumed to vary with hydrodynamic pressure. The fluid flow governing equations such as continuity with momentum equation and thermal energy equation are solved analytically first and then numerically using MATLAB. Some important characteristics of the roller bearings are elaborated through graphs and tables. Finally, it is concluded that a significant change in pressure, temperature, load and traction with Newtonian and non-Newtonian fluids is observed. The results are in good agreement with the results available in literature.

ICEMEA-21-031

New Inferential Procedures for Nonlinear Models

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Abstract

A model may be considered a mathematical description of a physical, chemical or biological state or process. Many models used in Applied Mathematics and Mathematical Statistics are nonlinear in nature. In Statistics, nonlinear regression is a form of regression analysis in which observational data are modeled by a function which is a nonlinear combination of the model parameters and depends on one or more independent variables. The data are fitted by a method of successive approximations.One of the major topics in the literature of Theoretical and Applied Mathematics is the estimation of parameters of nonlinear regression models. A perfect model may have too many parameters to be useful. Nonlinear regression models have been intensively studied in the last three decades. In this research article, an attempt has been made by developing some new inferential techniques for estimating parameters and testing nonlinear hypotheses on them of nonlinear regression models. Moreover a new test for the problem of heteroscedasticity in nonlinear regression model has been derived by using iterative NLLS internally studentized residuals.

ICEMEA-21-032

Heat and Mass transfer effects on MHD Casson nanofluid flow with variable properties in the presence of porous stretching sheet

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Abstract:

This study elucidated the dynamics of Casson nano fluid with chemically reactive and thermally conducting medium past an elongated sheet. The flow model consisted of partial differential equations (PDEs). These set of PDEs were transformed into ordinary differential equations. The transformed equations were numerically solved by utilizing the Runge-Kutta method along with shooting techniques. The effect of pertinent flow parameters were represented using graphs while computations on engineering quantities of interest are tabulated. A higher value of the visco- inelastic parameter (Casson) were found to degenerate the velocity profile. A higher value of the unsteadiness parameter (A) is found to degenerate the boundary layer distributions.

ICEMEA-21-033

Dominating Set of Fuzzy And Anti-Fuzzy Graphs Using Algorithms

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Abstract

In this paper, we discuss about a dominating set D in a fuzzy graph F and anti-fuzzy graph F_A. The bounds on domination number of anti-fuzzy graph are obtained. Fuzzy matrix is defined on anti-fuzzy graph. Some properties of adjacency fuzzy matrix are discussed. Using strong adjacency matrix, algorithm is formulated for finding a minimal dominating set of an anti-fuzzy graph F_A and by using strong neighborhood fuzzy matrix, an algorithm is described to predict the total dominating set for F_A.

ICEMEA-21-034

Effects of Thermophoresis And Chemical Reaction On MHD Wedge Flow Of A Casson Nanofluid

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Abstract

In the current article, The Effects of thermophoresis, melting process and chemical reaction on MHD wedge flow through porous medium of a Casson nanofluid were investigated. The effects of Brownian motion and thermal radiation and are also taken into consideration. The nonlinear Partial differential equations that govern the nano fluid flow are reduced to nonlinear ordinary differential equations by using similarity transformation technique. RK-Fehlberg with shooting technique is employed to solve the transformed system of partial differential equations by using MATLAB software. The influence of magnetic parameter, Casson fluid parameter, Radiation parameter, nanoparticles volume fraction and heat source parameter on temperature profiles, concentration profiles and velocity profiles are plotted and examined. Numerical results for the effects of different pertinent parameters on local skin friction coefficient,local Nusselt number and Sherwood number were tabulated.

ICEMEA-21-035

Interval Integro Dynamic Equations On Time Scales Under Generalized Hukuhara Delta Derivative

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Abstract:

This paper is devoted to study the local existence and uniqueness results for interval valued integro-dynamic equations on time scales (IIDETs) using Banach contraction principle under generalized delta derivative (Δg-derivative).

ICEMEA-21-036

Cartesian Product On Interval-Valued Fuzzy Ideals And Interval-Valued Fuzzy Bi-Ideals Of A Ternary Γ-Semigroup

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Abstract.

The purpose of the article is to study about Cartesian product of interval-valued fuzzy set of a ternary Γ-semigroup and we characterize interval-valued fuzzy ternary Γ-semigroup, interval-valued fuzzy left(resp. right, latral) ideal and interval-valued fuzzy bi-ideal of a ternary Γ-semigroup in terms of Cartesian product of interval-valued fuzzy ternary Γ-semigroup, interval-valued fuzzy left(resp. right, latral) ideal and interval fuzzy bi-ideal are also discussed.

ICEMEA-21-037

An Improved Extragradient Method for Solving pseudo-monotone Variational Inequalities

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Abstract.

Variational inequalities have been extensively studied in the literature and continues to attract intensive research due to its applications in a broad range of mathematical and applied sciences as well as in the theoretical and algorithmic foundations of mathematics. Several iterative methods have been proposed and analyzed by many authors for solving the variational inequality problem. The purpose of this paper is to study and analyze a new extragradient method for solving non-Lipschitzian and pseudo-monotone variational inequalities in real Hilbert spaces. Under suitable conditions, strong convergence theorem of the proposed method is established. The results established generalize some known results in literature.

ICEMEA-21-038

On The ψ - Conditional Stability Of Linear Matrix Difference Equations

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Abstract

It is provided (necessary and) sufficient condition for ψ - Conditional stability of trivial solution of the linear or nonlinear matrix difference equation.

ICEMEA-21-039

MHD Casson fluid Flow over a Vertical Porous Stretching Plate in the presence of Thermal Non-Equilibrium Model

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Abstract

An analysis is performed to study the influence of local thermal nonequilibrium (LTNE) on MHD laminar boundary layer flow of viscous, incompressible fluid over a vertical porous stretching plate embedded in a thinly packed Casson fluid in the presence of heat generation/absorption. A uniform heat source or sink is presented within the solid phase. By applying similarity analysis, the governing partial differential equations are transformed into non-linear coupled ordinary differential equations and solved numerically by Runge-Kutta Fehlberg method along with shooting technique. The obtained results are displayed graphically for the influence of various physical parameters on the velocity, temperature profile and heat transfer rate for both fluid and solid phases. Furthermore, the numerical results obtained during this study are compared with the prevailing literature within the case of LTE and found results that they are in good agreement.

ICEMEA-21-040

An Application of Bi-Polar Fuzzy on Bi -ideals of a Gamma-Near ring

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Abstract

The ultimate objective of a piece of this research work is to present the notation of Bipolar Fuzzy on Bi-ideals of a Γ-Near ring. Also, we examine the one -one correspondence of Bipolar Fuzzy on Bi-ideals of a Γ-Near ring and Crisp Bi-ideals of a Γ-Near ring. Later, we study about the intersection of two ***BF-BI-GNR*** is also a ***BF-BI-GNR.*** Further we define homomorphism on ***BF-BI-GNR.*** The concept of Bipolar Fuzzy set is useful to study the computational framework for cognitive modeling and multiagent decision analysis.

ICEMEA-21-041

Process Capability And Parametric Analysis Of Statistical Data Using Design Of Experiments

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Abstract:

Design of experiments (DOE) widely used in many fields namely agricultural, aerospace, oil, automotive, aircraft industries to seek the optimal solutions. DOE can solve single response and multi response problems through few tests. Taguchi method suggests orthogonal array (OA) and provides the range of estimates. The present paper mainly focused on the significant effect of the various process parameters on output response. Here we identify the relation between variables and their contributions with the help of Analysis is of variance (ANOVA). Statistical conditioning helps us to consolidate the data of repeated trials. Process capability index determined the expected range of output response. The optimum set of parameters are obtained by using the design of experiments methodology and R software. Empirical relations are presented to check the quality aspects of the selected process parameters. Comparative study indicates reasonably good agreement between empirical relations and test results.

ICEMEA-21-042

Solving Fuzzy Dynamic Equations on Time ScalesUsing The Fuzzy Laplace Transform Method

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Abstract

In this paper, we develop the calculus of fuzzy Laplace transforms on time scales T for the fuzzy valued functions of real variables on T whose values are convex, upper semi-continuous, normal, and compactly supported fuzzy sets in R. We study the fundamental properties and related theorems which help to establish the relation between the fuzzy Laplace transforms of a fuzzy valued function on T and generalized Hukuhara delta derivative to solve first order fuzzy dynamic equations on T.

ICEMEA-21-043

Measure of soft sets over subsets of R

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2. Professor of Mathematics, TKR college of Engineering and Technology, Hyderabad.
3. Professor of Mathematics, Jawaharlal Nehru Technological University, Kakinada.

Abstract

A Soft set over X ⊂ R with respect to a parameter set E is a collection of ordered pair of elements {(e, F(e)) / e∈ E} where F(e) ⊂ R. The outer measure and the measure of a soft set are defined by considering the measurability of each F(e) in the sense of Lebesgue. The parameter set of the soft set is considered as a countable set and the properties of measure of the soft set are investigated. The limit of measure of measurable soft sets is calculated by taking in to consideration of the uniform convergence of the sequence of the sums of the series $\{\Sigma(\infty n=1 Fn(ek))\}$ with respect to k.

ICEMEA-21-044

Simulating of Harmonization Kernel Ideal Nearby Fuzzy Assumed Complemented Semi lattice

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Abstract

This manuscript illustrates several principal results concerning congruence kernels of fuzzy pseudo complemented semi lattices will also hold in sectionally fuzzy pseudo complemented semi lattices. Also it presents necessary and sufficient conditions such that any subset of sectionally fuzzy pseudo complemented semi lattices which satisfies these conditions is kernel of some congruence. It institutes the notion of kernel ideal in sectionally fuzzy pseudo complemented semi lattice, as well it establishes a condition for * congruence of sectionally pseudo complemented semi lattice with kernel ideal.

ICEMEA-21-045

Outliers Detection Using Data Mining Techniques For Rainfall Data

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Abstract

Outlier means points lie outside the normal data. Outlier plays important role in model fitting. If outlier is involved in data, models may be over fitted or under fitted. Detection of outlier is important for fitting the best model to data. In data mining techniques for detection of outliers DBSCAN Clustering method, Isolation Forest etc. are used. In this paper for rainfall data for detection of outliers DBSCAN clustering method is used. After detecting outliers we removed that and we run regression models of data mining techniques like Linear Regression, k-Nearest Neighbors, Decision Tree, Support Vector Machines and Multi-Layer Perceptron using WEKA software. Using Mean absolute error, Root mean square error criterion, we choose the best model among five regression algorithm of data mining techniques for rainfall data.

ICEMEA-21-046

Piece Wise Regression For Atmospheric Data

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Abstract.

There are numerous regression models in literature and some of them are simple linear regression, multiple linear regression, polynomial regression, Cubic Regression, Stepwise Regression, Ridge Regression, Lasso Regression, Elastic Net Regression, Negative Binomial Regression, Poisson Regression, Partial regression, Principal Component Regression etc. Generally regression gives single fit for total data. Splines or piecewise regression gives two or more regression lines for data using knots. In this paper we are fitting trigonometric piecewise regression, Polynomial piecewise regression and cubic piecewise regression for Atmospheric data. Best among these three piecewise models is estimated using Symmetric mean absolute percentage error.

ICEMEA-21-047

Mediating Role of Lean Practices on the relationship between Employee Involvement and Employee Achievement in SMEs

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Abstract

In the current era of technology-driven, the adoption of new tools and techniques became vital to produce goods with minimum resources and low wastage. One promising method for addressing this issue is the application of lean management practices. It is found that the main aim of implementing lean is to adjust people and systems in order to deliver the best value to the customer through waste elimination. The study carried out to assess lean practices and its role on the relationship between Employee Involvement towards Productivity. A sample of 55 SMEs (Small and Medium Enterprises) was selected randomly from the Guntur and Tenali regions of Andhra Pradesh. The Cronbach's Alpha of the instrument obtained to be as 0.916 showing consistent and reliable.Descriptive statistics, Bivariate Correlation, and Mediation Analysis were performed to test for empirical evidence.The study showed a positive relationship between Techniques in Production and the Employee Involvement and Achievements Results, but the Lean Techniques in Production are not significant and does not have any impact on employee

involvement. The findings lend support to Implement lean practices properly to improve performance leading to more productivity.

ICEMEA-21-048

A Study Of The Financial Health Of The Telecom Sector (A Study On Select Telecom Companies In Andhra Pradesh)

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Abstract

One of the fastest growing telecom sectors is Indian telecommunication sector and become the world second largest network to china. This sector underwent a high pace of market liberalization and growth since 1990s. Major sectors of the Indian telecommunication industry are the telephony, internet and television broadcasting. The telecommunication services offered by this telecommunication industry are easily accessible at affordable prices to the customers of urban areas and rural areas of India. India's telecom network encompasses highly unique technology in the world. Government has encouraged the sector to penetrate in the country by adopting the appropriate policies. There are 10 million monthly subscribers in Indian. The operating performance depends on certain financial factors. A close relationship is established between the variables, a firm can analyze its financial performance in terms of liquidity, profitability, viability and sustainability. So, the study concentrates on empirical approach towards impact of privatization of telecom industry.

ICEMEA-21-049

Chromatic Polynomial of Intuitionistic Fuzzy Graphs Using α-Levels

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Abstract:

An intuitionistic fuzzy set assigns a real number between 0 & 1 inclusive to objects in a subset of a certain universal set. It was designed to describe an object with both degrees of membership and non-membership functions. An intuitionistic fuzzy graph is defined based on intuitionistic fuzzy relation. Coloring of an intuitionistic fuzzy graph is applied in many real life applications like traffic light control, register allocation, clustering analysis. Its chromatic polynomial provides the number of ways of coloring, which indicate the number of alternatives in its application. This article introduces a novel notion of the chromatic polynomial of an intuitionistic fuzzy graph based on the α-levels of the intuitionistic fuzzy graph. In addition, certain properties of the chromatic polynomial of the intuitionistic fuzzy graph are stated and proved.

ICEMEA-21-050

Blood Inventory Management: A Research Perspective on Optimal Policies

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Abstract

Background: Blood is one of the most essential components of human life. The role of blood is crucial importance due to its irreplaceable role in clinical treatment, as there is no complete substitute for human blood. The fixed life products may reserve in stock to satisfy when the unpredictable demand arises. Blood comes under perishable products as it has a maximum shelf-life of 42 days when it is extracted from the human body. Hence it is necessary to maintain inventory for blood and blood products. **Objectives:** The proposed model comprises three categories such as ordering, issuing and disposal policies to minimize the wastage and shortage on blood and its components. This research article focuses on optimal policies on efficient blood inventory management.

ICEMEA-21-051

A Lot Size Model with Distinct Effects of Deterioration and Perishability when the Received Lot Contains Defectives

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Abstract:

Inventory is the basis of any industry. It may be at different levels of business activities. Somewhere it is called raw material, some where it is called as work in progress, somewhere it is called as stock on shelf. There is huge amount of capital in the form of working capital is pumped into the business. The management of inventory depends on several factors like demand and supply of inventory, planning of inventory, storage of inventory, life of inventory, price of inventory offered in the market. The most important thing is acceptance by the consumer of the inventory, and this is because when consumer decides to buy, he offers cost and price to the seller or business house or producer etc. So, it is important that a well-planned inventory at every level of business is very important. It is equally important to know the nature of inventory and desire of the consumer to buy. Further to say the business models have been changing very frequently and new models are coming up every day. Competition has further become tough between the companies and with in the industry. The profit margin has become very thin and under this circumstance the only option left for the industries is to use good costing techniques, storage technique, issue technique to minimize the wastages and maximize the efficiency of production and reduce the burden of transfer of losses and wastages by following good technique of different methods of inventory issue and management.

ICEMEA-21-052

Decomposition Of Bipolar Vague Finite State Machines and transformation Semigroups

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Abstract

In numerous viewpoints managing bipolar data is fundamental.In this paper we deal with bipolar information and present the idea of decomposition of (BVFSms)bipolar vague finite state machines and transformation semigroups(TSGs) and researched some of their fundamental arithmetical properties

ICEMEA-21-053

Special Situation Where The Outer Measure Via Order Preserving Valuation On A Partial Lattice Obeys The Outer Measure Generated By Measure

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Abstract:

This paper is motivated by GABOR SZASZ's introduction of outer measure based on valuation for lattices. We introduce order-preserving valuation on a partial lattice of the lattice, a countable cover of an element in a partial lattice, outer measure induced by a valuation of a partial lattice, ɲ* measurability and to establish certain elementary properties of induced outer measure via order preserving valuation on a partial lattice. After that by defining the definition of outer measure on partial lattices of a lattice L induced by a measure ɲ on Q of partial lattices of L, measure on algebra of partial lattices and outer measure of partial lattices, we prove $L(\mathscr{B})$ is a sigma-algebra where $L(\mathscr{B})$ is the class of ɲ* measurable partial lattices and deduce a corollary that ɲ*(A) = ɲ(A), also we prove that outer measure to any subset E of a partial lattice $A \in Q_{\sigma}$ and outer measure to partial lattice $B \in Q_{\sigma\delta}$ are equal. Finally, by defining sigma-finite measure on Q and ɲ* generated by ɲ we prove a partial lattice E is measurable ɲ* if and only if E is the proper difference A ~ B of a partial lattice A in $Q_{\sigma\delta}$ and a partial lattice B with ɲ*(B)=0. Further each partial lattice B with ɲ*(B)=0 is contained in a partial lattice C in $Q_{\sigma\delta}$ with ɲ*(C)=0.

ICEMEA-21-054

Changes in land use statistics of Tamil Nadu, India

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Abstract.
The study entitled "Changes in land use statistics of Tamil Nadu, India" analysed the structural changes in land use pattern in Tamil Nadu for a period of three decades. The entire study period is divided into three phases i.e., Phase-I (1990-91 to 1999-2000), Phase-II (2000-01 to 2009-10) and Phase-III (2010-11 to 2019-20). Nine-fold classification of land-use pattern is considered for the study. The data were analysed by using Compound Annual Growth Rate, Cuddy-Della Valle Instability index and Markov chain Analysis. Area under Current fallows and Net area sown showed negative compound annual growth rate in all the three phases. On contrary, Area under non-agricultural uses and Fallow lands other than current fallows showed positive growth rate over the years in all the three decades. During the Phase-I, the most stable land-use categories are Net area sown, Land under miscellaneous tree crops & groves and Area under non-agricultural

uses and the least stable category is Permanent pastures & other grazing lands. During the Phase-II, Area under non-agricultural uses, Forests, Net area sown, Barren & unculturable land are the most stable categories and Land under miscellaneous tree crops & groves is the least stable category. Whereas Culturable waste land, Barren & unculturable land, Current fallows are unstable land-use categories and all the remaining categories are stable during the Phase-III. Government should take initiative in developing policies for sustainable land management.

ICEMEA-21-055

Trigonometric Spline Method for Boundary Layer Differential Difference Equations with Mixed Shifts

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Abstract
In this research, we propose a numerical method for singularly perturbed boundary layer differential-difference equations with delay and advanced parameters using trigonometric spline with a special mesh. The discrete equation is determined by applying the continuity condition to the first order derivatives of the trigonometric spline. This approach works well when the shift parameters δ and η are of o(ε) or O(ε). We presented maximum errors for standard examples taken from the literature, as well as a graphical representation of the effect of the shift parameters on the layer or oscillatory behaviour of the solution.

ICEMEA-21-056

On Fuzzy Neutrosophic Supra Continuous Mappings In Fuzzy Neutrosophic Supra Topological Spaces

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Abstract
In this paper, we introduce the fuzzy neutrosophic supra Neighborhood (FNSNHD) and local base and base and also we introduce fuzzy neutrosophic supra subspace in fuzzy neutrosophic supra topological spaces (FNSTSs)and also we extend the concept of neutrosophic continuous mappings into fuzzy neutrosophic supra continuous mappings (FNS – continuous) and study its some of properties. Furthermore we introduce FNS – r – continuous, FNS – almost continuous and FNS – completely continuous mappings in fuzzy neutrosophic supra topological spaces and also show examples, properties.

ICEMEA-21-057

On FNSβ - CONNECTEDNESS IN FUZZY NEUTROSOPHIC SUPRA TOPOLOGICAL SPACES

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Abstract

In this paper, the concept of various types of fuzzy neutrosophic supra β - connected and fuzzy neutrosophic supra β- totally disconnected in fuzzy neutrosophic supra topological spaces are introduced and studied. Here we introduce the concepts of fuzzy neutrosophic supra βC_5 - connectedness, fuzzy neutrosophic supra βC_S - connectedness, fuzzy neutrosophic supra βC_M – connectedness, fuzzy neutrosophic supra β - strongly connectedness, fuzzy neutrosophic supra β - super connectedness, fuzzy neutrosophic supra βC_i - connectedness (i = 1, 2, 3, 4), and obtain several properties and some characterizations concerning connectedness in these spaces.

ICEMEA-21-058

Soft Intersection Boolean Near Rings And Its Applications

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Abstract

In this study, we use the intersection operation of sets to define soft intersection Boolean near-ring (soft int BNR). This new notion can be seen as a link between soft set theory, set theory, and near-ring theory, as it demonstrates how a soft set affects a near-ring structure via set intersection and inclusion. Then, using illustrative instances, we deduce its basic features. Furthermore, we find several soft int Boolean near-ring analogues of classical near-ring theoretic ideas, as well as applications of soft int Boolean near-ring to near-ring theory.

ICEMEA-21-059

Heimenz Nanofluid Flow with Pressure Gradient Explode with Carbon Nanotubes

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Abstract.
This paper reveals to get numerical solutions of Hiemenz nanofluid flow explored with carbon nanotubes beneath homogeneous and heterogeneous reactionns. we tend to contemplate the steady flow at a large distance from the stagnation point to be potential flow. Viscous and potential flow has been incorporated during this study to estimate the impact of pressure is given in Bernoulli's equation. Python with BVP convergent thinker is employed to resolve the Navier Stokes equations numerically by appropriate transformations. Interpretations are finished totally different values of thermophysical parameters are represented through graphs.

ICEMEA-21-060

Integral representations of two variable generalized hypergeometric polynomials

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Abstract.
The main aim of this paper is to study some properties of two variable generalized hypergeometric polynomial of the set $R_n(\beta;\gamma;x,y)$, as addition and multiplication formulae and we derive this polynomial can be represented as some integral representations like contour integral, real integral, infinite single and double integral and finite single and double integral representations. These results can be suitably applied to obtain many additional applications, including known and unknown hypergeometric functions.

ICEMEA-21-061

Steady State Analysis Of Fluid Queue Regulated By Retrial Queue Conditioned By Quasi Birth Death Processes

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Abstract:
The paper approaches the stationary analysis of fluid retrial queue examined by quasi birth and death process. Initially, formulating the set of differential equation for retrial queues with non-persistent customers to generate the infinitesimal generator matrix and then analyze the fluid queue over retrial queue in the Laplace function interms of modified Bessel function of first kind. Numerical illustration is given to validate the equation of the proposed model.

ICEMEA-21-062

Bingham Plastic Fluid Flow Analysis Between Two Moving Infinite Parallel Plates

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Abstract
In this paper, the velocity and Temperature effects are analysed between two parallel plates in the presence of Bingham plastic fluid. The upper and lower parallel Plates are thought to be travelling in the same direction and at the same speed. The incompressible two-dimensional flow between two parallel plates is examined using Bingham plastic fluid. The temperature and velocity profile are studied by solving the simultaneous system of nonlinear equation. In three cases, the impact of the temperature profile is explored. The equations formed by motion, continuity and energy equation are solved using conventional analytical techniques and then fourth order Runge-Kutta method was used to solve the problem numerically. The result for velocity and temperature is obtained and present graphically with respect to various physical parameter. The goal of this research is to look into the influence of pressure and temperature on various fluid parameters. Finally, a comparison with a number of previously published results was reviewed.

ICEMEA-21-063

Evaluation of Water Quality using Analytic Hierarchy Process Technique

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Abstract

One of the important issues in the present-day scenario is the lack of availability of potable water. This is mainly due to the encroachment of water catchment areas, riverbanks and canals. The proposed study is to predict the quality of water of the Buckingham Canal in Chennai. An Analytic Hierarchy Process (AHP) is one of the techniques of Multi Criteria Decision Making which has the structure of hierarchy to determine a goal, criteria and alternatives. AHP has the ability to provide with the most appropriate solution for the current decision. In this paper an AHP method is used to model the ranking of the results of the quality of water.

ICEMEA-21-064

Assessment of Air Quality using TOPSIS Technique

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Abstract

Air pollution is one of the greatest environmental threats to human health. India is a country where people of different cultures celebrate different festivals. The celebration of some of the festivals especially Bhogi leads to environmental pollution. The objective of this paper is to analyze the air pollution level in different areas of Chennai city during Bhogi festival in the period 2019 to 2021. In this study, an entropy method was used to determine the weight of each attribute (parameters) and a MADM Technique TOPSIS (Technique for Order Preference by Similarity to an Ideal Solution) was used to rank the alternatives (areas).

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ICEMEA-21-065

TANTRA – An Optimal Ones Assignment Method For Solving Unbalanced Assignment Problems

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Abstract: In this article, a new technique namely 'Tantra', which is a simplified form of the existing Ones Assignment Method (OAM) of solving assignment problems, finds the optimal

solution to a given unbalanced assignment problem (UAP). In the OAM, it is required to convert the given UAP into a balanced one by introducing one dummy row or column with 1 unit of effectiveness in each cell. But, the 'Tantra' technique can be applied directly on the given UAP without converting it into a balanced one. The technique requires only row minimum division operation or only column minimum division operation depending on the size of rows and columns in order to have at least one 1-entry in each of the required number of rows and/or columns only. The assignments are made on the appropriate 1-entry cells of the reduced ratio of costs matrix. To test the validity and effectiveness of the 'Tantra' technique, 20 benchmark instances with different sizes from the literatures have been tested. Simulation results authenticate that the technique 'Tantra' is the best one which produces optimal solution to all 20 instances. Therefore, it is clever to apply the 'Tantra' technique to solve the UAPs as it is very simple, easy to understand, easy to apply and consume less time in comparison to the existing OAM.

ICEMEA-21-066

Heat and Mass transfer effects on MHD Casson and Williamson nanofluid flow in the presence of viscous dissipation

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Abstract

In this paper, the current researcher investigates the effects on MHD casson and Williamson nanofluieds in the presence of thermal radiation and chemical radiation are considered list of governing PDE along with boundary conditions were reduced to diamonds less forms by using the similarity transformation. The numerical solutions of the problem obtained by using the fourth order Runge - Gutta method in line with the shooting technique. It is found that the increase in both the magnetic parameter and radiation parameter decrease the heat transparent and increases the mass transparents. It is further observed that increase in the porosity parameter and magnetic field reduces in the skin friction, heat and mass transparents. The results of this study were compared with some previous publisher and some restrictions and they are found in good argument.

ICEMEA-21-067

MHD Casson-Carreau nanofluids flow with Cattaneo - Christov heat flux model.

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Abstract

The primary goal of this research is to examine the Cattaneo-Christov heat flux model on the impacts of mass and energy transit of MHD Casson-Carreu nanofluid through an accelerating

permeable vertical plate with Soret and Dufour mechanism. Non-Newtonian fluids flowed through the porous vertical plate to reach the boundary layer in this investigation. In order to understand the physical model, partial differential equations are used (PDEs). To create a linked nonlinear set of ordinary differential equations, we reduced this set of PDEs by using similarity variables. SHAM, a spectrum basis technique, was utilized to solve these modified equations in order to understand the physics of the issue. A good method is to utilize SHAM to decouple the coupled nonlinear ODE systems and divide them into linear and nonlinear equation sets since this helps to separate the systems. As a result, the two non-Newtonian fluids (Carreu and Cassin) flow together through the vertical wall and into the boundary layer, where different parameters' impacts are scrutinized. The current results showed that an increase in the Casson parameter (β) degenerates the velocity and the total thickness of the boundary layer. Increase in the Weissenberg number (We) on the other hand, raises the velocities and temperatures in both directions. Additionally, increasing the Soret and Dufour parameters sped up the velocity graph.

ICEMEA-21-068

On Multiplicative (Generalized)-Left Derivations In Semi Prime Rings

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Abstract

In a Semi-prime ring R. If F(xy) = x F(y) + yd(x) for all x,y ∈ R then the map F: R→R is called a Multiplicative (generalized) – Left derivation . Where d : R→R is any map (not necessarily derivation). The main objective of the present paper is to study the following situations. (1) If F(xy) – xy = 0 $\forall\, x, y \in I$ then Id(I) = 0 and F(xy) = xF(y) $\forall\, x, y \in I$ then F is a commuting map on I (2) If F(xy) –yx = 0 $\forall\, x, y \in I$ then [I, I]I = 0 and Id(I) = 0 and F(xy) = xF(y) $\forall\, x, y \in I$ then F is a commuting map on I (3) If F(xy) –xy ∈ Z $\forall\, x, y \in I$ then I [d(x), x] = 0 $\forall\, x \in I$

ICEMEA-21-069

The Influence Of Thermophoresis And Thermal Stratification On Nano Fluid Over A Stretching Sheet

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Abstract

The influence of thermal and mass stratification on MHD mixed convective boundary layer flow of a Nano fluid over a stretching sheet in the presence of thermophoresis, thermal radiation and chemical reaction is studied. Variables of similarity are induced to transmute partial differential equations into dimensionless equations and solved numerically by elegant method bvp4c. The numerical solutions for velocity, temperature, and concentrations are discussed for different values of critical parameters.

ICEMEA-21-070

Pseudo-Completion Of Censored Samples And Reliability Estimation In Log - Logistic Distribution

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Abstract

A log-logistic distribution with known shape parameter ($\beta = 3$) as suggested by Balakrishnan *etal.* (1987) is considered. Estimation of the scale parameters for a known shape parameter from Type-II censored samples is studied on lines of Whitten *etal.* (1988). In view of this, a given censored sample is made into complete sample by Pseudo completion method and used such a Pseudo complete sample to estimate the reliability function of a Log-Logistic distribution and is compared.

ICEMEA-21-071

Discrimination Between Rayleigh And Gamma Models

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Abstract

Two popular models Rayleigh and Gamma (shape 2) distribution are considered to verify whether one can be an alternative to other. The cumulative distribution function of gamma (shape 2) is not analytically tractable where as for Rayleigh distribution is tractable which is the motivation for the study. In general, analytical tractability of cumulative distribution function is an advantageous situation in the study of problems of inference. The percentiles and power of the proposed test statistics also tabulated and a comparison done with respect to the powers for a given sample and level of significance.

ICEMEA-21-072

Computational and Analytical Study of Debye Temperature in Organic fluid mixtures

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Abstract

Acoustical parameters of organic liquid mixtures over different mole fractions and at different temperatures have been evaluated. An analogy of these parameters with effective Debye temperature variations scrutinized to bring out the molecular association due to thermal energy changes of binary liquid mixture. Debye temperature variations are used to explain the behavior of component molecules of liquid mixtures and these studies are helpful in heat transfer and mass effect phenomenons,

ICEMEA-21-073

Some Properties Of Ideals And Congruences In Lattice Ordered Loops

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Abstract
This manuscript illustrates some important properties of normal subloop, l-ideals and congruence relations in lattice ordered loops

ICEMEA-21-074

Some Other Bilateral Relations For Generalized Hypergeometric Function

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Abstract
In previous article, we discussed bilateral relation for generalized hypergeometric function with modified generalized Sylvester polynomial and quoted some of its applications as special cases. Now, in this article it has been discussed some more applications for it in continuation to it.

ICEMEA-21-075

Some finite integrals involving the modified generalized of multivariable I-function of Prasad

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Abstract
The aim of this paper is to establish some finite integrals involving the products of modified multivariable I-function, the Jacobi polynomials and a general class of polynomials. At the end of this document, we shall make several remarks.

ICEMEA-21-076

The Minimum Absolute Deviation Covering Distance Energy of Graphs

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Abstract
The covering energy of graph is first introduced by C. Adiga [1] and later the imum covering distance energy $\mathbb{E}_{CD}(G)$ is defined by M. R. Rajesh Kanna, B. N. Dharmendra [3]. Now we are introducing the minimum absolute deviation covering distance energy $\mathbb{E}_{CD}^{M}(G)$ of a graph G corresponding to the minimum covering **C**. For any graph G of order with A_{CD} as its minimum covering distance matrix, if $c_1, c_2, ..., c_n$ are the Eigan values of A_{CD} and $\bar{c}$ is their average, then the minimum covering distance energy[2,3] of graph is $\mathbb{E}_{CD}(G) = \sum_{i=1}^{n} |c_i|$. The minimum absolute deviation [4,5] covering distance energy of G is then defined as $\mathbb{E}_{CD}^{M}(G) = \sum_{i=1}^{n} |c_i - \bar{c}|$. We derived the results on Minimum absolute deviation covering distance energy of few standard graphs and the bounds of $\mathbb{E}_{CD}^{M}(G)$ also established.

ICEMEA-21-077

Daily Activities During The Covid Pandamic

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Abstract
Covid-19 has turned the world on its head, causing dramatic alterations in people's lives. The study's major goal is to learn about people's attitudes toward online classes/jobs, their daily routines and Covid measures/precautions they take on a daily basis. All of these conclusions were reached by statistical analysis of original data gathered through a questionnaire and an online survey. The report contains the most comprehensive and small-scale investigation into

how people perceive the impact of the COVID-19 issue on many elements of their lives based on daily activities. The results of the investigation were also shown in terms of an individual's eating habits, sleep pattern, physical activity, stress/ anxiety levels, work involvement, social media/ phone usage, and productivity. The information was gathered from a sample of 503 people who completed a structured questionnaire using Google forms utilising a suitable random sampling procedure. The data was analysed and hypotheses were tested using reliable statistical tools such as descriptive statistics, chi-square test, z-test, ANOVA with R programming, and MS-Excel. It was discovered that about half of the people are fairly productive; a small percentage of the population believes they are not productive, and the majority of the population never engages in any type of exercise. When people go out, they are cognizant of wearing a mask. The majority of them consume immunity-boosting foods. Most people are least interested in online classes/ related employment due to their health and other issues, and instead prefer to kill their boredom by helping with household tasks. Many people suffer from stress and anxiety.Many of them are adhering to Covid's safety precautions and lockout rules. This study is unique in that it covers all of the activities that an individual can engage in on a daily basis during the Covid epidemic.

ICEMEA-21-078

Heat And Mass Transfer Effects Of Darcy – Forcheimer Model With Activation Energy

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Abstract

In this paper, the influence of activation energy with Darcy – Forchheimer flow MHD viscous fluid is studied. A set of equations are dealt numerically and discussed with the aid of graphs. The impact of Maxwell parameter, Magnetic field parameter, Inertia coefficient, porous parameter, Prandtl number on temperature field, velocity profile and concentration field are observed. The physical aspects of the problem are highlighted and discussed.

ICEMEA-21-079

Edge Irregularity Strength Of Trees Generated Caterpillars

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Abstract

For a simple graph *G*, a vertex labeling $\varphi : V(G) \to \{1,2,\cdots,k\}$ is called *k*-labeling. The weight of an edge *uv* in *G*, denoted by $w_\varphi(uv)$, is the sum of the labels of end vertices *u* and *v*. A vertex *k*-labeling is defined to be an edge irregular *k*-labeling of the graph *G* if for every two different edges *e* and *f*, $w_\varphi(e) \neq w_\varphi(f)$. The minimum *k* for which the graph *G* has an edge irregular *k*-labeling is called the edge irregularity strength of *G*, denoted by *es*(*G*). In this paper, we compute the edge irregularity strength of trees generated from the set of caterpillar trees whose edge irregularity strength is known.

ICEMEA-21-080

A Markovian analysis for Occupational Mobility

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Abstract:
In this paper, we made an attempt to study the social mobility of selected professions. For this study we collected primary data and analyzed the data using Markov chain models. To study the behavioural pattern of occupational mobility we evaluated stationary distribution. The distribution of father and their sons for different professions from primary data have evaluated. Our findings are presented in this paper.

ICEMEA-21-081

Influence Of Thermoporosis And Double Stratification On Nonaligned Stagnation Point Flow Of A Nano Fluid Past A Porous Stretching Sheet

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Abstract

In the present study properties of heat and mass transfer phenomena of hydro magnetic stagnation point flow of radiadive casson fluid resulting from porous extending sheet in doubly stratified medium is studied. Effect of thermophoresis, heat source /absorption and chemical response has been extensively studied. By inducing variables of similarity the basic equations are transmuted into dimensionless equations and are resolved mathematically using Runge- Kutta – Fehlberg shooting technique method. Magnetic parameter, heat source parameter and thermal radiation parameter escalates temperature. However, a contrary effect with thermal stratification number, Prandtl number and the velocity ratio parameter are also noticed. Impact of Skin friction coefficient, Nusselt number and Sherwood number of the flow for diverse values of pertinent parameters are studied. Arithmetical results that obtained in the present study are confirmed with the published outcomes.

ICEMEA-21-082

Reduction of CO2 Emissions to Decelerate and Reverse Global Warming using Mathematical Model

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Abstract

Understanding the problem of Future Global Carbon dioxide Emissions and arranging for the mitigation of these emissions through the regulation of human activities and the development of greenery in surroundings. This is to provide climate policy makers with smooth patterns of global carbon dioxide (CO_2) emissions consistent with the UN climate targets. It needs an accessible mathematical approach to understand the problem. Global Warming is expressed in time to determine when the climate targets will be hit in case of no climate change mitigation. Based on secondary data using mathematical knowledge, this is an exponential model for the rapid reduction and long-term stabilization of Co2 emissions slightly above zero. Then, suitable interpolations are performed to ensure a smooth and flexible transition to the exponential decline, further projecting the future CO2 emissions status and take necessary remedial measures to control climate hence making the world a better Place

ICEMEA-21-083

Brinkman flow of a viscous liquid past a prolate spheroid with a uniform streaming at infinity

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Abstract

In this paper, we study the Brinkman flow, under Stokesian assumption, past an impervious prolate spheroid and obtain the expressions for the velocity and pressure fields in terms of

Legendre functions, Associated Legendre functions, prolate radial and angular spheroidal wave functions. We further obtain an expression for the drag experienced by the spheroid and numerically study its variation with respect to the flow parameters and display the results through graphs.

ICEMEA-21-084

Optimal operating policy of a two-phase service, N-policy Markovian gated queueing system with state dependent arrival rates and unreliable server

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Abstract
We analyze a two-phase, service N-policy M/M/1 gated queueing system with state dependent arrival rates, server breakdowns and delayed repair. In this two-phase service system, waiting customers receive batch service all at a time in the first phase and proceed to the second phase to receive individual service in FIFO mode. The server is turned off each time the system empties. As and when the queue length exceeds the threshold N batch service starts. Arrival rates of the customers depend on the state of the server. Arrivals during the batch service are not allowed to join the same batch which is already in batch service. The service station may breakdown during any phase of service and there may be delay in repair due to non-availability of repair facility. Governing equations of the model are developed and solved to obtain some performance measures of the system. Sensitivity analysis on the optimal threshold N and the minimum expected cost for various values of the system parameters and cost elements through numerical experiments.

ICEMEA-21-085

Selection of Significant Features And Prediction Of Red Wine Quality Using Logstic Regression

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Abstract
As the consumption of red wine is increasing, it is necessary to understand and determine the quality of red wine. The quality of red wine is determined by various chemical factors. There is a need to understand and analyze the relationship between these various factors determining the quality of red wine and predict the quality of red wine based on the historical data. For a statistical analysis the secondary data is taken from Viticulture Commission of the Vinho Verde Region (CVRVV), Porto, Portugal from UCI Machine Learning Repository. Here, first 80% values were used for training and 20% values were used for testing. Modeling was based on regression analysis and predicted the quality of red wine. The Area Under the ROC Curve (AUC) value for the best fit model of quality was obtained as 0.73. R Software was used for

understanding, analyzing and interpreting the results. The findings reveal that through the use of Multicollinearity diagnosis, we understood and stimulated the significant independent variables that determine quality. Using those variables in training data set we could find a best fit model to predict the quality of wine. The fitted model was applied on the test dataset, predicted values were accurate and it met the expected results. The study's novelty is the fitted model can be used to predict the quality of wine easily as the testing of wine quality is a complicated task for laboratories to perform various tests and analyses them.

ICEMEA-21-086

Effects Of Heat And Mass Transmission With Radiation On MHD Nanofluid Flow Past Over An Oscillating Plate In The Presence Of Chemical Reaction

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Abstract
In this paper, the present study investigates the consequences of heat and mass transfer on MHD Alumina nanofluid flow past over an oscillatory plate with Chemical reaction and radiation. Using similarity transformations, dimensional partial differential equations are converted into non-dimensional equations and solved using Laplace Transformation. The effects of parameters of Prandtl number (Pr), Thermal Grashof number (Gr), mass Grashof number (Gc), magnetic parameter (M), Chemical Reaction Parameter (K_1), radiation (R), solid volume fraction (ϕ), phase angle (ω) of velocity, temperature, and concentration profiles are scrutinized. The depicted graphs are shown the enhancement of the velocity, temperature, and concentration profiles. It observes that an increment of magnetohydrodynamic diminishes the velocity, an increment of thermal and mass Grashof number leads to an increase in velocities, and increasing radiation reduces the temperature. An increment of Schmidt number diminishes the concentration of the alumina nanofluid. The Concentration of the fluid decreases with an increase in chemical reactive parameters.

ICEMEA-21-087

Thermal properties for the Magneto hydro dynamics Cu-Al_2O_3 hybrid nanofluid flow over a moving plate

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Abstract

The present paper is focused on the MHD hybrid nanofluid flow with heat transfer on a moving plate with Joule heating and thermal radiation. The combination of metal (Cu) and metal oxide (Al2O3) nanoparticles with water (H2O) as the base fluid is used for the study. Similarity transformation reduces the complexity of the PDEs into a system of ODEs, which is then solved numerically using the function bvp4c from MATLAB for different values of the governing parameters. This study is important in determining the thermal behaviour of Cu-Al2O3/H2O when the physical parameters like magnetic field, Thermal radiation and Joule heating are embedded. The results are new and original with many practical applications in the modern industry.

ICEMEA-21-088

Unsteady MHD flow of Casson hybrid nanofluid over an infinite exponentially accelerated vertical porous surface under Radiation.

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Abstract.

In this paper,The radiative unsteady magnetohydrodynamic (MHD) flow of an incompressible viscous electrically conducting non-Newtonian Casson hybrid nanofluid over an infinite exponentially accelerated vertical moving porous surface under the influence of slip velocity in a rotating frame has been investigated. Water and ethylene glycol mixture have been considered as a base Casson fluid. A steady homogeneous magnetic field is applied under the assumption of low magnetic Reynolds number. The ramped temperature and time varying concentration at the surface is made into consideration. First order consistent chemical reaction and thermal absorption are also considered. Silver and Titania nanoparticles are disseminated in base fluid water and ethylene glycol mixture to be formed as hybrid nanofluid. Keller Box technique is employed on the non-dimensional governing equations for the closed form solutions. For non-dimensional shear stress, rates of heat and mass transfer are evaluated. The graphical representations are presented to validate the results.

ICEMEA-21-089

Purging Of Redundant Info And Establishing Data Integrity In Cloud Systems

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Abstract

Now a days we can see rapid increase of the data that we are gathering in storage device(s), to store these we are using many techniques and providing security .In storage device(s) where we can store a large data which reduces the same amount of servers .sometimes the customers want to check the integrity of the data at a low cost, where the cost depends on proportion and the data. To attain all these goals secured de-duplication and integrity auditing we had undergone and studied .To delete the unnecessary or duplicate files we had provided a high security. Keywords: de-duplication, integrity, storage services, auditing, trusted party.

ICEMEA-21-090

Statistical modeling of temperature in Krishna district using Copula analysis

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Abstract

Objective: To examine the relationship between temperature and precipitation in Krishna district and to forecast temperature. Krishna is a district in Andhra Pradesh's Plateau region, and it was chosen because it is a densely populated area with significant towns and ports. The district's climate is tropical, with extremely hot summers and somewhat mild winters. **Methods and Statistical analysis:** From 1901 to 2019, data was obtained from the Indian Meteorological Department in Pune. For training, data from 1901 to 1996 was used, while data from 1997 to 2019 was used for testing. Through Copula analysis, a model is built keeping in view the relationship between Temperature and Precipitation. The Mean Absolute Percentage Error (MAPE) and Normalized Root Mean Square Error (NRMSE) for the best model in Krishna were determined to be 0.03 and 3.823 for the month of May, which has the highest temperature and precipitation dependency when compared to other months. Similar analysis is carried out for the months in which dependency is significant. It is found that four months interdependency coefficient is insignificant. The data was analysed using R-software and IBM SPSS statistics version 25 and the results were interpreted. **Findings:** For different datasets, the best Copula does not have to be the same. Based on AIC and BIC criteria, the best Copula for Krishna was Rotated Gumbel 90 Copula for the month of May. Temperature simulated data was found to be very close to testing results. **Novelty:** For Krishna district in Andhra Pradesh, the Plateau region, this type of analysis and model fitting is not found in the literature. Temperature in this location may be accurately predicted using our fitted models.

ICEMEA-21-091

MHD Influence On Second Order Fluid Flow Over An Inclined Permeable BED

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Abstract

On an inclined porous surface, the effect of MHD on the flow of a second-order fluid has been studied. We will look at several graphs to see how different factors affect things. There is a direct correlation between rising magnetic intensity and increased cutaneous friction. As a result, the bounding surface does not present any barrier to fluid motion at lower values of time and magnetic field and also the porosity of the bounding surface The skin's friction reduces with time, regardless of the porosity or strength of the magnetic field being applied to it. The fluid exhibits skin friction on the bounding surface when the magnetic field is applied for a short period of time, but when the field is applied for longer periods, the opposite occurs. When the magnetic field and porosity remain constant over time, skin friction diminishes. When the porosity of the fluid bed is maintained constant and the applied magnetic field is increased, the skin friction increases. Slightly more flexibility and a weaker applied magnetic field result in more skin friction than a more rigid one. Additionally, for fluids with constant viscoelasticity, increasing the time parameter reduces skin friction.

ICEMEA-21-092

N-Policy $M^x/E_k/1$ Vacation Queueing System With Server Start-Up And Time-Out

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Abstract

This paper deals with an infinite capacity bulk arrival Erlangen service N-policy vacation queueing system with server start-up and time-out. We model the system steady state equations and obtained expected number of units in the system by using probability generating functions at different states of the system and formulated total operating cost equation for the designed model. Obtained an optimal threshold N, also obtained optimal number of units in the system and optimal operating cost.

ICEMEA-21-093

Shear Stress And Heat Generation Effects On Unsteady MHD Casson Fluid Flow Past An Inclined Porous Plate

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Abstract

The present study narrates the unsteady MHD Casson fluid flow past an inclined porous plate under the influence of shear stress and heat generation. The phenomena were modeled by the equation of continuity, momentum and energy equation. Analytical solutions for the non - dimensional velocity and temperature are obtained with the aid Laplace transform technique. The influence of different critical parameters on the flow phenomena was discussed and displayed graphically.

ICEMEA-21-094

A Triangular Fuzzy And Ridit Approaches For Measuring The Dimensions Of Service Quality Of Grocery Stores

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Abstract

Nowadays the retailing sector has become one of the most challenging sectors in India. Retailers are in constant fear of losing customers specially Grocery retailers. It has become mandatory for them to put the focus on service quality. Perceived service quality is positively related to customer satisfaction which ultimately leads to customer loyalty. Keeping in view, the various fundamental effort has been made in this study to identify various dimensions of service quality that affects the shoppers of the grocery store. Further, the study attempts to prioritize the dimensions along with the items to draw meaningful conclusions for the grocery store managers. The study analyzed the survey responses of 435 grocery store customers. This study employed two different techniques, one of which is the fuzzy triangular approach and the other is a RIDIT ranking technique to establish the relative priority of each item of the grocery store customers. The study concluded that as per the expectations of the customers “Tangibility” is the most important and “Empathy” the least important dimension of service quality. In terms of customers’ perception, “Tangibility” has been given the highest ranking whereas “Responsiveness” has been ranked least. The significant sub-dimensions of customers' perception and expectations has been prioritized as the first ranked item is updated equipment in

the grocery stores (TA1), the second expected priority of the grocery store customers is the employees generate information easily obtainable to customers (RN1). The third highest expected service quality item is they to do, if what they promise (RL1). Finally, the least important expected service quality item by the grocery store was stores have their customers' interest at heart (EM4). The fuzzy approach and RIDIT ranking technique provide almost the same priority ranking.

ICEMEA-21-095

Homomorphism On Bipolar Fuzzy D-Algebra

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Abstract.
In this paper, we study the concept of homomorphism on bipolar fuzzy subalgebra of d-algebra and We prove that the anti-homomorphic image and inverse anti homomorphic image of a bipolar fuzzy subalgebra of X is also a bipolar fuzzy subalgebra of X. Also, we prove that there is a one-to-one correspondence in between bipolar fuzzy characteristic subalgebra and characteristic subalgebra.

ICEMEA-21-096

Multi-Fuzzy Fields And Multi-Fuzzy Vector Spaces

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Abstract
The notion of multi-fuzzy fields and multi-fuzzy vector spaces were introduce and study some algebraic properties and order homomorphism as bridge function for the multi-fuzzy extension of functions of the same.

ICEMEA-21-097

Solution for Fuzzy Wave Equation under Granular Differentiability

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Abstract.

In this work, the wave equation in fuzzy environment under granular ifferentiability (gr – differentiability) is investigated. A fuzzy wave equation is considered with fuzzy initial and boundary conditions. Applying the Horizontal membership function (HMF) and granular derivatives the fuzzy wave equation becomes a granular differential equation, which is solved using the separation of variables technique. The solution of the fuzzy wave equation is obtained from the inverse HMF of solution of granular differential equation. Finally, some examples are presented to illustrate the results.

ICEMEA-21-098

Solvability for One-dimensional Fuzzy Heat Equation under Granular Differentiability

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Abstract.

This paper deals with obtaining solution of one dimensional (1D) fuzzy heat equation under granular differentiability (gr – differentiability) using fuzzy separation of variables technique. A 1D fuzzy heat equation is considered with fuzzy initial and boundary conditions. Applying the Horizontal membership function (HMF) the 1D fuzzy heat equation becomes a granular differential equation, which is solved using the method of separation of variables. The solution of the 1D fuzzy heat equation is obtained from the inverse HMF of solution of granular differential equation. The examples are given to illustrate the procedure described for solving 1D fuzzy heat equation.

ICEMEA-21-099

Internet of Things: Applications in Healthcare Industry

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Abstract.
The Internet of Things (IoT) is an ecosystem that integrates smart objects equipped with sensors, networking, and processing technologies with the end user environment. IoT efficiently integrates physical object software and hardware to interact with each other. With various applications in the present demanding scenario, IoT is leading with numerous benefits in the healthcare domain. With smart services being equipped with IoT, healthcare services are showing promising results to utilize every opportunity anywhere and anytime. From glucose level sensing to oxygen saturation monitoring to ECG monitoring IoT provides its significant role in sensitizing the controls and data recording. This paper also focuses on the IoT architecture in Healthcare sector to monitor and collect related data and concludes with data storage in cloud and computation capabilities. From the literature it was observed that the most challenging situation faced by the organizations is privacy and security of the data stored.

ICEMEA-21-100

A Critical Review on implementation of 5S and Six Sigma in Textile Industry

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Abstract

Purpose – The purpose of this paper is to review quality management literature comprising of Lean management, Six Sigma in textile industry.

Design/methodology/approach – This paper highlights the implementation of quality management practices and improvement in the productivity through extensive literature review

Findings – The literature survey has confirmed that a clear dependency upon the commitment of top management and leaders of the business unit through support and optimized resource allocation for reducing waste, thereby improving quality, reducing cost of production and ultimately increasing customer satisfaction

Practical implications – implementing TQM across is a process with a number of iterations before tasting the fruit of success. It is an approach, focusing on detailed formulation of strategies undertaken towards successful organizational improvement through enhanced innovation.

Originality/value – this paper provides a mode of viewing quality through excellence model along with lean and six sigma principles with customer as the primary focus for the business.

ICEMEA-21-101

Bipolar Fuzzy Γ-Semirings

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Abstract.
In this paper, we introduce and study the concept of Bipolar fuzzy Γ-semiring, and we characterize bipolar fuzzy Γ-semiring to the crisp Γ-semiring. Further, we discuss the relation between bipolar fuzzy Γ-semiring and their level cuts. Also, we prove that the homomorphic image and inverse image of a bipolar fuzzy Γ-semiring is a bipolar fuzzy Γ-semiring.

ICEMEA-21-102

On α - Vague Groups

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Abstract.
In this paper we introduce and study the notions of α- Vague set , α - Vague groups and α-Vague normal groups. We prove a necessary and sufficient condition of α-Vague group (normal group) to be Vague group (normal group), and study some of their properties.

ICEMEA-21-103

Stochastic Forecasting Analysis for *Gossypium arboreum* Production in India

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Abstract
This paper describes an empirical study of stochastic forecasting analysis for time series data of *Gossypium arboreum* (Cotton) productions in India. The Box Jenkins ARIMA methodology has been applied for forecasting. The diagnostic checking has shown that ARIMA (2,1,2) is appropriate. The selected model have to be considered for the forecasts from 2019 to 2023. These forecasts would be useful for the policy makers to take necessary action for the future requirements of suitable measures in this regard. Based on the chosen model, it could be predicted that *G. arboreum* production would increase to 31.63 million tons in 2023 from 28.71 million tons in 2018.

ICEMEA-21-104

A common fixed point theorem in b-metric space with special reference to (E.A.) property

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Abstract

Many authors have proved fixed point theorems for fuzzy metric space with E.A property.In this paper we prove a fixed point theorem and some results for mappings satisfying (E.A) −property in b−metric spaces.

ICEMEA-21-105

A Study of Digital Financial Literacy among the College Students In Visakhapatnam

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Abstract.

Worldwide, Digital Financial Literacy Has Been At The Forefront Of Debate. It Is Generally Possible To Describe Digital Financial Literacy As The Ability Of An Individual To Understand, Analyse, Handle And Communicate Topics Related To Personal Finance Through Digital Platform. More Precisely, The Collection Of Skills And Expertise Is Referred To That Allows A Person, Through Their Understanding Of Finance, To Make Informed And Effective Decisions. It Is The Potential For Making Judgments And Takes Effective Decision Regarding The Use And Management Of Money. The Trend Now Is To Adjust Financially, Old Wine People Are Switching To Digital Financial Literacy Through Literacy. More Interesting Is The Interesting Side Of Digital Financial Literacy. The Value Of Internet Banking, Debit Card & Credit Card, Mobile Banking Are Going High, People Are Going From Digital Payments. Indian Ones Digital India Is Also Being Promoted By Government Recently This Study Analyzes The Level Of Digital Financial Literacy Among College Students In Visakhapatnam. It Examines How The Level Of Digital Financial Knowledge Influences Students' Opinions And Decisions On Personal Finance Matters.

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ISBN 978-93-5607-681-5