SOUVENIR

NATIONAL CONFERENCE

ON
ADVANCEMENT IN MATHEMATICS & ITS EMERGING AREAS

AIMEA-2K21

TMU
TEERTHANKER MAHAVEER UNIVERSITY
MORADABAD

Organized by

DEPARTMENT OF MATHEMATICS
FACULTY OF ENGINEERING & COMPUTING SCIENCES
TEERTHANKER MAHAVEER UNIVERSITY, MORADABAD

National Conference on Advancement in Mathematics & its Emerging Areas

23-24 July, 2021

Souvenir
AIMEA-2021

Organized

by

Department of Mathematics

Faculty of Engineering & Computing Sciences

Teerthanker Mahaveer University

Delhi Road, NH-24, Moradabad (UP)

India-244001

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About The University

The Teerthanker Mahaveer University has been established by an 'Act' (No. 30) of 2008 of the Government of Uttar Pradesh and is approved by the University Grants Commission (UGC) vide letter No. F. 9-31/2008(CPP-1) dated October, 2008. The University is located on National Highway-24, Bareilly 144 Km from New Delhi. The University stands committed to the ideals of Lord Mahaveer- Right Philosophy, Right Knowledge, and Right Conduct - in all the spheres of activity and aspire to be recognized as the ultimate destination for world class education. The multi-disciplinary University offers career-oriented courses at all levels, i.e., UG, PG and Doctoral degrees across diverse streams, namely, Medical, Dental, Pharmacy, Nursing, Paramedical Sciences, Physiotherapy, Hospital Administration, Education, Physical Education, Engineering, Architecture, Polytechnic, Management, Law, Journalism, Fine Arts, Jair Studies, and Agriculture Science to meet rising aspirations of the youth.

The University provides a unique environment for students to grow under the guidance of experienced academicians. The highly committed team facilitates all round development of students to help them acquire the ability of lifelong learning and to make them competent professionals as well as good human being.

About The College

Established in 2008, the Faculty of Engineering & Computing Sciences has emerged as a hub for academic excellence in engineering & science. The college contributes to quality education in all major disciplines of engineering & science and meet the needs of industry for trained technical manpower with practical experience and sound theoretical knowledge. The College has nine operational academic departments with more than a hundred full time faculty members. The college offers programs at bachelor, post-graduate and doctoral level, covering major branches of engineering science and technology. Experts from various areas are invited for interaction with the students. The college has entered into partnerships with leading universities and industries in India and abroad.

About The Department

The department gives emphasis on trying and developing Mathematical and Engineering problems which besides providing an opportunity to generate power for voluntary thinking, brings in a student the desirable mental habits such as precision, ability to concentrate and handle abstract concepts. With the mission in hand to organize specific seminars, symposia and Conferences aimed at offering significant and landmark results of value and potential for future work to our students and faculty. We have produced several researchers of eminence with great scholarship of creative values in different fields of the subject. The topics on which seminars are being conducted at present by the department include all the interdisciplinary areas of Science & Technology.

Programs

- **B.Sc. (H) Mathematics :**

  The objectives of the programme are to train students to handle problems in industries and government organizations through the combined use of mathematical and computer techniques.

- **M.Sc. Mathematics :**

  The programme imparts the necessary knowledge of numerical and computational techniques, various topics in mathematical modelling, simulation, probabilistic and statistical tools, and trains students to develop their own research ideas.

- **Ph.D.**

  Ph.D. Program offers an exciting and unique opportunity to students for pursuing research in several areas of Mathematical Sciences. Admission is made twice a year in January and July.

Specializations:

- Analysis, Algebra, and Cryptography
- Mathematical Modelling
- Fluid Mechanics, Biomechanics and Mathematical Biology
- Computational Fluid Dynamics
- Fuzzy Topology and Fuzzy & Soft Set Theory
- Nonlinear Waves
- Operation Research
- Optimization Theory
- Wavelet Analysis and Distributions
- Graph Theory and Network Sciences
- Differential Geometry & Tensor Analysis
- Cosmology / General Relativity

Faculty Members:

- Dr. Ajit Kumar, Head & Associate Professor
- Dr. Vipin Kumar, Associate Professor
- Dr. Laxami Kant Tiwari, Associate Professor
- Dr Abhiinav Saxena, Associate Professor
- Dr. Alok Kumar Gahlot, Assistant Professor
- Mr. Ashok Kumar, Assistant Professor
- Dr Kamesh Kumar, Assistant Professor
- Dr. Gopal Kumar Gupta, Assistant Professor

About The Conference

The "Advancement in Mathematics and it's Emerging Areas (AIMEA-2021)" is a wide forum for mathematicians and scientists who work in the expanding interdisciplinary areas of analysis and applied analysis, and its applications. This academic event is to provide a forum to presenting and sharing new ideas, techniques and alternative technologies in the field of Mathematics and Engineering. The conference will feature keynote and invited talks by renowned academicians, researchers, scientists of National repute. The conference will provide an opportunity to present theoretical, experimental and visionary research papers.

Objective of Conference

The main objective of Advancement in Mathematics and ifs Emerging Areas (AIMEA-2021) is to provide forum for the researches, eminent academicians, research scholar and students to exchange ideas, to communicate and discuss research findings and new advances in mathematical sciences, Engineering and technology. The conference would also enable participants to explore possible avenues to foster academic. The conference will give opportunity to both academicians as well as research scientists to communicate and discuss problems and their applications for industry sector. At the end of this conference, the participants will be enriched and motivated. It will help them to improve their research skills in the area of Mathematics, Engineering and Technology.

Preface

We take this opportunity to welcome you all to the Souvenir of the National Conference on Advancement in Mathematics & it's Emerging Areas (AIMEA-2K21).

The objective was to bring eminent the academicians, scientists, researchers, industrialists, technocrats, government representatives, social visionaries and experts from all strata of society, under one roof, to explore the new horizons, of innovative technology to identify opportunities and defining the path forward. This new path should eliminate isolation, discourage redundant efforts and promote scientific progress aimed to accelerate India's overall growth to prominence on the international front and contribute effectively to realize and achieve the India 2022 mission of being a Development Nation. The conference will feature paper presentation sessions, invited talks, keynote addresses, panel discussions and poster exhibitions and has attracted researchers and practitioners from academia, industry and government agencies, in order to exchange ideas and share their valuable experiences.

We are grateful to a number of people without which we would not have been able to successfully organize this mega event, in such a short period of record time. On behalf of the Organizing Committee, we thank to many esteemed authors for having shown confidence in us and considered AIMEA-2K21 a platform to share their work. We wish to express our gratitude to our focused and dedicated team of Convener, Co-conveners, members of the Advisory Committee, Organizing Committee, Technical Committee and Local Organizing Committee and finally our students for being a great source of strength to us in making this event successful.

We consider ourself fortunate to get such a dedicated and ever supporting team.

We are personally thankful to our Principal, Prof. (Dr.) R K Dwivedi, who was always a constant source of technical guidance, as and when we needed.

Finally, we are thankful to one and all, who have contributed directly or indirectly in making this seminar successful.

Last but not the least, we take this opportunity to give the credit of successfully bringing out this Souvenir to our team, one and all, and personally own the responsibility of all the errors, deficiency and shortcomings.

In the last, we are thankful to Almighty God for giving us strength in successful organization of this conference.

Dr. Gopal Kumar Gupta
Organizing Secretary
AIMEA-2K21

Message

I feel extremely happy and delighted to know that the Faculty of Engineering & Computing Sciences is organizing a National Conference on Advancement in Mathematics & it's Emerging Areas on 23 – 24 July 2021 (AIMEA-2K21).

It is a leap forward to put Faculty of Engineering & Computing Sciences is on the national map where the scientists, engineers and researchers from all over the country will converge and exchange their ideas for the growth of knowledge. Faculty of Engineering & Computing Sciences is thriving vigorously to move along the glorious path of academic excellence since its existence. This is providing opportunity to the students and faculties alike to excel in Education, Knowledge, Research Innovation, Skill and Patent, which are the main tools in nation building.

I hope that participants will immensely benefit from the academic exchange of views & thoughts.

I wish this conference a great success.

Prof. (Dr.) R K Dwivedi
Principal
Faculty of Engineering & Computing Sciences
TMU, Moradabad

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on

Advancement in Mathematics and its Emerging Areas

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Abstract

National Conference on Advancement in Mathematics & its Emerging Areas
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MATHEMATICAL MODELLING ON PERISTALTIC MOTION AND TEMPERATURE DISTRIBUTION OF DUSTY JEFFREY FLUID UNDER THE INFLUENCE OF VARIABLE VISCOSITY

K.R. Madhura[1], D S Swetha[2]
[1]Post Graduate Department of Mathematics, The National College, Jayanagar, Bangalore-560070, Karnataka, India & Trans - Disciplinary Research Centre, National Degree College, Basavanagudi and The Florida International University, USA
[2]Department of Mathematics, PES University, Bangalore-560085, Karnataka, India

The peristaltic flow and heat transfer over a planar channel under the influence of different variable viscosities have been analyzed. The mathematical model for the flow of fluid and dust phases are presented through linear momentum and energy equations. To reduce non-linear partial differential equations, small wave number and low Reynolds number approximations are employed. The solutions are obtained analytically for velocity and temperature distributions, volume flow rate, pressure rise and then upshots of the investigation are visualised through graphical elucidation. Based on different pressure ranges, the fluid flows are classified into free pumping, retrograde pumping and co-pumping regions. Furthermore, the effect of different parameters like variable viscosity, number density of the dust particles and amplitude on these regions are discussed.

FIBONACCI EDGE PRODUCT CORDIALGRAPHS

[1]Tessymol Abraham, [2]Shiny Jose
[1]Assistant Professor, Department of mathematics, Baselius College, Kottayam, 68600, Kerala, India
[2]Associate Professor, Department of Mathematics, St. George's College, Aruvithura, 686122 Kerala, India

An injective function $\psi: E(G) \rightarrow \{1, F_2, \ldots, F_m\}$, where Fj is the jth Fibonacci number $(j = 1, \ldots, m)$, is said to be Fibonacci edge product cordial labelling if the induced vertex labelling function $\psi^* : V(G) \rightarrow \{0, 1\}$ defined by $\psi*(v)=(\psi(e_1)\psi(e_2)\ldots\psi(e_m)$ mod2 where $e_1, e_2,\ldots e_m$ are the edges incident to v satisfies the condition $|e_{\psi*}(0) - e_{\psi*}(1)| \leq 1$. A graph which admits Fibonacci edge product cordial labelling is called Fibonacci edge product cordial graph. In this paper we investigated the Fibonacci product cordial labelling of some graph families.

Keywords - Fibonacci Product Cordial Labelling; Fibonacci Product Cordial graph.

DISTANCE OPTIMIZATION BETWEEN DISTRICTS OF KARNATAKA, ONE OF THE STATES OF INDIA USING FLOYD-WARSHALL ALGORITHM

K. R. Madhura[1], J Kavya S Holla[2]
[1]Post Graduate Department of Mathematics, The National College, Jayanagar, Bengaluru, Karnataka, India
[2]Trans - Disciplinary Research Centre, National Degree College, Basavanagudi, Bengaluru, Karnataka, India and The Florida International University, Miami, FL, USA

The current work describes the Floyd-Warshall algorithm and presents an application of the algorithm in finding the shortest distance and the shortest route between the districts of Karnataka state, India for tourism. The algorithm has been efficiently applied to 30 nodes (which represents the districts of Karnataka state). By using the distance matrix and node sequence matrix obtained after applying the Floyd-Warshall algorithm, the shortest distance and the corresponding route to travel between the pairs of nodes are evaluated. Finally, a detailed discussion about the distance and route between pairs of nodes are presented.

ANALYSIS OF PERISTALTIC FLOW OF RABINOWITSCH FLUID IN A NON-UNIFORM CHANNEL: ANALYTICAL APPROACH

C. RAJASHEKHAR1, G. MANJUNATHA2, HANUMESH VAIDYA3, K. V. PRASAD4, B. B. DIVYA5,
J. SARASWATI6,

1Bhaskaracharya Study Chair, Karnataka State Akkamahadevi Women's University, Vijayapura-586108, Karnataka, India

2, 5Department of Mathematics, Manipal Institute of Technology, Manipal Academy of Higher Education, Manipal, Karnataka,576104, India

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The present paper examines the impact of heat and mass transfer on the peristaltic flow of Rabinowitsch fluid flowing through a non-uniform channel. The effects of slip and variable fluid proper-ties are taken into an account. The impacts of wall rigidity, wall stiffness, and viscous damping force parameter are considered. The equations governing the flow are rendered dimensionless by using a suitable similarity transformation. The governing equations of momentum, motion, energy, and concentration are solved by utilizing long wavelength and small Reynolds number approximation. The MATLAB 2019a programming has been used to obtain the solutions for velocity and concentration profiles. The series solution technique has been utilized to get the expression for temperature. The influence of relevant parameters on velocity, temperature, concentration, and streamlines are examined for viscous, shear thinning, and shear thickening fluid models. The examination uncovers that a rise in the value of variable viscosity and variable thermal conductivity improves the velocity and temperature profiles for Newtonian and pseudo plastic fluid models. Moreover, an increase in the volume of the trapped bolus is seen for an expansion in the estimation of the velocity slip parameter for all the three considered models.

Keywords– velocity slip, thermal slip, concentration slip, wall rigidity, wall stiffness, viscous damping force parameter.

WAVELETS ON SOBOLEV SPACES

Abhishek Kumar Pandey

Department of Mathematics, North Eastern Regional Institute of Science and Technology, Nirjuli,

791109, Arunachal Pradesh, India.

The Generalized Wavelet transform is studied on the Sobolev type space $B_k^{\omega}(R^n)$. Boundedness results in this Sobolev space is obtained. Compactly supported wavelets on distribution space are also studied. Approximation properties of the generalized wavelet transform will also be discussed.

Key Words: Sobolev space, Fourier transform, Wavelet transforms.

SOME PROPERTIES OF TENSOR PRODUCT OF INTUITIONISTIC L-FUZZY GRAPHS

Tintumol Sunny, Department of Mathematics, Christ College, Irinjalakuda, Thrissur, Kerala, India

We define Tensor product of two intuitionistic L-fuzzy graphs and study some of its basic properties. We introduce regular and totally regular intuitionistic L-fuzzy graphs and show that the tensor product of two regular ILFGs is again a regular ILFG. We also study some totally regular properties of Tensor product of two ILFGs

Keywords: Tensor product of two intuitionistic L-fuzzy graphs, L-fuzzy degree of a vertex in an ILFG, regular ILFG, L-fuzzy degree of a vertex in tensor product.

APPLICATION OF CARDANO PENTAGONAL FUZZY NUMBER IN DECISION MAKING PROBLEMS

Anju Thomas, Dr Shiny Jose, Dr Sonia K Thomas,

Department of Mathematics, St.Thomas College Palai.

St. George's College Aruvithura, Kerala, India,

Alphonsa College Pala, Kerala, India.

This paper targets to propose the application of Cardano Pentagonal fuzzy number in solving Diverse Criteria Decision-Making problems which are multi-dimensional. A novel algorithm called Cardano fuzzy Additive Weighting Algorithm is proposed to solve such problems and it is demonstrated through a case study also.

Keywords: Cardano Pentagonal fuzzy number, Pentagonal fuzzy number, Multi – dimensional multi criteria decision making problems, Cardano fuzzy Additive Weighting Algorithm.

NOVEL TSALLIS HDE MODEL WITH HYBRID EXPANSION LAW

Dr. Nitin Sharma, Assistant Professor, Department of Mathematics, ADP College, Nagaon-782002,

Assam, India

Here we have expounded the Bianchi type VI_0 metric consists of Tsallis holographic dark energy (THDE) and dark matter (DM). We have solved field equations by using hybrid expansion laws for the cosmological scale factor. It has been found that the universe becomes homogeneous, flat, and isotropic at later times. From the equation of state (EoS) parameter analysis, it is noticed that our model acts as lamda Cold Dark Matter (Λ) model at the late stage of time.

Keywords: Tsallis holographic dark energy model, Bianchi type VI_0, Hybrid expansion laws

BOUNDARY LAYER FLOW OVER A MOVING PLATE IN A NANOFLUID WITH VISCOUS DISSIPATION IN A SATURATED POROUS MEDIUM

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In this paper boundary layer flow over a moving plate in a nanofluid with viscous dissipation in a saturated porous medium is investigated. The governing nonlinear partial differential equations have been converted into system of nonlinear ordinary differential equations using appropriate similarity transformations. Effect of vital parameters on velocity, temperature and concentration is obtained with the help of Runge-Kutta 4th order shooting technique with ODE45 solver graphically and numerically. It is found that with the increase in porous medium parameter velocity and concentration are increases while temperature decline. The reduced nusselt number Nur decreases and reduced Sherwood number increases for increasing in Le with constant value of Pr. Nanoparticle volume friction decreases as Ec increases with constant value of Pr.

Keywords: Boundary layer**,** Moving plate, Nanofluid, Saturated porous medium, Viscous dissipation,

FUNCTIONS AND OPERATIONS ON REVERSE ORDER FUZZY NUMBERS

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In this paper a new type of reverse order fuzzy number has been introduced and its complement of fuzzy functions are verified. Using the complement and dual α-cuts of fuzzy number, properties of reverse order fuzzy numbers are further investigated. Some preposition for instance maximum and minimum operations on fuzzy equation and for Dual α-cuts and reverse order fuzzy numbers have been introduced and proved.

APPLICATION OF GAME THEORY APPROACH IN INTERNATIONAL RELATIONS

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When looking at present academic international relations (IR) research, it becomes clear that advanced types of analysis are rarely applied to comprehend strategic interactions. Rational choice theory and its most important component, game theory, are the most notable exceptions to this weakness. The purpose of this paper is to show how formal rational choice theory and game theory can be used to better understand international relations. In its most fundamental form, game theory is founded on a set of assumptions proposed by rational choice theory. As a result, any technique that presupposes those political actors have rational choices and conducts political analysis based on this premise qualifies as a rational choice approach. Modelling helps us understand strategic situations using game theory. In this article, we will look at what game theory is, how it came to be, some of the most commonly used game theories, the place and importance of game theory, and game theory implementations in international relations.

Keywords: Game theory, international relations, Chicken game, Cuban Missile Crisis, Prisoner's dilemma, Modelling.

COST EFFECTIVE ANALYSIS

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Cost Effective Analysis in a technique to minimize the transportation cost. A transportation problem includes transporting commodities from respective origins to the respective destinations according to the supply and demand given. This study is based on a Moradabad based stainless steel power plant, Pooja Handicrafts. The objective of the study deals in obtaining the most optimal cost for transporting raw materials from sources to the destinations. The optimal solution was obtained by comparing the reduced cost obtained from North-West Corner Method, Least Cost Method and The Vogel's Approximation Method. The results show that there was a reduction of approximately 3.891% of the actual cost by using Vogel's Approximation Method.

CASE STUDY ON CORRELATION ANALYSIS

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A pandemic crisis is now happening in the world because of the new coronavirus, which causes COVID-19 disease. Millions of people are infected, and several countries are affected. This paper inquires the relationship between COVID-19 deaths and recoveries in each country. The outbreak of the coronavirus disease (COVID19) had scattered in every continent, and almost many people had died after contracting the respiratory virus, these deaths occurred in every country. The data was acquired from World meter, and data is until May 8, 2020. The result shows that there is a strong relationship between the two variables with $r=0.766$. Moreover, there is a significant relationship between deaths and recoveries per country for the COVID-19 disease with a p-value of 0.000 (Correlation is significant at the 0.01 level 2-tailed).

TIME ANALYSIS

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Vedic Mathematics is an Indian old arrangement of numerical estimations i.e. calculations of mathematics or operations techniques created in the year of 1957 with 16-word formulae and some sub-formulae which are known as sutras and sub-sutras. Vedic science is the name given to Indian antiquated arrangement of science or in simple words it is the name given to Indian ancient mathematical system, or set of some exact principles with which any algebraic, arithmetical, geometry or trigonometry problems can be effortlessly unraveled. In competitive assessments, students discover that it is really hard to fathom the aptitude questions viably with less or little time spans. Despite the fact that students can comprehend the problem faced, they can't speedup calculations process. Vedic mathematics if understood can take away the fear of mathematics from the students all over the world. Competitive exams which include many mathematical calculations can become easy to be cracked with the help of the sutras included in the Vedic mathematics.

Use of Vedic mathematics makes the calculation much easier and takes less time than the usual method present. The data for the analysis has been primarily collected from students of different ages and studying different subjects. Some of them are studying in high school and intermediate, some are graduates and some of them are post graduates. Also, we have collected data from the students preparing for competitive examinations. Through our research we will be analyzing the difference between the time taken to do the mathematical calculations by the modern methods and the Vedic methods. For the examination a software SPSS is utilized to perform paired samples t-test which is intense for breaking down factual information As a result of the paired samples t-test, we will be having an answer to the question that weather there is actually an increase in the speed of the calculations by applying the Vedic methods to solve a mathematical problem or not.

GRAPHICAL REPRESENTATION OF FUNTIONS

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Presenting information in the visual form along with the text and numerical data creates more impact in the mind of an individual. It is a quite natural that our senses work very efficiently and if we teach or learn things in visual form, then our cognitive power increases which leads to better understanding of the area of our concern we are involved or engaged in. Visualization plays tremendous role in the comprehension of subject of our area. It is somehow difficult to understand some concepts in subject like Mathematics which is considered as "Mother of all sciences". In this advanced technological world, The Computer which is the super invention of human being on this earth that has made everything possible and achievable for the general public. There are many software tools developed by the software engineers which can be used to understand our concept in visual form. This project involves the presentation of 'Algebraic Functions, exponential functions and trigonometric functions' in visual form by using MATLAB software tool. This MATLAB software is used for high performance numerical computation and visualization and is one of the most widely used tools in the engineering field today in the current scenario. Our objective behind this project is to make the students aware that by learning the right skills of how to create the code to present the given data in graphical form in the advancement of informational and technological world which is approaching to more accuracy and well-designed patterns or geometrical shapes.

A REVIEW PAPER ON APPLICATION OF MATHEMATICS IN DAILY LIFE

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Mathematics is an important part of our daily lives and has become a necessary component of our modern world's development. Counting begins on the first day of a person's life. The majority of students are curious as to why they are required to learn different mathematical concepts. Most teachers are unable to come up with a real-life application for most subjects, or the examples they do have are beyond the comprehension of the majority of students. Mathematics is widely regarded as the most dry topic in school, consisting of repetitive, complicated, dull, and arcane and irrational calculations that have nothing to do with creativity or exploration. I've written a paper in which I've the meaning of mathematics, the goals of mathematics education, and the rationales for a broad-based school curriculum were addressed, followed by some examples of workplace applications of mathematics that high school and junior college students could understand. Finally, I'll consider how mathematical operations, such as in the workplace, problem solving, investigation, and analytical and logical thinking are important. This research paper's truly excellent work is a series of analysis papers / posts that investigate the open problems. I have addressed recent developments, issues, and their current status, as well as historical information, in this article the background of the subjects It will help students in their pursuit of higher education in their chosen fields.

DIFFERENTIAL EQUATIONS AND THEIR APPLICATIONS

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Over the last hundred or more years, many techniques have been developed for the solution of differential equations. While major portion of the techniques is only useful for academic purposes, there are some which are important in the solution of real problems arising from science and engineering. So, in this research, we discuss about the some of the application of differential equations. Application of differential equations are also used in daily life, like we have to find growth rate of population in India or any other nations. Its application is also used in applications, engineering and medical. Newton's law of cooling is one of the examples of it. At the end of project, we conclude that differential equations you should find that you are able to communicate mathematical ideas and apply your knowledge in everyday life, in particular to applications such as population models and radioactive decay etc.

STUDY ON OPTIMAL STRATEGY FOR MAXIMUM ADMISSIONS BETWEEN TWO COMPETITIVE UNIVERSITIES: TMU & IFTM

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Game theory has been developed to study decision making in complex circumstances. As a mathematical tool for the decision maker the strength of the game theory is the methodology it provides for structuring and analyzing problems of strategic choice. In this paper we have analyzed that how two universities i.e. TMU and IFTM can opt a strategy to get maximum admissions with the help of advertising campaigns through social media sites like Instagram, Twitter and Facebook etc. In this paper we have used data which is collected from two universities on the numbers of registrations for admissions done with the help of social media platforms. The intent of this paper is to present an efficient approach for finding the value of game with the help of simplex method of game theory. The value of the game can be find out by using different methods ,i.e. Nash Equilibrium Method , Dominance Method, Arithmetic Method, Matrix Method ,Graphical Method, Shapley Values Technique, Pareto Optimality Technique, Maximin- Minimax Method , Matrix Method and Linear Programming Method. In this paper we have approached our problem by using simplex method. And obtained an optimal strategy which has to be adopted by the universities for the maximum admissions.

ON MINIMAL R -*I*-OPEN SETS AND CONTINUOUS FUNCTIONS IN IDEAL TOPOLOGICAL SPACES

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The purpose of the present paper is to introduce a new class of sets and a new class of continuous functions in ideal topological space incorporating the idea of minimal open sets and R I open sets. Further, we studied R-I-T$_{min}$ and R-I-T$_{max}$ spaces. The relation between the above defined continuous functions with certain continuous functions which are already in the literature is also investigated.

Keywords: Minimal R-I-open set, R-I-T$_{min}$ space, R-I-T$_{max}$ space, minimal R I continuous function, maximal R-I- continuous function

IMPACT OF SORET AND DUFOUR EFFECT ON CARREAU NANOFLUID FLOW OVER A NON-LINEAR STRETCHING

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The present study examines the Soret and Dufour effects on MHD Carreau nanofluid over a non-linear stretching sheet. The impact of variation in viscosity and thermal conductivity are taken into consideration along with the convective boundary conditions. The governing equations are rendered dimensional by using suitable similarity transformations. The resulting non dimensionless equations are solved analytically through a highly reliable method called Optimal Homotopy Analysis Method (OHAM). The impact of pertinent parameters on velocity, temperature, concentration and streamlines are depicted through graphs and tables. Further, the numerical values for skin friction, Nussult number and Sherwood number are presented for the variation of different parameters through a table. The obtained results are in good agreement with the earlier finding from the literature. Furthermore, the present investigation discloses that, the temperature distributions get reduced for the rise in the values of Dufour number and the reverse effect is observed on concentration distribution with elevation in the values of Soret number. One of the important findings of the current study is that, for shear thinning sluids, the velocity profile get enhanced for raising values of Weissenberg number We, whereas the opposite trend is observed in case of shear thickening fluids.

FORECAST OF RELIABILITY FOR A SYSTEM HAVING REDUNDANT UNIT WITH WAITING IN REPAIR

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In this paper the author considers a complex system with an identical unit in series and two units standby the complex system is divided into two sub systems A and B, and these having redundant units, if any subsystem fail then whole systems will be fail and repair should be provided. Using supplementary variable technique, the author has done mathematical formulation of the system.

KEYWORDS

Complex system, Supplementary variable technique, Laplace transform, Study state behaviour, Stand by redundant units, M.T.T.F.

COMPACT OPERATORS ON GENERALIZED FUZZY NORMED SPACES

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In this article we defined compact set on Generalized Fuzzy normed linear space and establish some of its properties. Also totally bounded set on Generalized Fuzzy normed linear space is introduced and studied the relation between totally boundedness and compactness on Generalized Fuzzy normed linear space. The concept of compact linear operator on Generalized Fuzzy normed linear space is introduced and some properties are investigated.

ON MINIMAL REGULAR OPEN SETS

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A proper non-empty regular open subset of U of a topological space X is said to be a minimal regular open set, if any regular open set which is contained in U is - or U. In this paper we discuss some properties of minimal regular open sets.

Keywords: r-locally finite space, r-neighbourhood, maximal regular closed sets, minimal regular open sets.

A STUDY ON COVID19 LOCKDOWN POLICY IN INDIA AND THE REST OF WORLD.

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The whole world has suffered tremendously by the coronavirus, due to which almost all the nations were under lockdowns and major restrictions. So, in this study, we compare the lockdown policy of India with the rest of the world. We collect the data from all over the world of COVID-19 pandemic. Over the time, various vaccinations have also been found and vaccination drives are taking place in almost every corner of the world. Governments have taken strict measures to fight the COVID-19 pandemic. Lockdowns, restrictions, quarantines along with suspension of transports, work places, offices, worship places i.e. suspension of non-essential commodities was seen. It is seen that a combination of policies is required and lockdown policy alone is ineffective in controlling the pandemic.

Keywords: Lockdown, pandemic, policy, COVID-19, vaccination drives.

INTEGRATING OF MATHEMATICS IN SCIENCE, TECHNOLOGY AND MANAGEMENT

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Mathematical techniques play a significant role in developing and solving problems let it be theoretical or practical in the fields of science, management and technology. In spite of its importance these connections have not been acknowledged with much attention by the scholars. Mathematics Scholars often use the phrase that the spirit of this subject is in the beauty of numbers, figures and relations and it does hold true. Through this paper we lay emphasis on the relation of mathematics with the above-mentioned areas.

Keywords: Mathematics, Science, Technology, Economics, Business.

COVID-19 AND SOCIAL RELATIONS: A COMPREHENSIVE STUDY

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All of a sudden lockdown was declared in India due to covid 19. Due to this each of us were locked at our homes and this reduced our social and face to face interactions. Our entire social structure changed and due to this both positive and negative effects were observed on mental, social and psychological behaviour of people. There is need to study the percentage of each of the effects in each direction in detail so that if such type of situations occurs again during some wartime or pandemic then effective policies and rules be made on time in the benefits of society. This type of outbreaks occurs after every 100 years. Will the same policies will work out after 100 years? Which age group is affected or will be affected the most? What would be impact of change in population on the policies? This research paper tries to find out the solution in this regard with the help of some mathematical model or statistical analysis.

Keywords: Lockdown, Social relations, Mental health, Psychological Behaviour

LOCKDOWN POLICY MEASURE TO COMBAT THE COVID-19 PANDEMIC

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COVID-19 is a pandemic facing the current times. It has supposedly come from bats and further transmitted through human contacts from one country to the whole world. There were various measures taken by the government and international agencies to combat the virus out of which lockdown is the most talked about area of research. Numerous countries announced lockdown policy across the world including the government of India which implemented the lockdown policy in multiple phases to control the spread of the virus. Lockdown, as an effective tool, for keeping the spread of the disease under check has both positive and negative aspects. Lockdown measures along with other remedial actions will help in gaining victory against this deadly virus.

Key Words: SARS, COVID-19, Lockdown, WHO, Pandemic

CERTAIN EXTREMAL PROBLEMS ON A FAMILY OF UNIVALENT FUNCTIONS

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Let $\mathcal{A}$ consists of functions f that are analytic in the open unit disk $\mathbb{U} := \{z \in \mathbb{C} : |z| < 1\}$ and satisfy the normalization conditions $f(0) = 0$ and $f'(0) = 1$. For $0 \leq \beta < 1$, let us define the function family $\mathcal{R}(\beta)$ as

$$\mathcal{R}(\beta) := \{f \in \mathcal{A} : \operatorname{Re}(f'(z)) > \beta, \ z \in \mathbb{U}\}.$$

In this paper, we solve the extremal problem of determining the sharp estimates (upper bound and lower bound) on $\left|\frac{zf'(z)}{f(z)}\right|$ whenever $f \in \mathcal{R}(\beta)$. In addition, for $f \in \mathcal{R}(\beta)$, we calculate the arc-length of the boundary curve of the domain $f(\mathbb{U})$. Furthermore, we study the inclusion properties of the sequences of partial sums of the members of $\mathcal{R}(\beta)$.

Keywords- Univalent functions, Extremal problems, Functions with positive real part.

A COMPARATIVE STUDY ON COVID-19 VACCINATION BETWEEN INDIA AND REST OF THE WORLD

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The whole world has suffered tremendously by the corona virus, due to which almost all the nations were under lockdowns and major restrictions. Over the time, various vaccinations have also been found. Governments have taken strict measures to fight the COVID-19 pandemic. Lockdowns, restrictions, quarantines. Equitable access to safe and effective vaccines is critical to ending the COVID-19 pandemic, so it is hugely encouraging to see so many vaccines proving and going into development. WHO is working tirelessly with partners to develop, manufacture and deploy safe and effective vaccines. Safe and effective vaccines are a game-changing tool: but for the foreseeable future we must continue wearing masks, cleaning our hands, ensuring good ventilation indoors, physically distancing and avoiding crowds. Being vaccinated does not mean that we can throw caution to the wind and put ourselves and others at risk, particularly because research is still ongoing into how much vaccines protect not only against disease but also against infection and transmission. In the past, vaccines have been developed through a series of steps that can take many years. Now, given the urgent need for COVID-19 vaccines, unprecedented financial investments and scientific collaborations are changing how vaccines are developed. This means that some of the steps in the research and development process have been happening in parallel, while still maintaining strict clinical and safety standards. , an exceptional effort by the scientific community has led to the development of over 300 vaccine projects. Over 40 are now undergoing clinical evaluation, ten of these are in Phase III clinical trials, three of them have ended Phase III with positive results.

Keyword: Vaccination, COVID-19, Lockdown,

A QUEUING NETWORK LINKED WITH A FLOW SHOP SCHEDULING SYSTEM

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The present paper is an attempt to collaborate the linkage between a queue network and a scheduling system. In this queuing system, servers are connected in tri cum biserial manner those are further associated with a common server and a flow shop system consists of machines. The arrival and departure pattern follow Poisson law approach. The objective of this paper is to set up an algorithm to optimizing the total elapsed time and completion time. Extensive mathematical investigations have been done to approve the relevance of the current model.

Keywords: Average waiting time, Queue length, Poisson law, Scheduling.

MATHEMATICAL STUDY OF AN AIR QUALITY MODEL BASED ON GAUSSIAN PLUME DISPERSION APPROACH

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Air Quality Modelling or Atmospheric dispersion pollution modelling is of great and actual concern in the scientific community. Many dispersion models have been developed and used to estimate the downwind ambient concentration of air pollutants from sources such as industrial plants, vehicular traffic, or accidental chemical release. Among them, the Gaussian Plume model is perhaps the most used model type. It is often used to predict the dispersion of air pollution plumes originated from ground-level or elevated sources. This paper deals with various atmospheric parameters based on Atmospheric Dispersion Modelling and Gaussian Plume Model.

Keywords: Ground level pollution, atmospheric dispersion, Gaussian distribution, Air quality

SOME MATHEMATICAL BASED CRYPTOGRAPHIC TECHNIQUES AND THEIR COMPARISON

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In this paper, we have worked on cryptographic techniques and compared them in terms of their strengths and weaknesses. There are various types of cryptographic techniques that can be used depending on their applications, processing time and power, security etc. We have discussed old cryptographic techniques, their strengths and weaknesses and why they are discontinued nowadays. With change in time and technology, techniques have also evolved. Modern techniques are better options to protect digital data. We observed that continuous improvements should be made to current techniques to make them more secure.

Keywords: Decryption, Encryption, Modern Techniques, Old Techniques

A REVIEW PAPER ON EOQ MODELS

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This paper gives a review on the basic Economic Order Quantity (EOQ) model, which is used to improve management efficiency in modern businesses. Inventories are company's assets, and as such, they constitute an investment. Because such investment necessitates a financial commitment, a company must keep enough inventories. If they grow too big, the company will miss out on opportunities. For businesses with complex supply networks and production processes, balancing the risks of inventory gluts and shortages is extremely tough. To achieve these balances, businesses have devised inventory management techniques.

Keywords: Economic order quantity, Inventory management, demand.

ANALYSIS OF OBTAINING INITIAL BASIC FEASIBLE SOLUTION IN A TRANSPORTATION PROBLEM OF FLUXMIN METAL PVT. LTD.

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The constraint structure of the transportation problem is so necessary that the literature is full of efforts to provide efficient algorithms for obtaining an initial basic feasible solution. In this paper we have analyzed the time duration of obtaining the initial basic feasible solution using various algorithms existing in the literature till now. Also we have compared the accuracy among the algorithms studied earlier in calculating the initial basic feasible solution for a transportation problem. The intent of this paper is to present an efficient approach for finding an initial basic feasible solution of the transportation problem (TP). In this paper we have used a data sheet which is collected from a plant fluxmin metal pvt Ltd. for last 30 days, and all the parameters are taken accordingly. We have used the existing algorithms for obtaining initial basic feasible solution by using the Northwest Corner Method (NWCM), Least Cost Method (LCM), Vogel's Approximation Method (VAM), Row Minimum Method (RMM), Column Minimum Method (CMM), Extremum Difference Method (EDM) and Total difference method (TDM). The outcome of the paper is to find the proper routing, scheduling of vehicles and crew can save much more in fuels in the comparison to the other days.

REVIEW PAPER ON USE OF LAKMÉ BRAND IN QUALITY ANALYSIS

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Lakmé is one of the leading cosmetic brands with headquarters in Mumbai, India, owned presently by Unilever. The idea of establishing Lakmé in the year 1952 surged into existence because Prime Minister Jawaharlal Nehru came to know that Indian women were splurging on imported cosmetics and spending precious foreign exchange on beauty products. In this case, he requested JRD Tata to start the beauty sector in India. Lakmé then became a 100% affiliate of Tata Oil Mills (TOMCO), a part of the TATA group. Later it became a unique company as it goes by its tagline 'Lakmé Reinvent' after it has been acquired by Hindustan Unilever, 'On Top of the World which now continuously innovates and offers a wide variety of cosmetics of the world-class, skincare product, and beauty salons to the customers around the world. This article illustrates different elements of the organization, it's company sections, marketing strategies, corporate structure, management, and structure operations while providing beauty and wellness services. The secondary data were obtained from various scholarly journals, websites, and books. We have analyzed financial performance, corporate, social responsibilities of the company and examined their strategies using the SWOC framework as a research case study.

A REVIEW PAPER ON DIMENSIONS IN MATLAB FOR SIMULATION AND ANIMATION IN OPTICAL FIBER COMMUNICATION

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Generally, we find certain concepts in fibre optic communication theory are difficult to understand. Best example is electromagnetic mode theory in cylindrical coordinates. The solutions of the differential equation which explains the modes of the fibre are Bessel functions, with which most of the are not aware of, and the vectorial nature of the analysis only hardens the situation. The second difficult concept is dispersion. The fact that the different frequencies of light travel at different speeds in the fibre is not such confusing. It is in the implications where the difficulty arises. Specifically, the concept of group velocity is physically illogical, and an analysis of the pulse spreading those results because of dispersion often includes a rigorous Fourier analysis. This paper describes how computer simulation and animation can provide a visual means of simplifying these concepts so that they are easier to understand in MATLAB.

DISCUSSION ON RADIAL DISTANCE IN GRAPHS

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In this article the definition of Radial distance of a graph G = (V; E) is introduced. It is the difference between the detour and geodesic distance of a pair of vertices. Here, we compare radial distance of two graphs considering the order, size and diameter of the graph. Also, we discuss the properties of radial distance on different graph classes like complete graph, wheel graph, cycle, helm graph etc.

COMPLEMENT METRIC DIMENSION OF SOME GRAPHS

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Let G=(V (G), E(G)) be a connected graph. Consider an ordered subset W of V (G) given by W ={w1,w2,w3,. . . ,wk}. The representation of a vertex v Ɛ V(G)with respect to W is the k-tuple, r(v|W) = (d(v, w1), d(v, w2),. . . ,d(v, wk)) where d(v, wi) is the length of the shortest path from v to wi. The set W is called a complement resolving set for G if there exist two vertices u, v Ɛ V (G) - W such that r(u|W)=r(v|W). A complement resolving set having maximum cardinality is called a complement basis of G. The cardinality of a complement basis of G is called the complement metric dimension of G and is denoted by dim(G). The detour code of a vertex v Ɛ V (G) with respect to W is defined as cD(v|W) = (D(v, w1), D(v, w2),....., D (v, wk)) where D(v, wi) is the length of the longest v - wi path in G. The set W = {w1, w2,......,wk} is called a detour complement resolving set for G, if at least two vertices of V (G) have the same detour code with respect to W . A detour complements resolving set with maximum cardinality is called a detour complement basis for G and the cardinality of the detour complement basis is the detour complement metric dimension dimD(G) of G. In this paper we have examined the complement metric dimension and detour complement metric dimension of some graphs.

SLIP EFFECT AND MAGNETIC FIELD ON THE PERISTALTIC FLOW OF A FRACTIONAL SECOND GRADE FLUID THROUGH INCLINED A CYLINDRICAL TUBE

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In this paper, we study the slip effect and magnetic field on the peristaltic flow of a fractional second grade fluid through inclined cylindrical tube is analyzed. Analytical solution is carried out for long wavelength and low Reynolds number considerations. Closed form expressions have been obtained for axial velocity. The expression for pressure rises and frictional force are obtained. The effect or fractional parameter, material constant, time, amplitude, slip parameter, magnetic field on the axial pressure gradient and   friction force are discussed and illustrated graphically through a set of graphs.

ON k_{gp}^* -CLOSED SETS

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In this article, we consider a new class of sets which are called k_{gp}^* closed set, k_{gp}^* locally closed set, k_{gp}^*-locally closed set and k_{gp}^{**}-locally closed set and obtain some of their properties and also their relationships with some other classes of generalized topological spaces.

Keywords: generalized topological space, k-open, k-closed, k-preopen, k-preclosed, k-locally closed, k-pre* open, pre*-closed.

ON D-ANTIPODAL GRAPHS OF SIGNED SMITH GRAPHS

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In literature Smith graphs are defined as graphs having highest eigen value 2 [2]. There are five classes of connected Smith graphs [1]. A graph S = (G, σ) is called a signed graph if there is a function σ : E(G) −→ {1, −1} that associates either +1 or −1 sign to each edge

of G. A signed graph is called balanced if the product of signs in each cycle is positive. Given a graph G, its antipodal graph, A(G) is a graph that has the same vertex set as that of G and two vertices are adjacent if they are at a distance of diam(G) in G. In this paper we have introduced d-Antipodal graphs, $A^d(G)$ with

$V(A^d(G)) = V(G)$ and $\qquad E(A^d(G)) = E(A(G)) \cup E(G)$.

Given signed graph Σ = (G, σ), the d-Antipodal Signed graph of Σ is $A^d(S) = (A^d(G), \sigma_d)$, where

$$\begin{cases} \sigma(e) & \text{if } e \in E(G) \\ \displaystyle\prod_{g \in Ed(e)} \sigma(g) & \text{if } e \in E(A(G)) \end{cases}$$

and $E_d(e)$ is the collection of all edges that appears on diametric paths connecting the end vertices of e.

We have studied balancedness, conistency, regularity, sign compatabiity of Antipodal Signed graphs of Signed Smith graphs.

Keywords— Signed graphs, marked graphs, Balanced and Consistent signed graphs,

Smith graphs, Antipodal signed graphs

DEVELOPMENT A EOQ MODEL WITH SALE PRICE DEPENDING DEMAND RATE

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A model for deteriorating items with the demand rate depending on the sale price. The selling price is the main criterion when a consumer goes to market to buy a particular product. In this paper, the shortages are allowed and fully backlogged. In many real life situations, uncertainty fatigue is inevitable. There are many situations where the profit from an inventory exceeds its price. In this case, it is economically desirable to take congestion into account. Deterioration factor is taken into account in this model, because almost all elements undergo either direct decay (fruits, vegetables, etc), or physical decomposition (in the case of radioactive substances, volatile liquids, etc.). There are many items like perfume, film and more. Over time, the effectiveness or quality gradually decreases. It is assumed that the traditional parameters of conservation costs will change over time

Keywords: Economic order quantity, Inventory management, demand.

REVIEW ON OPTIMAL STOCHASTIC SYSTEM DESIGN

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This paper gives a overview on the stochastic device graph trouble and affords the challenges worried in the related optimization manner when stochastic simulation is used for evaluating the mannequin performance. The small print of reliability based totally overall performance comparison are then mentioned and the implementation of this usual methodology to the particular discipline of structural manipulate is introduced.

In this stochastic-modeling framework, nonparametric modeling uncertainties be included into the gadget description as a mannequin prediction error, i.e., an error between the response of the authentic device and that of the assumed model. The impact of such a predication error can be taken in to account at a range of ranges with respects to the machine model.

Keywords: Stochastic System, Optimal Control, Reliability

SYNTHESIS, PHYSICAL CHARACTERIZATION AND BIOLOGICAL ACTION OF TRANSITION METAL SCHIFF BASE COMPLEXES

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M (III) complexes with Cr, Mn and Fe have been synthesized and found to be potential antimicrobial agent. An attempt is also made to correlate the biological activity with geometry of the complexes. The Schiff base ligand and its metal complexes were tested for their biological activity against the bacteria Escherichia coli, Staphylococcus aureus, Pseudomonas aeruginosa and Bacillus megaterium, the fungi Kluyveromyces fragilis, Rhodotorula rubra, Candida albicans and Trichoderma reesei. New metal complexes of Cr, Mn and Fe ion with Schiff base derived from 2-amino-4-ethyl-5-hydroxy benzaldehyde and Thiocarbohydrazide were synthesized and characterized by several techniques using elemental analysis (C.H.N), molar conductance measurements, magnetic measurements, electronic, mass and infrared spectral studies. On the bases of these studies, a five coordinated square pyramidal geometryfo all these complexes have been proposed. These metal complexes were also tested for their antimicrobial activity to assess their inhibiting potential. All the complexes were found to be less antimicrobial active against the pathogens E. coli, S.aureus and P.aeruginosa, Cr(III) complex show the best antimicrobial activity, but ligand alone was found to be active against the fungus T.reesei.

Keywords: Characterization, Biological activity, 2-amino-4-ethyl-5-hydroxy benzaldehyde, Thiocarbohydrazide, Transition metal ion, Schiff Base, Spectroscopic studies

APPLICATION OF MATHEMATICS IN DAILY LIFE: A REAL LIFE PROBLEM

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Mathematics is an important part of our daily lives and has become a necessary component of our modern world's development. Counting begins on the first day of a person's life. The majority of students are curious as to why they are required to learn different mathematical concepts. Most teachers are unable to come up with a real-life application for most subjects, or the examples they do have are beyond the comprehension of the majority of students.Mathematics is widely regarded as the most dry topic in school, consisting of repetitive, complicated, dull, and arcane and irrational calculations that have nothing to do with creativity or exploration. I've written a paper in which I've the meaning of mathematics, the goals of mathematics education, and the rationales for a broad-based school curriculum were addressed, followed by some examples of workplace applications of mathematics that high school and junior college students could understand. Finally, I'll consider how mathematical operations, such as in the workplace, problem solving, investigation, and analytical and logical thinking are important. This research paper's truly excellent work is a series of analysis papers / posts that investigate the open problems. I have addressed recent developments, issues, and their current status, as well as historical information, in this article the background of the subjects It will help students in their pursuit of higher education in their chosen fields.

STUDY ON IMPORTANCE OF VEDIC MATHEMATICS IN IMPROVING THE SPEED OF FUNDAMENTAL MATHEMATICAL CALCULATIONS

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Vedic Mathematics is an Indian old arrangement of numerical estimations i.e. calculations of mathematics or operations techniques created in the year of 1957 with 16-word formulae and some sub-formulae which are known as sutras and sub-sutras. Vedic science is the name given to Indian antiquated arrangement of science or in simple words it is the name given to Indian ancient mathematical system, or set of some exact principles with which any algebraic, arithmetical, geometry or trigonometry problems can be effortlessly unraveled. In competitive assessments, students discover that it is really hard to fathom the aptitude questions viably with less or little time spans. Despite the fact that students can comprehend the problem faced, they can't speedup calculations process. Vedic mathematics if understood can take away the fear of mathematics from the students all over the world. Competitive exams which include many mathematical calculations can become easy to be cracked with the help of the sutras included in the Vedic mathematics. Use of Vedic mathematics makes the calculation much easier and takes less time than the usual method present. Hence, to bring this issue forward we have chosen this topic.

REGRESSION ANALYSIS

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Linear regression is a statistical procedure for calculating the value of a dependent variable from an independent variable. Linear regression measures the association between two variables. It is a modeling technique where a dependent variable is predicted based on one or more independent variables. Linear regression analysis is the most widely used of all statistical techniques. This article explains the basic concepts and explains how we can do linear regression calculations in SPSS and

excel.

PERFORMANCE MANAGEMENT OF TRANSPORTATION

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Performance management in the transportation and distribution problem of the vehicle species were considered for selected areas within the District- Moradabad, Uttar Pradesh. The aim of this Paper is to reduce travel and operational costs Configure the distribution of available resources. Details were obtained and sorted For Operational Research (OR) models that use the simplex line method Editing, five navigation algorithms, namely, Vogel Measurement Method, North-West Corner Route, Low Cost Route, Low-Column Route and Line-A small method has been used and repeated to promote the possibility of a basic initialization Solution. The best solutions are found using the above methods. Transportation Algorithms are compared to 2 types of car tires, supported by a very small number Percentage difference and multiplication value. Vogel Evaluation Method (VAM) has been found to be an effective method for twenty complete duplicates A small percentage distribution solution, and Column-Minimum Method (CMM) in twenty duplicates with a small percentage difference of Better done at a lower cost. Transport modelling procedures as well Distribution problem can be helpful in making better decisions in companies such as Car companies come in, spreading their tires well Goods by various designated carriers, from first place to Various locations at low travel costs.

A RESEARCH PAPER ON APPLICATION OF MATHEMATICS IN DAILY LIFE

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Mathematics is an important part of our daily lives and has become a necessary component of our modern world's development. Counting begins on the first day of a person's life. The majority of students are curious as to why they are required to learn different mathematical concepts. Most teachers are unable to come up with a real-life application for most subjects, or the examples they do have are beyond the comprehension of the majority of students.Mathematics is widely regarded as the most dry topic in school, consisting of repetitive, complicated, dull, and arcane and irrational calculations that have nothing to do with creativity or exploration. I've written a paper in which I've the meaning of mathematics, the goals of mathematics education, and the rationales for a broad-based school curriculum were addressed, followed by some examples of workplace applications of mathematics that high school and junior college students could understand. Finally, I'll consider how mathematical operations, such as in the workplace, problem solving, investigation, and analytical and logical thinking are important. This research paper's truly excellent work is a series of analysis papers / posts that investigate the open problems. I have addressed recent developments, issues, and their current status, as well as historical information, in this article the background of the subjects It will help students in their pursuit of higher education in their chosen fields.

MATHEMATICS THE LANGUAGE OF THE UNIVERSE: A REAL LIFE PROBLEM

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The Universe cannot be read until we have learnt the language and become familiar with the characters in which it is written. It is written in mathematical language, and the letters are triangles, circles and other geometrical figures, without which means it is humanly impossible to comprehend a single word. It is an essential part of space travel and also help us to travel on earth. So in this project we discuss about the basics and nature of mathematics, a brief history of mathematics practical mathematics and Greek philosophy, evolution of Hindu –Arabic numerals, Babylonian numeral, geometry and Euclidian geometry, contribution of some great Mathematicians, needs and scope of mathematics by this we identify the reasons for learning math and development of skills through mathematics and found the career and scope of mathematics . So we conclude that the use of mathematics in one's life is infinite whether it is social , numerical or practical. The use of mathematics is unquestionable for every individual. It offers a wonderful approach to be successful in life.

DIFFERENTIATION: A REAL LIFE APPLICATION

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This study examined the use of differential equations on our daily life, and the rate at which our daily life is changing we have specifically focused our study on sports and how it is useful to apply and study differential equation on it. Basically differentiation means the rate of change or we can say that how something is change with respect to time or another factor. So how to kick a ball so that it lands on a perfect point or how to receive a ball as the ball is changing it's position with respect to time at every second. And even with basketball and any other sports like how to take a start in a race for a good run so that we can run at our full potential. There are many differential equations that can help us to improve our gameplay in sports and even in the e-sports era when every one is playing e-sports especially BGMI, COD etc. it also helps to determine our enemies position and where to aim when the enemy is moving so we have taken some readings for these equations in the way to find a way to get a perfect shot.

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