

**NATIONAL CONFERENCE
ON
ANCIENT MATHEMATICS & ITS
EMERGING AREAS**

(18 November, 2022)

AMEA-2K22

**Dr. Vipin Kumar : Conference Convener
Dr. Ajit Kumar : Conference Co-Convener
Prof. R. K. Dwivedi : Conference General Chair**

ISBN No.: 978-93-5493-861-0



**ORGANIZED BY
DEPARTMENT OF MATHEMATICS
FACULTY OF ENGINEERING
TEERTHANKER MAHAVEER UNIVERSITY, MORADABAD**



National Conference on Ancient Mathematics & its Emerging Areas (AMEA-2K22)

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Organizes

NATIONAL CONFERENCE

on
Ancient Mathematics & its Emerging Areas (AMEA-2022)

18 November, 2022 | 10:00 AM onwards
 Venue : LT-2, FoE, TMU

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Prof. Rashmi Bhardwaj,
Guru Govind Singh Indraprastha University (GGSIPU), New Delhi

Keynote Speaker



Dr. Uday Singh, Associate Professor, IIT Roorkee

Session Chair



Dr. Nagendra Kumar, Associate Professor, MMH College, Ghaziabad

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, Jain 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 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 of Mathematics has well qualified, dedicated and sincere faculty members to cater the need of students. The Department of Mathematics has played quiet well role during the covid-19 spread in India. The dedication and adaptive quality of the department has helped to conduct the successful online classes and online assessment of students, without failure. Department is honestly trying hard to provide strong mathematical foundation, analytical and computational skills. The challenging yet loving part of this process is gradual developments in abstract understanding and mathematical thinking of students.

About The Conference

The “Ancient Mathematics & its Emerging Areas (AMEA-2K22)” 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 conferences will feature keynote and invited talks by renowned academicians, researchers, scientist of National repute. The conference will provide an opportunity to present theoretical, experimental and visionary research papers.

Objective of Conference

The main objective of Ancient Mathematics and its Emerging Areas (AMEA-2K22) 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.

Conference Tracks

- Algebra
- Mathematical Analysis
- Graph Theory
- Control Theory
- Cryptography
- Dynamic System
- Computational Mathematics
- Numerical Analysis
- Environmental Modelling
- Finite Element Mathematics
- Nano Science
- Genetic Sequencing
- Algebraic Geometry
- Mathematical Physics
- Quantum Theory
- Mathematical Chemistry
- Fourier and Wavelet Transforms
- Mathematical Biology
- Operation Research
- Optimization Technique
- Mathematical Computational Techniques
- Differential Equations
- Mathematical Modelling and Simulation

Preface

We take this opportunity to welcome you all to the conference proceeding of the National Conference on Ancient Mathematics & its Emerging Areas (AMEA-2K22).

The objective is 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, and panel discussions 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 Conference Convener, I thank too many esteemed authors for having shown confidence in us and considered AMEA-2K22 a platform to share their work. We wish to express our gratitude to our focused and dedicated team of Co-conveners, Organizing Secretary, 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 conference successful.

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

We are personally thankful to our Conference General Chair & Principal, Prof. (Dr.) R K Dwivedi, who is 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 conference proceeding 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. Vipin Kumar
Conference Convener
AMEA-2K22



Message

I feel extremely happy and delighted to know that the Department of Mathematics, Faculty of Engineering is organizing a National Conference on Ancient Mathematics & its Emerging Areas on 18 November 2022 (AMEA-2K22).

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
Conference General Chair & Principal
Faculty of Engineering
TMU, Moradabad

Contents

Advisory Committee	05
Organizing Committee	06
Guests Detail	07
Preface	14
Principal's Messages	15
Schedule	17
Abstract	21-63



National Conference

On



Ancient Mathematics & its Emerging Areas (AMEA-2K22)

Conference Schedule

(Friday, 18th November, 2K22)

S. No.	EVENT	TIME
1.	Inauguration by lighting the lamp- Maa Saraswati Vandana	10:00 AM
2.	Conference Theme and Welcome Address: Prof. (Dr.) Rakesh Kr. Dwivedi, Conference General Chair, AMEA-2K22	10:05 AM
3.	Address: Dr. Aditya Sharma, Registrar TMU, Moradabad	10:15 AM
4.	Address: Dr. Manjula Jain, Associate Dean, TMU, Moradabad	10:20 AM
5.	Address: Prof. Raghuvir Singh, Hon'ble Vice Chancellor, TMU, Moradabad	10:25 AM
6.	Chief Guest Address: Prof. (Dr.) Rashmi Bhardwaj, Guru Gobind Singh Indraprastha University, New Delhi	10:30 AM
7.	Keynote Address: Dr. Uday Singh, Associate Professor, Department of Mathematics, IIT Roorkee	11:00 AM
	High Tea	11:20 AM
SESSION-I		
Paper Presentation		
8.	Session Chairs: 1. Dr. Nagendra Kumar, Associate Professor, Dept. of Mathematics, M.M.H. College, Ghaziabad 2. Dr. Parag Agarwal, Associate Professor, CCSIT	12:00 PM- 01:30 PM
LUNCH BREAK		01:30 PM- 02:30 PM
SESSION- II		
Paper Presentation		
9.	Session Chairs: 1. Dr. Ashendra Kumar Saxena, Professor & HoD, CCSIT 2. Dr. Alok Kumar Gahlot, FoE	02:30 PM- 04:30 PM
Valedictory Session		
10.	Conference Report: Dr. Vipin Kumar, Conference Convener, AMEA-2K22	4:30 PM
11.	Vote of Thanks: Dr. Abhinav Saxena, Conference Secretary, AMEA-2K22	4:35 PM



National Conference On **Ancient Mathematics & its Emerging Areas (AMEA-2K22)**

Presentation Schedule

SESSION-I & II

(Friday, 18th November, 2K22)

Zoom Link: https://us06web.zoom.us/j/86859294163?pwd=SlJaSnAyZGluRlllVVdud2ZCS2NVUT09			
Meeting ID: 868 5929 4163		Passcode: AMEA	
S. No	Paper ID	Authors	Title
1.	P-AMEA-111	Abhay Kumar	SUPERCYCLICITY CRITERIA FOR THE TENSOR PRODUCT OF THE C0-SEMIGROUPS
2.	P-AMEA-112	¹ Abhay Rajpoot , ² Lavanya Selvaganesh	APPLICATION OF SDD INDEX IN PCB MOLECULE'S
3.	P-AMEA-113	Ajeet Kumar Yadav	RECENT DEVELOPMENT IN THE RYSER DESIGN CONJECTURE - A SURVEY
4.	P-AMEA-114	¹ Manoj Kumar, ² Akash Rathor, ³ R.K. Mishra	DEVELOPMENT OF ISOGENY MODEL FOR HUFF CURVE
5.	P-AMEA-115	¹ Deepak Singh, ² Sag Ram Verma	ANALYSIS OF PANTOGRAPH DELAY PROBLEM ABOUT FRACTIONAL GENERALIZED LEGENDRE WAVELETS
6.	P-AMEA-116	Dr. Premodkumar K P	COMPUTING 2- DISTANCE FORCING NUMBER OF GRAPHS WITH LARGE DIAMETER
7.	P-AMEA-117	¹ Niteesh Kumar, ² Harendra Kumar	A NOVEL HYBRID FUZZY TIME SERIES MODEL FOR PREDICTION OF COVID-19 INFECTED CASES AND DEATHS IN INDIA
8.	P-AMEA-118	¹ Gaurav Agrawal, ² Nidhi Handa, ³ Omkar Lal Shrivastava	A BRIEF STUDY OF “BHĀVANĀ AND CAKARAVĀLA ALGORITHM”
9.	P-AMEA-119	¹ A. Gnana Arockiam, ² M. Gilbert Rani	A STUDY ON B-OPEN SET IN TOPOLOGICAL SPACE
10.	P-AMEA-120	Hemant Kumar Mishra	CHOOSE THE ONE AMONG VARIOUS AVAILABLE OPTIONS USING THE TECHNIQUES OF OPERATIONS RESEARCH
11.	P-AMEA-121	Krishnandan Verma	EFFECT OF CHEMICAL REACTION ON HEAT AND MASS TRANSPORT PROCESS ON MHD NANOFLUID FLOW PAST A VERTICAL

			ELONGATING SURFACE CONSIDERING SLIP CONDITIONS AT THE BOUNDARY
12.	P-AMEA-122	¹ Lalit Mohan Trivedi, ² Harendra Kumar, ³ Manuj Kumar Agarwal	EXAMINATION OF IMPACTING VARIABLES INSTUDENTS FOR ACCOMPLISHMENT IN MATHEMATICS
13.	P-AMEA-125	¹ Manuj Kumar Agarwal, ² Manish Saxena, ³ Sachin Kumar Agrawal	STUDY OF VEDIC MATHEMATICAL TECHNIQUES TO SPEED UP THE BASIC MATHEMATICAL CALCULATIONS
14.	P-AMEA-126	Rashmi Yadav	A VEDIC APPROACH IN DIVISION
15.	P-AMEA-127	¹ Sachin Kumar Agrawal, ² Manish Saxena, ³ Manuj Kumar Agarwal	INFLUENCE OF SERVICING RATE ON VARIOUS QUEUING ENTITIES OF A NETWORK QUEUING MODEL IN STEADY STATE
16.	P-AMEA-128	Shabnam Jasrotia	THE SOLUTION OF BURGES EQUATION BY ACCELERATED HOMOTOPY PERTURBATION TRANSFORMATION METHOD
17.	P-AMEA-129	¹ Manoj Kumar, ² Shivender Goswami, ³ R.K. Mishra	QUANTUM STABILIZER CODES BASED ON NON-CYCLIC HADAMARD DIFFERENCE SETS
18.	P-AMEA-130	Sugunthakunthalambig ai. R,	COMPUTATIONAL TECNIQUES OF FUZZY STOCHASTIC MODEL FOR RAINFALL FORECASTING
19.	P-AMEA-131	Vinod Y	LACK OF THERMAL EQUILIBRIUM EFFECTS ON CONVECTION IN A SATURATED POROUS MEDIA WITH AN ELLIS FLUID
20.	P-AMEA-132	Vinod Bhatia, Poonam Adhlakha Tamanna	IMPLEMENTATION OF VEDIC TECHNIQUE AND ITS APPLICATIONS
21.	P-AMEA-133	C. N. Dhone	ANALYSIS OF DELAY DIFFERENTIAL EQUATION USING (DDE) VARIATIONAL ITERATION METHOD
22.	P-AMEA-134	¹ Harendra Kumar, ² Lalit Mohan Trivedi, ³ Manuj Kumar Agarwal	ANALYTICAL STUDY OF SPIRITUAL INTELLIGENCE AND ADJUSTMENT OF ADOLESCENTS
23.	P-AMEA-135	Khyati Singh	FORMULATION OF THE OPTIMAL ECONOMIC ORDER QUANTITY USING VARIOUS INVENTORY MODELS
24.	P-AMEA-136	¹ Priyanka Jain, ² Dr. Vipin Kumar	FUNDAMENTAL ANALYSIS OF SPECULATING INVESTORS IN STOCK MARKET
24.	P-AMEA-137	¹ Puneet Kumar, ² Dr. Abhinav Saxena	A CASE STUDY OF RESTAURANT TO UPGRADE THE SERVICE QUALITY USING QUEUING THEORY
25.	P-AMEA-138	¹ Rashi Arya, ² Dr. Gopal Kumar Gupta	LITERATURE REVIEW ON MACHINE REPAIRABLE QUEUEING SYSTEM

26.	P-AMEA-139	¹ Stuti Gupta, ² Dr. Gopal Kumar Gupta	PREVALENCE OF INFERTILITY AND ITS ASSOCIATED RISK FACTORS ACROSS URBAN MILLENNIAL
27.	P-AMEA-140	¹ Alpana Srivastava, ² Ajit Kumar ³ A.C. Pandey	FLOW OF STRATIFIED INCOMPRESSIBLE NEWTONIAN FLUID THROUGH POROUS MEDIUM SANDWICHED BETWEEN PARALLEL PLATES
28.	P-AMEA-141	¹ Chhavi Gupta, ² Dr. Vipin Kumar	CASE STUDY ON JOB SEQUENCING & SCHEDULING ALGORITHMS
29.	P-AMEA-143	¹ Chhavi Rani, ² Kashish Bhargav, ³ Khushi Chahal, ⁴ Tisha Johari	ECO FUNCTIONAL MATRIX
30.	P-AMEA-144	¹ Abhinay Yadav, ² Gaurang Tiwari, ³ Devesh Pal	APPLICATION OF GAME THEORY
31.	P-AMEA-145	¹ Prerna Saini, ² AnchalYadav	A STUDY OF COVID -19 THROUGH SAMPLING METHODS
32.	P-AMEA-146	¹ Esha Jain, ² Sneha Chauhan, ³ Surbhi	APPLICATION OF INTEGRAL CALCULUS
33.	P-AMEA-147	¹ Ambuj Gupta, ² Priyanshu Kumar, ³ Tushar Kumar	STUDY ON LINEAR ALGEBRA AND MATRIX IN MATHEMATICS
34.	P-AMEA-148	¹ Araish Khan, ² Amisha Jain, ³ Dr. Abhinav Saxena	APPLICATION OF GAME THEORY APPROACH IN INTERNATIONAL RELATIONS
35.	P-AMEA-149	Palak Tandon	APPLICATION OF GRAPH THEORY
36.	P-AMEA-150	Anmol Narula	APPLICATION OF TRANSPORTATION PROBLEM
37.	P-AMEA-151	Ankit Kumar	A NEW METHOD BASED ON GA AND FUZZY PETRI NETS IS ABLE TO DETERMINE THE SCHEDULING A PROJECT WITH A TIME COST AND TRADE-OFF PROBLEM
38.	P-AMEA-152	Botta Bharathi	THE ITERATIVE SYSTEM OF ELLIPTIC EQUATIONS IN AN ANNULUS AND ITS POSITIVE RADIAL SOLUTIONS
39.	P-AMEA-153	¹ Arvin, ² Vinod Bhatia	THE PERFORMANCE OF QUEUING MODELS CONSIDERING THE M/M/1/N QUEUEING SYSTEM WITH BALKING AND RENEGING
40.	P-AMEA-154	¹ Ashok kumar, ² Shiv kumar	TO STUDY THE IMPACT OF COVID-19 AND STATISTICAL ANALYSIS OF THE PATIENTS OF VARIOUS DISEASES

ABSTRACT

SUPERCYCLICITY CRITERIA FOR THE TENSOR PRODUCT OF THE C_0 -SEMIGROUPS

Abhay Kumar

*Assistant Professor, Department of Mathematics,
H.N.B. Garhwal Central University, U.K., India*

A C_0 -semigroup also called strongly continuous semi group $T = (T(t))_{t \geq 0}$ on a Banach space X is said to be super cyclic if there exists a vector $x \in X$ such that the projective orbit $\{\alpha T(t)x; t \geq 0, \alpha \in \mathbb{C}\}$ is dense in X . Super cyclicity of semi groups is a natural generalization of hyper cyclicity, that is, the existence of a vector $x \in X$ whose orbit $\{T(t)x; t \geq 0\}$ is dense in X . The theory of super cyclic C_0 -semigroups is not as developed as the theory of hyper cyclic C_0 -semigroups. Relatively fewer results are available for super cyclic C_0 -semigroups (see [1], [2], [3], [4], [5] and [6] for some of these). Super cyclic C_0 -semigroups are interesting because of their relation to stability theory, see [2, Theorem 3.2]. Products of super cyclic C_0 -semigroups have not been studied yet. Our purpose is to obtain super cyclicity criteria for the tensor product of C_0 -semigroups. In this paper, we give some sufficient conditions for the tensor product of the C_0 -semigroups of operators to be super cyclic.

APPLICATION OF SDD INDEX IN PCB MOLECULE'S

¹Abhay Rajpoot, ²Lavanya Selvaganesh

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Vukičević and Gašperov, in 2010, introduced a potentially useful topological index known as the Symmetric division deg (SDD) index. They showed that its best correlates when predicting the total surface area of polychlorobiphenyls (PCB). In this article, we analyze the relation of the SDD index with other physicochemical properties of PCBs, such as log water solubility, octanol-water partition ratio, with the aid of computers. We also compare it with other well known vertex degree-based (VDB) indices. We show that the SDD index has better correlation ability with a correlation value of 0.96 for log-water solubility and 0.93 for octanol-water partition coefficient. We also predict the values for these two properties of PCBs whose experimental values are not available in this process.

RECENT DEVELOPMENT IN THE RYSER DESIGN CONJECTURE - A SURVEY

Ajeet Kumar Yadav

St. Gonsalo Garcia College, Vasai

Let v and λ be integers with $0 < \lambda < v$. A λ -design D is a pair (X, A) , where X is a finite set with v elements called points and A is a family of subsets of X called blocks, with $|A| = |X|$ such that 1. for all $B_i, B_j \in A, i \neq j, |B_i \cap B_j| = \lambda$; 2. for all $B_j \in A, |B_j| = k_j > \lambda$, and not all k_j are equal. The only known examples of λ -designs are so-called type-1 designs, which are obtained from symmetric designs by a certain complementation procedure. Ryser and Woodall had independently conjectured that all λ -designs are of type-1. This article is a survey of the current (2022) status of the conjecture. Keywords: λ -designs, Ryser-designs, Symmetric designs, λ -design conjecture, type-1 λ -designs.

DEVELOPMENT OF ISOGENY MODEL FOR HUFF CURVE

¹Manoj Kumar, ²Akash Rathor, ³R.K. Mishra

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Post-quantum cryptography has several parts. But most important of in these types part is cryptography based on Isogeny because due to its smaller key sizes and less memory. In the execution of the cryptography based on isogeny, computation of isogeny and operations between points do a work as the elementary building section. It is not possible to optimize the isogeny method for a specific elliptic curve coefficient since the cryptosystem progresses through the isogeny graph. Montgomery curves are used in the literature because they may be used to perform an efficient point operation on any elliptic curve. By the use of the transformation and properties of homomorphism, current work proposes the method for isogenies on Huff curves. We conclude that Huff curve are efficient in comparison of Edwards and Montgomery curves by results of computations cost.

ANALYSIS OF PANTOGRAPH DELAY PROBLEM ABOUT FRACTIONAL GENERALIZED LEGENDRE WAVELETS

¹Deepak Singh, ²Sag Ram Verma

*^{1,2}Department of mathematics and Statistics, Gurukula Kangri (Deemed to be University)
Haridwar, Uttrakhand, India*

In this paper, we explore a method for solving fractal-fractional pantograph differential equation for delay by using of generalized fractional order legendre wavelets. The method is based on the fractal fractional integral operational matrix of fractional order generalized legendre wavelets by using of Caputo fractal-fractional derivatives and collocation method.

COMPUTING 2- DISTANCE FORCING NUMBER OF GRAPHS WITH LARGE DIAMETER

Premodkumar K P

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In this paper we compute the 2- distance forcing number of some graphs with large diameter. The 2- distance forcing number is a generalization of the zero forcing number based on the distance in graphs. 2- distance vertex: Let $G = (V, E)$ be a graph with vertex set $V(G)$ and edge set $E(G)$. If a vertex v of G lies at a distance at most two from the vertex u of G , then we say that the vertex v is a 2- distance vertex of u . Color change rule: Let G be a graph with each vertex colored either black or white. If a black colored vertex has exactly one white colored 2- distance vertex, then change the color of the white vertex to black. Derived Coloring: Derived coloring is the result of applying the color change rule so that all the vertices of the graph are colored black. 2- distance forcing set: A 2- distance forcing set for a graph G is a subset Z_2^d of vertices of G such that if initially the vertices in Z_2^d are colored black and the remaining vertices are colored white, the derived coloring of G is all black. 2- distance forcing number: The 2- distance forcing number $Z_2^d(G)$ is the minimum of cardinality of Z_2^d over all 2- distance forcing sets Z_2^d subset of $V(G)$.

A NOVEL HYBRID FUZZY TIME SERIES MODEL FOR PREDICTION OF COVID-19 INFECTED CASES AND DEATHS IN INDIA

¹Niteesh Kumar, ²Harendra Kumar

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The unpredicted pandemic caused by novel COVID-19 affected various aspects of life all over the world. So, it becomes necessary to predict the number of upcoming cases in future for the preparation of future plan-of-action and prepare medical set-ups. The present manuscript proposed a hybrid model for the prediction of upcoming COVID-19 infected cases in India by using fuzzy time series forecasting technique based on modified fuzzy c-means. Proposed model has two phases. In phase-I, modified FCM clustering technique is used to form basic intervals with the help of centroid while in phase-II, these intervals are upgraded to form sub-intervals and then prediction for the infected cases has been carried out. The proposed model is tested against available COVID-19 data for the measurement of its performance based on mean square error, root mean square error and average forecasting error rate. The novelty of the proposed model lies in the prediction of COVID-19 infected cases and deaths for next coming 31 days. Beside of this, estimation for the approximate number of isolation beds and ICU required has been carried out. The projection of the present model is to provide a base for the decision makers for making protection plan during COVID-19 pandemic.

A BRIEF STUDY OF “BHĀVANĀ AND CAKARAVĀLA ALGORITHM”

¹Gaurav Agrawal, ²Nidhi Handa, ³Omkar Lal Shrivastava

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This paper deals with the method of Bhāvanā and Cakaravāla algorithm for solving general quadratic indeterminate equations (*Varga-prakṛti*). Brahmagupta (628 CE) was the first who gave method of Bhāvanā after this Jayadeva and Śripati (11th century) led the foundation for Cakravāla algorithm, while Bhāskara II (1150 CE) and Nārāyaṇa Paṇḍit (1350 CE) made further extensions and gave clarification with examples in his *Gaṇita Kaumudī*. We analyze the hypothesis and proofs of the algorithm, take some examples present in earlier texts, and compare results by putting them in tabular form.

A STUDY ON B-OPEN SET IN TOPOLOGICAL SPACE

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Using the concept of β -open set and β -closed set, we introduce and study topological properties of β -limit points, β -derived sets, β -interior and β -closure of a set, β -interior points, β -border, β -frontier and β -exterior.

CHOOSE THE ONE AMONG VARIOUS AVAILABLE OPTIONS USING THE TECHNIQUES OF OPERATIONS RESEARCH

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We have numerous resources available in the market to prepare our daily stomach requirements. In almost every house, there is available at least one source for preparing the food items. Some have only one, others have more than one instruments for this very purpose. In this paper I have taken three resources and then compared their utility. The methods of sequencing techniques are used here.

EFFECT OF CHEMICAL REACTION ON HEAT AND MASS TRANSPORT PROCESS ON MHD NANOFUID FLOW PAST A VERTICAL ELONGATING SURFACE CONSIDERING SLIP CONDITIONS AT THE BOUNDARY

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A numerical investigation has been carried out using Matlab solver bvp4c to inspect the transport process of heat and mass on nanofluid flow past a surface that is assumed to stretching exponentially. The effect of chemical reaction, viscous dissipation, radiation and slip conditions at the boundary have been incorporated in the current work. The consequences of various parameters on the flow, temperature and concentration of the fluid are portrayed by graphs while values are computed to analyse the effect on dimensionless shear stress at the surface, thermal and mass transport phenomenon. The incorporation of chemical reaction boosts the mass diffusivity thereby reducing the nanoparticles volume fraction near the sheet. In fact, the volume fraction of nanoparticles is affected by many important parameters in the current study. The correctness of the work is verified by making a comparison of the current outcome with related published work.

EXAMINATION OF IMPACTING VARIABLES INSTUDENTS FOR ACCOMPLISHMENT IN MATHEMATICS

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The motivation behind the study is to investigate the degree of demeanour toward critical thinking and math accomplishment among students. This concentrate likewise notices the connection between the degree of persistence, certainty, and readiness towards critical thinking. This examination utilizes one bunch of surveys to accumulate information. The information is then broken down involving The Measurable Package for Sociology (MPS). The illustrative and inferential insights investigations are utilized to examine all the exploration questions.

The examination uncovers that the degree of persistence, certainty, and readiness towards critical thinking is medium. The discoveries likewise show that there is a huge connection between the degree of persistence toward critical thinking and scientific accomplishment.

Then again, the finding shows that there is no critical connection between the degree of certainty and ability towards critical thinking and arithmetic accomplishment. This examination additionally mirrors that there is a critical connection between mentality (tolerance, certainty, and eagerness) toward critical thinking and math accomplishment. At long last, the exploration reaches determination and suggestion in view of student's demeanour towards critical thinking and the ways of working on understudies' accomplishment in math.

STUDY OF VEDIC MATHEMATICAL TECHNIQUES TO SPEED UP THE BASIC MATHEMATICAL CALCULATIONS

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An understudy, in any event, being splendid in mathematics, is not ready to acquire the greatest imprints in the tests. On the off chance that we are discussing the cutthroat tests, again we need to finish the job within an extremely brief timeframe or we can say that we need to overcome the given undertaking in the restricted time. Again here we need to take the most limited strategy to tackle the issues. So all the arrangement of these issues is intrinsic in Vedic Math. It was created in the year 1957 in view of 16 sutras and some sub-sutras.

Starting with the ground works of Vedic science, for example, the significance of Vedic arithmetic, this article looks at numerical tasks utilizing Vedic math. Vedic math is an essential science, however it is a superior technique to do math. It has a brilliant future in front of it, and it will support learning science top to bottom with clear clarifications.

A VEDIC APPROACH IN DIVISION

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Division and long division are the most important as well as critical arithmetic operations. This paper includes an action research on the group of 20 students of graduation level who are selected from 50 students. This study is based on the uses of Nikhilam (निखिलम) and Pravartya Pojyet (परावर्त्य योजयेत) method to do division problem involving tables near about 1000. Division operations are used in many problems such as square roots, cube roots etc. Vedic method based on Nikhilam (निखिलम) sutra and Pravartya Yojyet sutra (परावर्त्ययोजयेत) (transpose and apply) is used by these students for enhancing the mental capability and reducing the time duration during the session. The main components of the paper are accuracy and fast calculation.

INFLUENCE OF SERVICING RATE ON VARIOUS QUEUING ENTITIES OF A NETWORK QUEUING MODEL IN STEADY STATE

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In this paper, we make an effort to investigate the steady-state behaviour of a complicated Network queuing model in which a shared channel is connected serially to two systems, one of which has a tri cum biserial channel and the other has three parallel channels. This study aims to look into how different queuing entities are affected by service rates. The Poisson law is adhered to by the service pattern's arrivals. We have estimated average waiting time, queue length and probabilities using generating function technique, calculus and statistical tools. The approach is useful for making decisions in a variety of contexts, including the banking sectors, communications, commercial services, and numerous bureaucratic settings.

THE SOLUTION OF BURGERS EQUATION BY ACCELERATED HOMOTOPY PERTURBATION TRANSFORMATION METHOD

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In the current study, a hybrid algorithm called "Accelerated Homotopy Perturbation Transformation Method (AHPTM)" is used to solve nonlinear burgers equation by combining the well-known semi-analytical approach "Homotopy Perturbation Method (HPM)" and an integral transform called the "Laplace transform." The outcomes obtained by AHPTM are contrasted with outcomes that have already been published in literature.

QUANTUM STABILIZER CODES BASED ON NON-CYCLIC HADAMARD DIFFERENCE SETS

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In this paper, the quantum stabilizer codes (QSC) over non- cyclic Hadamard difference set (HDS) with parameters $(4m^2, 2m^2 - m, m^2 - m)$, where m is a positive integer are discussed. The Symplectic inner product (SIP) condition for HDS over binary operation for parity check matrices are obtained to affirm the commutative condition for Stabilizer operators. For application, we constructed a difference set with parameters $(16, 6, 2)$ for $m = 2$ of ordered pair of the group $\mathbb{Z}_2 \times \mathbb{Z}_8$ (non-cyclic group) and QSC are obtained by parity-check matrix.

COMPUTATIONAL TECHNIQUES OF FUZZY STOCHASTIC MODEL FOR RAINFALL FORECASTING

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Fuzzy time series models have been put forward for Rainfall Prediction from many researchers around the globe .Fuzzy time series methods do not require any assumptions valid for classic time series approaches. The most important disadvantage of fuzzy time series approaches is that it needs subjective decisions, especially in fuzzification stage. This paper proposes a novel improvement of forecasting approach based on using first order fuzzy time series. In contrast to traditional forecasting methods, fuzzy time series can be also applied to problems, in which historical rainfall data of Trichy district. In this study reveals some feature of FTS predicting Rainfall and the results have been compared with other methods.

LACK OF THERMAL EQUILIBRIUM EFFECTS ON CONVECTION IN A SATURATED POROUS MEDIA WITH AN ELLIS FLUID

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The onset of thermal convection in an Ellis fluid-saturated porous medium in the presence of a horizontal pressure gradient yielding a basic through flow and subject to a lack of thermal equilibrium between the fluid and solid phases is investigated. The eigenvalue problem is solved analytically, and the condition for the onset of convection is obtained. It is found that the instability sets in an oscillatory mode contrary to the manifestation of stationary convection in a Newtonian fluid-saturated porous layer. The effects of local thermal non-equilibrium (LTNE) and Ellis fluid parameters are discussed on the onset of convection. It is found that an increase in the Ellis power-law index and the scaled interphase heat transfer coefficient is to delay the onset of convection, while an opposite behavior is observed with an increase in the Darcy-Ellis number and the porosity-modified conductivities ratio. The pressure lines and isotherms are presented at the critical state. The results delineated under the limiting cases agree with those published previously.

IMPLEMENTATION OF VEDIC TECHNIQUE AND ITS APPLICATIONS

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In algebra the Vedic mathematics used is based on the 16 sutras and 13 sub-sutras. This paper introduces us to the sutras and also shows how it is applicable to solve algebra problems. Unified mathematics is defined as a situation when methods are understood with reference to one another. In the part of the paper Vedic formulas are introduced with the help of examples which can be used to execute various mathematical computations like as addition, subtraction, division and accumulation. Vedic Mathematics is not only time saving but also help us to make quick and intelligent decisions for issues of great complexity. Vedic maths is helpful in reducing the burden of rote learning. Vedic maths is often defined as simple mathematics but this way to solve mathematics.

ANALYSIS OF DELAY DIFFERENTIAL EQUATION USING (DDE) VARIATIONAL ITERATION METHOD

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In the present paper we give Analysis of delay differential equation (DDE) using Variational iteration method.

Keywords- : Delay Differential Equations, Variational Iteration Method

ANALYTICAL STUDY OF SPIRITUAL INTELLIGENCE AND ADJUSTMENT OF ADOLESCENTS

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In order to increase emotional stability and improve adjustment spiritual values and methods play potential role. Values are connected to inherent property of human. A human who is committing to attain and experimentally validate values release positive energies, which always indicate towards success.

Adjustment means to utilize the skills and past experiences earned that integrate personal behaviour w.r.t. the society to which one belongs. Adjustment facilitates the needs to cope with life. A person can lead a happy, hopeful and productive life who has the ability of adjustment in whatever environment he finds himself.

The key objective of the present study is to explore how spiritual quality related with various facets of adjustment (home, educational, health, social and emotional) of college girls.

FORMULATION OF THE OPTIMAL ECONOMIC ORDER QUANTITY USING VARIOUS INVENTORY MODELS

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Decision making in production planning and inventory management is essentially an issue of dealing with huge numbers and a variety of external and internal elements. The formulation and solution of an inventory model are dependent on an item's demand per unit time, which can be interpreted as either deterministic or probabilistic. The classical economic order quantity (EOQ) model assumes that the things produced are of perfect quality and that the unit cost of production is not affected by demand. However, in reality, product quality is never ideal, and it is directly affected by the dependability of the manufacturing process. Inventories are ideal resources with monetary value. They are critical to manufacturing companies because they store the worth of the labour and processing processes utilised to create their products. Adequate inventories facilitate production and help to assure clients of good service. Carrying stocks, on the other hand, ties up working capital on things that are perfect, but not making any return on investment. As a result, inventory management's responsibility is to keep stocks at acceptable but not excessive levels. The goal of the basic inventory model is to calculate the best order quantity that minimises the overall incremental costs of inventory holding and order processing. In general, the inventory model's major goal is to reduce production costs while increasing profit. In this research, we attempted to establish an economic order quantity formula in various conditions based on the average cost of the item and demand rate while keeping finite production linked with the stock position in mind. We developed the EOQ for an optimal order level and the lowest average cost with uniform demand that meets the shortage criterion while analysing the problem.

FUNDAMENTAL ANALYSIS OF SPECULATING INVESTORS IN STOCK MARKET

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We investigate whether the negative correlation between total investment and future market returns might be attributed to the inclusion of speculative assets on the balance sheet. Speculative investments that are reported as intangibles upon acquisition often end up on the balance sheet. We discover that goodwill is primarily responsible for the previously noted negative correlation between total investment and future market returns, which is concentrated during more speculative times. Our results demonstrate the value of accounting measurement variations in forecasting overall economic outcomes. Particularly, measurement discrepancies allow investment to be divided between assets that are intrinsically speculative and assets that are based on market pricing. The study is to analyse the stock performance before and after the speculation done by the investors. In other words, how the factors like stock price, demand for particular industry, selling pressure etc. change after the speculation by participants in the market post some event or situation.

A CASE STUDY OF RESTAURANT TO UPGRADE THE SERVICE QUALITY USING QUEUING THEORY

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The mathematical analysis of queues is known as queuing theory. A model is built in queuing theory to anticipate queue lengths and waiting periods. A major issue that affects practically every renowned restaurant is that it loses clients as a result of a lengthy line. This displays the necessity for an arithmetic model so that restaurant control can superior comprehends the case. This paper seeks to demonstrate that, when put to the test with a real-world event, queuing theory satisfies the model. The data used by the authors to calculate the coming time, service time, usage rate, queue delay time, and likelihood that customers may return from the restaurant "THE GOLDEN SPOON" in Sambhal, U.P. The Little's Theorem and M/M/1 queuing model are used to examine the collected data. During our study period, the service rate at "THE GOLDEN SPOON" in Sambhal was 2.86 consumers per minute, at the same time the arrival rate was 2.85 cpm during the busiest time of the day. The restaurant has an average of 200 patrons, and its utilization rate is 0.996.

LITERATURE REVIEW ON MACHINE REPAIRABLE QUEUEING SYSTEM

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The current article's goal is to provide a historical overview of several significant research papers concerning queues in machining systems. The breakdown of machines occurs at random in manufacturing industries, where various tasks have to be done on machining stations, which results in queues of failed machines that need to be repaired. The repairable process may be done earlier to failure or can be done after the failure. The Failure of a machine could cause a considerable loss in production, income, or reputation. In order to provide a thorough catalogue for understanding the research in the repairable queuing domain, a careful list of books and research papers is also prepared in addition to references on queues in machining systems, also known as the "Machine Repair Problem". We categorized the pertinent literature into categories based on the methodological considerations and modelling considerations.

PREVALENCE OF INFERTILITY AND ITS ASSOCIATED RISK FACTORS ACROSS URBAN MILLENNIAL

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The notion of ‘triggered infertility’ or self-made infertility is rather a new research concept and drawn tremendous research attention. There is ample research on natural infertility and clinical management yet focus on triggered infertility is missing. The research concentrates on the proximal and distal determinants in line with bioecological approach and underline the gravity of the problem as emerging. The proximal determinants often involve the individual as an agency himself as well as the environment in which skilling is being undertaken. The distal correlates identify as the distinct uncertainties that shape up the opinion making and perception development with regard to state of triggered infertility. The research hence concludes the significant impact of millennia derived individual, vocational, career driven, health related, stress derived, contingent as well as sexual and reproductive malpractices; on triggering the state of infertility.

FLOW OF STRATIFIED INCOMPRESSIBLE NEWTONIAN FLUID THROUGH POROUS MEDIUM SANDWICHED BETWEEN PARALLEL PLATES

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The current study examines the flow of stratified incompressible Newtonian fluid through porous medium sandwiched between parallel plates. The mathematical model of our problem explains that the space between the parallel plates is filled with porous medium in which fluid flows. Brinkman equation has been used for the fluid flowing through the porous medium. The expressions for fluid velocity and flow rate have been achieved in its closed form by applying linear differential equation. As particular case when stratification factor is absent the fluid velocity and flow rate obtained. Variation in fluid velocity represented graphically. This study may be convenient infiltration of ground water, medical purpose and reservoirs.

CASE STUDY ON JOB SEQUENCING & SCHEDULING ALGORITHMS

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Job sequencing is a process in which a machine or number of machines performs a task in a particular order. In terms of selection in appropriate ways in which the number of jobs can be allotted in an exact or finite number of facilities (machine) so its output can reduce the cost and time and maximize the profit. Scheduling issues progress in various areas like Industries, roller bearing industries, textile industries, building construction, transportation, healthcare, hospitals, computer programming, and production planning and so on. Sequencing word indicates the deciding what order the jobs are to be processed on different machines. Scheduling is the process of creating a schedule that specifies the beginning and ending times of tasks for machinery, workers, etc. Resources are known as machines and tasks are known as operation (Job). The time variation method, a novel adjusted heuristic technique, is used to identify the required task sequence, and the normal procedure as shown in the examples above is also used to estimate the minimum total elapsed time for this sequence of jobs. The issues also offered an explanation for how N jobs were processed on 2 machines, N jobs were processed on 3 machines and N jobs M machines.

ECO FUNCTIONAL MATRIX

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Interest in environmental issues has increased enormously over the last few decades and environmental problems are perceived to be on the increase. Due to the fact that the number of products on the market increases enormously, it is evident that we face a great challenge to overcome the problem concerning our consumer society. An increasing barrage of legislation accompanied by the public's awareness of, and concern for, the environment forcing the industry to respond. Products and their environmental impact have moved to the centre stage and it is widely believed that designers have a key role in adapting products to a sustainable society. Three key issues are identified in this development scenario: (a) the importance of adapting products to a more sustainable society, (b) the specific situation facing the designer, especially in early design phases, and (c) balancing environmental impacts with functional preferences. Research in this thesis presents a theoretical framework for describing environmental issues and the role of the designer in product development, as well as functional characteristics of products in the early phases of design.. The overall concept proposed in this thesis is called the eco functional matrix, based on two parts: functional profile and environmental profile. The functional profile represent the functional characteristics and environmental profile the environmental characteristics respectively of a product in the early phases of design. The basic idea is to account for user and societal preferences as well as environmental impact when assessing alternative product concepts at early design stages. Balancing both the functional requirements and the negative environmental impacts of products is the road to sustainable development.

APPLICATION OF GAME THEORY

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This research paper looks into Game Theory while addressing the historical background of this theory. GT is the special branch of mathematics which has been used to study the situation of conflict of interest. The document also gives a definition and application of relevant terminologies related to this theory like a game and dominance which form the basis of the theory concept. While many game theorists certainly enjoy playing games, a 'game' is an abstract representation of many serious situations and has a serious purpose. It also focuses on mixed strategies, auction bidding and their relevant practical application of the concept as applied in the field of economics. It is utilized in economics to understand the economical behaviours such as behaviours of consumer and market. Its application provides a framework and a systematic quantitative approach or deciding the best strategy.

A STUDY OF COVID -19 THROUGH SAMPLING METHODS

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In this project, the study is based on the symptoms of Covid – 19 through Sampling Methods in the various places of Moradabad city.

The main objective of this project is to find out the symptoms of the noval corona virus using various sampling techniques and using the tools of statistics.

The Sampling is a statistical analysis tool wherein the data are collected from a few representative items of the universe, called as a sample, on the basis of which the characteristic of the entire population can be ascertained.

Sampling techniques used-

- Random Sampling
- Cluster Random Sampling
- Snowball Sampling

Statistics tools-

- Correlation
- Student t- test
- Rank

APPLICATION OF INTEGRAL CALCULUS

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There are two different rich fields of calculus: Differential calculus and Integral calculus. Integral calculus is much older than differential calculus. In this, we study the application of integral calculus in various fields like mathematics, physics, engineering, etc.

Integrals can be used for computing the area of a two-dimensional region that has a curved boundary, as well as computing the volume of a three-dimensional object that has a curved boundary. The area of a two-dimensional region can be calculated using the definite integral. Integrals are also used in physics, in areas like kinematics to find quantities like displacement, time, and velocity. For example, in rectilinear motion, the displacement of an object over a time interval. Integrals are also used in thermodynamics, where thermodynamic integration is used to calculate the difference in free energy between two given states.

STUDY ON LINEAR ALGEBRA AND MATRIX IN MATHEMATICS

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In this we are presenting a study on the linear algebra and matrix in mathematics. Linear algebra is the branch of mathematics concerned with the study of vectors, vector spaces (also called linear spaces), linear maps (also called linear transformations), and systems of linear equations. Vector spaces are a central theme in modern mathematics; thus, linear algebra is widely used in both abstract algebra and functional analysis. Linear algebra also has a concrete representation in analytic geometry and it is generalized in operator theory. It has extensive applications in the natural sciences and the social sciences, since non-linear models can often be approximated by linear ones.

APPLICATION OF GAME THEORY TO 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 that political actors have rational choices and conducts political analysis based on this premise qualifies as a rational choice approach. Modeling 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.

APPLICATION OF GRAPH THEORY

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Graph theory is a growing area as it is applied to area of mathematics, science and technology . It is being used in the field of chemistry , biochemistry, communication network and coding theory , computer science (algorithms and computation) and operation research and also used in various activities such as X – ray crystallography, radar , astronomy , coding theory , circuit design , communication network addressing, data base management. This paper gives an overview of the applicants of graph theory in heterogeneous field to some extent , but mainly focused on computer science applications that uses graph theory theoretical concepts . Various papers based on graph theory have been studied related to scheduling concepts , computer science applications and the overview or the brief summary/ description is represented here as abstract .

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.

A NEW METHOD BASED ON GA AND FUZZY PETRI NETS IS ABLE TO DETERMINE THE SCHEDULING A PROJECT WITH A TIME COST AND TRADE-OFF PROBLEM

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Any project will be successful or fail; it depends on proper scheduling and adequate planning of the project. When any project is getting failed, it lacks good scheduling or maybe any other cause; then this failure diminishes the grade of work, and most importantly, loss of a project must affect the budget and time of the project. Since the project's duration and completion budget is most important for companies in working projects. A hybrid soft computing technique presented in the paper, using the extension of fuzzy petri net for better planning and scheduling the project activity in traditional CPM/PERT. The two reasoning algorithms has been used to find the project's critical paths and developed an FTCTS-net program in the soft computing technique. The genetic search module is also used for optimizing the solutions of time-cost and trade-off problems in the model. The best thing of model, it is find the solution of problem nearest to ideal solution. The model gives a perspicuity into the time and cost-related management problems at different risk levels by decision making.

THE ITERATIVE SYSTEM OF ELLIPTIC EQUATIONS IN AN ANNULUS AND ITS POSITIVE RADIAL SOLUTIONS

Botta Bharathi

Andhra University and Gayatri Vidya parishad College of Engineering For Women

In this paper we consider the iterative system of elliptic equations

$$\Delta u_j + P(|x|)g_j(u_{j+1}) = 0, R_1 < |x| < R_2,$$

$$u_{l+1} = u_1, \quad j = 1, 2, \dots, l,$$

With one of the following sets of boundary conditions

$$u_j = 0 \text{ on } |x| = R_1 \text{ and } |x| = R_2,$$

$$u_j = 0 \text{ on } |x| = R_1 \text{ and } \frac{\partial u_j}{\partial r} = 0 \text{ on } |x| = R_2,$$

$$\frac{\partial u_j}{\partial r} = 0 \text{ on } |x| = R_1 \text{ and } u_j = 0 \text{ on } |x| = R_2.$$

By transforming the elliptic equations in to second order non-linear iterative system, we establish the existence of the positive radial solutions of the problem by an application of Krasnoselskii's fixed point theorem.

THE PERFORMANCE OF QUEUING MODELS CONSIDERING THE M/M/1/N QUEUEING SYSTEM WITH BALKING AND RENEGING

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An M/M/1/N queuing system with balking, renege, and server vacations is examined in this article. A negative exponential distribution shows how likely it is that consumers will renege on a promise. Speculation is rife that the server is on numerous vacations at once. To begin, we use the Markov process technique to derive the equations describing steady state probabilities in systems. Finally, a matrix is used to represent the steady-state probability. After that, we'll go over some system stats. In order to arrive at an appropriate service fee, we create a cost model based on the findings of the performance investigation. Finally, we explain how the model's parameters affect the system's behavior with numerical examples.

KEYWORDS Bulk queuing model, performance measures, Steady-state probability, Cost model, queuing theory

TO STUDY THE IMPACT OF COVID-19 AND STATISTICAL ANALYSIS OF THE PATIENTS OF VARIOUS DISEASES

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The purpose of this research paper is to discuss who effect the covid-19 pandemic on the patients of the various disease and analysis most common symptoms of covid-19 we can design a statistical table for find out the association between the various efficient symptoms. Data were entered through the survey and visit from Government and Private hospitals using an adapted SPSS version software package, we find with the help of correlation and regression logistic was done to identify possible most factor associated and its efficiency. In the end we give the conclusion by apply the correlation techniques and Standard deviation study for bivariate and multivariate analysis of the factor.

Key words: Covid - 19 – Mental health, SARS- COV, MERS- COV and SRS- COV – 2.



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