

ABID MAHBOOB S/O MAHBOOB ALAM

TENURED ASSOCIATE PROFESSOR (MATHEMATICS)

UNIVERSITY OF EDUCATION, LAHORE (PAKISTAN)

Personal Information

E-mail: abid.mahboob@ue.edu.pk

Mobile Cell # 0092-300-7538862

Work Experience: 14 years, Married **National ID** # 35302-8827242-1

Permanent Address: Shora Kothi, House # 272, Street # 1, Okara, Pakistan.

Academic Record with Detail of Subjects:

Course/Degree	School/College/ University	Subjects	Year of Passing	Division/ %age
PhD Pure Math (Algebra)	University of Science Technology of China, Hefei, (USTC) China	<ul style="list-style-type: none">Theory of Classes of GroupsTopics in Algebra (1)Introduction to China	2015	1 st
M. Phil Pure Math (Algebra)	GC University Lahore	<ul style="list-style-type: none">AlgebraFunctional AnalysisAd. Group TheoryModule Theory and Group RepresentationNumerical AnalysisNumerical Solutions of P'D Equations	2007	1 st / 83%

M. Sc Mathematics	GC University Lahore	<ul style="list-style-type: none"> Real analysis Algebra/Group Theory Topology& functional Analysis Computer Analysis & Differential Geometry Mechanics Mathematical Physics Numerical Analysis Rings and Module Category Theory with Applications Operation Research 	2006	1 st / 75%
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Awards and Scholarships:

- I got **Governor's Scholarship Scheme for Higher Education** in 2004.
- I got **Indigenous Scholarship from Higher Education Commission of Pakistan** in 2011.
- I got **Chinese Scholarship Council for PhD** in 2012.

Research Thesis:

- PhD Thesis:** “On Some Embedded Subgroups and Supplemented subgroups of finite groups”.
- M. Phil Thesis:** “Representation of Symmetric Group S_n , for $n = 6$ ”
- M. Sc Thesis:** Some Properties of Lie Groups.

Teaching Experience (14 years)

- Tenured Associate Professor & Coordinator (Department of Mathematics) **University of Education Lahore, Vehari Campus, Pakistan**, since 16-Nov. 2016 till date.
- Assistant Professor (Department of Mathematics) **University of Education Lahore, Okara Campus, Pakistan**, through IPFP 29-Sep, 2015-29-Sep, 2016.
- E-Lecturer/Instructor in **Virtual University of Pakistan**, Jan-2009 to Dec-2011.

Research Supervising:

I have been nominated as HEC Approved Supervisor since 2019. I have supervised the following students not only within UE Lahore, but also from other universities.

S. No	Name of Student	University/Institute	Title Thesis M. Phil
1.	Amir Sheikh	UE Lahore (Okara campus)	Supplemented Family of Subgroups and Chevalley Groups

2.	Madeeha Shaheen	UE Lahore (Okara campus)	On Character Table of Symmetric Group of Degree 9
3.	Saadia Munir	UE Lahore (Okara campus)	On Properties of Embedding Subgroups of Finite Groups
4.	Abdur Rehman	UE Lahore (Okara campus)	Supplemented Characteristics of CAP-subgroups
5.	Muhammad Javed Iqbal	UE Lahore (Okara campus)	Non-commuting Graphs of Isomorphic Groups
6.	Misbah Kiran	UE Lahore (Okara campus)	On Representation and Characters of $GL(2, Z_7)$
7.	Rana Wajid Ali	UE Lahore (Okara campus)	Commuting Graphs of Class of Dihedral and Cyclic Groups
8.	Zakra Yousaf	UE Lahore (Okara campus)	On Character Table of $GL(2, Z_5)$
9.	Taswar Hussain	UE Lahore (Okara campus)	Parametrization of A_5 and Partially t-Embedded Subgroups of Finite Groups
10.	Iftikhar Ali	UE Lahore (Okara campus)	Some Vital Properties of P-subgroups of Finite Groups
11.	Muhammad Abiad	The University of Lahore (Pakpaton Campus)	On Super Antimagic Labelling of Higher Order Graphs
12	Muhammad Farooq	The University of Lahore (Pakpaton Campus)	On Embedding Class of Subgroups
13	Saber shaker	The University of Lahore (Pakpaton Campus)	Antimagic Labelling and Its Characterization in Higher Order Graphs and Their Union
14	Zaima Rasheed	The University of Lahore	On The Character Table of Symmetric Group of Degree 8
15	Habiba Hanif	The University of Lahore	Role of Mellon Transformation in Cryptography
16	Rameez Shahzad	The University of Lahore	Construction of Coset Diagrams on Galois Field GF(19)
17	Umair Naveed	The University of Lahore	Construction of Coset Diagrams on Galois Field GF(p) for p = 23
18	Shakeela Rehman	The University of Lahore	Role of Fourier Transformation in Cryptography
19	Bahadur Ali	UE Vehari Campus	On a Class of Z-Embedded Subgroups on Finite Groups
20	Hafiz Muzammal Hussain	UE Vehari Campus	On a Class of n-Embedded Subgroups on Finite Groups
21	Muhammad Mustafa Naeem	UE Vehari Campus	On Affiliated Classes of Hall Embadded Subgroups on Finite Groups
22	Muhammad Nadeem	UE Vehari Campus	On Development of Substitution Boxes Through Polynomial Transformations over Subfields of Prime Field Z_p
23	Alishba	UE Vehari Campus	Generation of Substitution Boxes Through Coset Diagram and Triangle groups
24	Aysha Saleem	UE Vehari Campus	Effects of Constructed Substitution Boxes over Algebraic Field and its Applications in Image Encryption

25	Qurat ul ain	UE Vehari Campus	Impact of Various Energy forms in Simple Connected Graphs
26	Muhammad Waqas	UE Vehari Campus	On Study of Graphs in Text Encryption
27	Tania Shahid	UE Vehari Campus	Role of Spectrum in Simple Finite Graphs
28	Muhammad Waheed Rasheed	UE Vehari Campus	Analysis of Drugs Structures Through Distance Based Molecular Descriptors
29	Dur e Najaf	UE Vehari Campus	On Metric Dimension and Domination of Some Families of Graphs
30	Iqra Hanif	UE Vehari Campus	Influence of Degree Based Topological Invariants on Some Chemical Structures
31	Warda Noman	UE Vehari Campus	On Embedding Class of Finite Subgroups of Finite Groups
32	Jahangeer Karamat	UE Vehari Campus	On Class of Hall S-embedded Subgroups of Finite Groups
33	Kiran Shahazadi	UE Vehari Campus	On Development of Substitution Boxes Through Graph Theoretical Approaches and Applications with Image Encryption
34	Sameen Siddique	UE Vehari Campus	A Study on Physicochemical Properties of Medications for Anthrax Using Degree Based Topological Invariants
35	Muhammad Nasir Khan	UE Vehari Campus	QSPR Analysis of Tuberculosis Drug Through Distance Based Molecular Descriptors
36	Rabia Mahmood	UE Vehari Campus	Generation of a Novel Substitution Box Through Advanced Encryption Techniques and its Applications in Signal Transformation
37	Asima Parveen	UE Vehari Campus	Computation and Analysis of Degree-Based Topological Indices along with Regression Models for Anti-Pneumonia Drugs
38	Sikandar Shaheen	UE Vehari Campus	The Role of Distance Based Topological Indices in Characterization of Abid-Waheed Graph; $(AW)^m_n$
39	Sulaiman Tofail	UE Vehari Campus	Predicting Physicochemical Properties of Anti-Diabetes Drugs Using Various Topological Descriptors

PhD Co-Supervised Student:

Name of Student	Name of University	Title of Thesis	Completed Date
Iftikhar Ali	The University of Lahore	Influence of Embedded Class of Subgroups in Nilpotency and Solubility of Finite Groups	29 Aug. 2022

BS/Under Graduate Supervised Students:

I have supervised more than 45 BS students in Department of Mathematics at UE Vehari Campus.

Project Price winner:-

1-Project Title	A Novel Construction of Dynamic Substitution Box Dealing with McLaurin Series and Mellin Transformation
Student Detail	Muhammad Bilal S/O Zaheer Ahmad Registration No: 18-UE-04787 Session 2018-2022
Organized by	National Centre of Cyber Security (NCCS), Pakistan
Supervised by	Air University, Islamabad
Awarded Amount	PKR 100,000
Award Date	01-09-2023
Description	An award-winning cryptographic project focusing on the construction of a dynamic substitution box using McLaurin Series and Mellin Transformation. The project enhances the security of block cipher designs, improving resistance against cryptanalysis. Recognized nationally for innovation in cyber security.
2-Project Title	Novel Construction of Dynamic S-boxes by Using Fractional Transformation and Polynomial Mapping under Galois Field GF (2^8)
Student Detail	Mishal Ismaeel D/o Muhammad Ismaeel Registration no. 18-UE-05086 Session fall 2018-2022
Organized by	National Centre of Cyber Security (NCCS), Pakistan
Supervised by	Air University, Islamabad
Awarded Amount	PKR 100,000
Award Date	01-09-2023
Description	An award-winning cryptographic project focusing on the construction of a dynamic substitution box using McLaurin Series and Mellin Transformation. The project enhances the security of block cipher designs, improving resistance against cryptanalysis. Recognized nationally for innovation in cyber security.

Editor-in- Chief:-

I am operating the following journal;

Journal Name	Journal Link
NeoMathica journal of Emerging mathematical Sciences	https://journals.pagepal.org/index.php/NeoMathica

I am also a regular reviewers of several HEC impact factor journals.

Research Project:

- **Project Name:** NRPU (National Research Program of Universities) continuing till date.
- **Project Title:** On Some Properties of Prime Order Supplemented subgroups with impact in Solubility and Nilpotency of Finite Groups
- **Project Reference** No: Ref No. 20-17309/NRPU/R&D/HEC/2021 2021
- **Project No:** 17309
- **Funding Agency:** Higher Education Commission of Pakistan

Book Chapter Writing:

- **Authors:** Muhammad Akram, Sumaira Naz, Feng Li, **Abid Mahboob**,
- **Chapter Name:** Group Decision-Making Framework with Generalized Orthopair Fuzzy 2-Tuple Linguistic Information,
- **Book:** q-rung orthopair fuzzy sets: Theory & Application,
- **Published by Springer's**, 09 Sep.2022.

Courses Taught:

Courses Taught Throughout Career: -

- Advanced Group Theory, Finite Fields and Galois Theory and Groups, Modules and Vector Spaces to MS/M. Phil Classes, Advanced Graph Theory (***UE Okara Campus***)
- General Topology, Real Analysis, Graph Theory, Advanced Group Theory, Ring and Modules Introduction to Field Extensions, Functional Analysis, Real Analysis-II, Group Theory-II and Calculus to Graduate and Master Students. (***UE Vehari Campus***)
- Discrete Mathematics, Differential Equation, Business Mathematics and Linear Algebra, Introduction to Vector Space to Graduate and Master. (***Virtual University of Pakistan, Lahore***)

Administrative Experience: -

- ***Coordinator/Head*** Department of Mathematics, UE Vehari Campus from **16 New.2016** till date.
- ***Evening Coordinator*** of UE Vehari Campus from **2-Feb 2019** to **24-Jun 2019**.
- Member of ***Auction Committee***, UE Vehari Campus.
- ***Convener Dramatic Club*** and member ***Young Research Committee*** UE Vehari Campus.
- Chair sessions ***CORM 23& CORM 24*** and organizer of ***1st& 2nd International conferences*** held
- Department of Mathematics, University of Education Lahore on 4-5 Dec.2023 and 14-15 Mar.2025.
- A member of ***Purchase Committee***. UE Vehari Campus.
- A member of ***Self-Assessment Report*** (Math) by QEC of UE Lahore.
- A member of ***Board of Studies for Mathematics*** by UE Lahore.
- ***Transport Officer*** Jul-2007 to Jan-2009at FG Gunjshuker Sp. Edu. Okara.
- Conduct E-Exam as ***Superintendent at Virtual University campus Depalpore***.
- ***Transport Officer*** at UE Vehari Campus in 2020.
- ***Convener of Horticulture society*** UE Vehari on 20 Sep. 2022 till date.

Extra Curriculum\Interests:

- 2012 *National Mountaineering and Fitness Event & The 8th China Huangshan International Mountaineering Festival.*
- Participated in extra co-curriculum activities in *GC University, The University of Punjab* and various events/sports Organized by *International Students Office of USTC, Hefei, China.*

Research Publications:

1. Muhammad Waheed Rasheed, Abid Mahboob, Jahangeer Karamat, Warda Noman, A computational ranking thyroid Drugs Using Topological Indices, Grapg Entropy and Multi-Criteria Decision-making-Techniques, *Results in Chemistry*, 20 (1), jan.2026.
2. Muhammad Waheed Rasheed, **Abid Mahboob**, Ali Ovais, Nimra Shabbir, Abdu Alameri, Quantitative structure property relationship and multiattribute decision analysis of antianginal drugs using topological indice, *Scientific Reports*, 15(1),29324,11 August 2025.
3. Jalal Hatem Hussein Bayati, **Abid Mahboob**, Laiba Amin, Muhammad Waheed Rasheed, Abdu Alamari, Predictive modeling of asthma drug properties using machine learning and topological indices in a MATLAB based QSPR study, *Scientific Reports*, Vol: 15, 2025.
4. Muhammad Waheed Rasheed, **Abid Mahboob**, Warda Noman, *et al.* Evaluating Essential Vitamins: a modern approach integrating data and decision-making techniques. *Chemical Papers*, .Vol: 79, Issue 7, Pages:1-15, 17/7/2025.
5. Muhammad Waheed Rasheed, **Abid Mahboob**, Liaba Amin, et al. Ranking polycystic ovarian syndrome (PCOS) drugs using degree-based indices in QSPR models and CRITIC-driven MCDM Methods, *Scientific Report*, Vol: 15, Issue 1, Pages:1-20, 6/5/2025.
6. **Abid Mahboob**, Liaba Amin, Muhammad Waheed Rasheed, Multi-criteria decision making: Revealing Afinitor as the leading brain tumor drug Using CRITIC, CoCoSo, and MABAC methods combined with QSPR analysis via Banhatti indices. *Computers in Biology and Medicine*, Vol: 188, Issue 1, Pages:1-15, 4/4/2025.
7. **Abid Mahboob**, Muhammad Waheed Rasheed, Iqra Hanif, Laiba Amin and Abdu Alameri, Role of Molecular Descriptors in Quantitative Structure-property Relationship Analysis of Kidney Cancer Therapeutics, *International Journal of Quantum Chemistry*, Vol:124, Issue 1, Pages: 1-14, 5/1/2024.
8. **Abid Mahboob**, Muhammad Waheed Rasheed, Jalal Hatem Hussein Bayati, Iqra Hanif, Sajid Mahboob Alam, Bi-Distance Approach to Determine the Topological Invariants of Silicon Carbide, *Baghdad Science Journal*, Vol:6, Issue 1, Pages:1-12, 1/1/2024.
9. **Abid Mahboob**, Muhammad Waheed Rasheed, Iqra Hanif, Imran Saddique. Approximating the properties of some chemical solvents by two- dimensional molecular descriptors. *International Journal of Quantum Chemistry*, Vol: 124, Issue 1, Pages: 1078-1085, 6/1/2024.

10. **Abid Mahboob**, Muhammad Waheed Rasheed, Aya Muhammad, Iqra Hanif, Liaba Amin, On quantitative structure-property relationship (QSPR) analysis of physicochemical properties and anti-hepatitis prescription drugs using a linear regression model, *Helijon*, Vol:10, Issue 4, Pages: 1-19, 29/2/2024.
11. **Abid Mahboob**, Muhammad Waheed Rasheed, Dur-Najuf, Muhammad Reza Farahani, A Novel Pyramid Graph Connection with the Formulation of Several Graph Theory Application, *Power System Technology*, Vol:48, Issue 1 Pages:1395-1405, 1/3/2024.
12. Mohammad Asif, Hind Y. Saleh, Areen A. Salih, Muhammad Waheed Rasheed, Abid Mahboob, Dur e Najaf, A Novel Complex Multi-Fuzzy Extension of N-Soft Expert Sets with Application, *Power System Technology*, Vol:48, Issue 1, Pages:882-913, 8/3/2024.
13. Muhammad Abdul Qayyum, Aya Muhammad Dhiaa, **Abid Mahboob**, Muhammad Waheed Rasheed, Abudu Almari, Extended Conformable K-Hypergeometric Function and Its Application, *Advances in Mathematical Physics*, Vol:2024, Issue 1, 13/3/2024.
14. **Abid Mahboob**, Zafer Ullah, Ali Ovais, Muhammad Waheed Rasheed, S. A. Edalatpanah, A MAGDM approach for evaluating the impact of artificial intelligence on education using 2-tuple linguistics q-rung orthopair fuzzy sets and Schweizer-sklar, *Frontiers in Artificial Intelligence*, Vol:7, Issue 1, Pages: 1-19, 14/3/2024.
15. Ejaz ul Haq,A novel **Abid Mahboob**, Muhammad Waheed Rasheed, Sumaira Sattar, Muhammad waqas Abudu Almari, Computing Connection-based Topological Indices of A NanoTubet, *South African Journal of Chemical Engineering*, Vol:48, Issue 1, Pages:121-29, 1/4/2024.
16. Abu Alameri, **Abid Mahboob**, Emad Toma Karash, Neighbourhood degree-based graph descriptors : A Comperihensive analysis of connectivity patterns in diverse graph families and their applicability, *Acadlore Transactions on Applied Mathematics and Statistics*, Vol:2, Issue 1, Pages: 52-63, 2/4/2024.
17. Muhammad Waheed Rasheed, **Abid Mahboob**, Iqra Hanif, investigating the properties of octane isomers by novel neighbourhood product degree-based topological indices, *Frontiers in Physics*, Vol:12, Issue 1, Pages.1383-93, 8/4/2024.
18. Muhammad Waheed Rasheed, **Abid Mahboob**, Iqra Hanif, Uses of Degree-Based Topological Indices in QSPR Analysis of Alkaloids with Poisonous and Healthful Nature, *Frontiers in Physics*, Vol:12, Issue 1, Pages.1381-87, 18/4/2024.
19. Jalal Hatem Hussain, **Abid Mahboob**, Muhammad Waheed Rasheed, Dur e Najaf , On Partition Dimension and Domination of Abid-Waheed $[(AW)]_{-r^4}$ Graph, *Baghdad Science Journal*, Vol:21, Issue 5, 1/5/2024.
20. Muhammad Waheed Rasheed, **Abid Mahboob**, Iqra Hanif, On QSAR modelling with novel degree-based indies and thermodynamics properties of eye infection therapeutics, *Frontiers in Chemistry*, Vol:12, Issue 1, Pages.1383-93, 26/5/2024.

21. Hao Zhou, **Abid Mahboob**, Muhammad Waheed Rasheed, Ali Ovais, Muhammad Kamran Siddiqui, Imran Zulfiqar Cheema, **On QSPR Analysis of Molecular Descriptor and Thermodynamic Features of Narcotic Drugs, Polycyclic Aromatic Compounds, Vol: 44, Issue 5, Pages:3079-3099, 27/5/2024.**
22. Muhammad Waheed Rasheed, **Abid Mahboob**, Anfai Nabeel, Israa Badi, Zainab Ali, Enhancing Breast Cancer Treatment Selection Through 2TLIVq-ROFS-based multi-attribute group decision making, **Frontiers in Artificial Intelligence**, Vol:7, Issue 1 Pages:14027-19, 3/6/2024.
23. Jelal hatem, Ali Ovais, **Abid Mahboob**, Muhammad Waheed Rasheed, Face Irregular Evaluations of family of grids, **AKC International Journal of Graphs and Combinatorics**, Frontiers in Artificial Intelligence, Vol:2, Issue 1 Pages:1-19, 9/7/2024,
24. Muhammad Waheed Rasheed, **Abid Mahboob**, Muhammad Bilal, Kiran Shahzadi, Block cipher construction using minimum spanning tree from graph theory and its application with image encryption. **Science Progress**, Vol: 107, Issue 4, Pages:1-17, 10/12/2024.
25. Ali Raza, Muhammad Waheed Rasheed, **Abid Mahboob**, Mishal Ismail, Neighborhood Face Index::A New Quantitative Structure Property Relationship (QSPR) Approach for Predicting Physical Properties of Polycyclic Chemical Compounds., **International Journal of Quantum Chemistry**, Vol. 124, Issue 24, Pages: 1591-1596, 15/12/2024.
26. **Abid Mahboob**, , Muhammad Waheed Rasheed, Jahangir Karamat, Warda Noman, et al, On Nearly S-permutable and Nearly Hall S-embadded Subgroups: Implications for Supersolubility and Nilpotency in Groups. **Kashf Journal of Multidisciplinary Research**, Vol: 12, Issue 1, Pages: 90-97, 30/12/2024.
27. **Abid Mahboob**, , Muhammad Waheed Rasheed, Jahangir Karamat, Warda Noman, et al, On Weakly Conjugate ζ -Permutable Subgroups of Finite Groups. **Social Science Review Archives**, Vol: 2, Issue 2, Pages: 2078-2084, 31/12/2024.
28. Sadam Hussain, Muhammad Asif, Tariq Shah, **Abid Mahboob** and Sayed M. Eldin, Redesigning the Serpent Algorithm by PA-Loop and Its Image Encryption Application, **IEEE ACCESS** (2023).
29. Rana Muhammad Zulqarnain, Imran Siddique, **Abid Mahboob**, Hijaz Ahmad, Sameh Askar Shahid Hussain Gurmani, Optimizing Construction Company Selection Using Einstein Weighted Aggregation Operators for q-Rung Orthopair Fuzzy Hypersoft Set, **Scientific Reports**, 2023.
30. Construction of highly non-linear component of block cipher based on maclurin series and Mellin transformation with application in image encryption, **Multimedia Tools and Applications**, 2023.
31. **Abid Mahboob**, Muhammad Asif, Muhammad Zulqurnian, Imran Saddiq Semeh Askar, A mathematical approach for generating a highly non-linear S-box for data security using quadratic fractional transformation, **Computers, Materials & Continua** Vol:77, Issue 2, 1/12/2023.

32. A Study of Text-Theoretical Approach to S-box Construction with Image Encryption Applications, *Scientific Reports*, Vol:13, Issue 1, Pages: 1-14, 29/11/2023.

33. **Abid Mahboob**, , Muhammad Waheed Rasheed, Liaba Amin, Iqra Hanif. A study of novel molecular descriptors and quantitative structure–property relationship analysis of blood cancer drugs. *The European Physical Journal Plus*, Vol: 138, Issue 9, Pages: 1-16, 28/9/2023.

34. **Abid Mahboob**, Lie Huang, Muhammad Kamran Siddiqui, Muhammmad Imran Muhammad Waheed Rasheed,, On QSPR Study of Energies and Thermodynamic Aspects of Anti-Malaria Medicines, *Physica Scripta*, Vol:48, Issue, 11, Pages.152-65, 9/10/2023.

35. **Abid Mahboob**, Muhammad Asif, Rana Muhammad Zulqarnain, Imran Siddique, Hijaz Ahmad, Sameh Askar, Giovanni Pau, An Innovative Technique for Constructing Highly Non-Linear Components of Block Cipher for Data Security Against Cyber Attacks, *Computer Systems Science and Engineering*. 28-July 2023.

36. **Abid Mahboob**, Muhammad Waheed Rasheed, Jalal Hatem Hussein Bayati, Iqra Hanif, Computation of Several Banhatti and Reven Invariants of Silicon Carbides, *Baghdad Science Journal*,20/6/2023.

37. Hao Zhuo, **Abid Mahboob**, Muhammad Waheed Rasheed, Ali Ovais, Muhammad Kamran Siddiqui and Imran Zulfqar Cheema, Analysis of Molecular Descriptor and Thermodynamic Features of Narcotic Drugs in Quantitative Structure-Property Relationship, *Polycyclic Aromatic Compounds*, 5/7/2023.

38. Sajid Mahboob Alam, Niat Nigar, Jalal Hatem Hussein Bayati, Muhammad Waheed Rasheed, **Abid Mahboob**, Analysis of Various Invariants in Ortho and Para Network, *Neuroquantology*, Iss (6), Vol:21, Pages.1216-36. **2023**.

39. Rongbing Huang, **Abid Mahboob**, Muhammad Waheed Rasheed, Sajid Mahboob Alam, Muhammad Kamran Siddiqui, On molecular modeling and QSPR analysis of lyme disease medicines via topological indices, *Eur. Phys. J. Plus* 138-243, 2023.

40. Muhammad Waheed Rasheed, **Abid Mehboob** and Iqra Hanif, An estimation of physicochemical properties of heart attack treatment medicines by using molecular descriptor's, *South African Journal of Chemical Engineering*, Volume 45, 20-29, 1/7/ 2023.

41. **Abid Mahboob**, Taswer Hussain, et al, Minimal CSS-Supplemented Subgroups of Finite Groups, *AIP Advances*, 30/9/2023.

42. **Abid Mahboob**, Muhammad Waheed Rasheed, Hosaya Polynomial and Weiner Index of Abid-Waheed Graph $(\mathbf{AW})_p^6$, Applied and Computational Mathematics. Volume 11, Issue 4, August 2022, Pages 89-94.

43. **Abid Mahboob**, Sajid mahboob, Muhammad M.M. Jaradat, Nigiat Nigar, Imran Saddique, On Some Properties of Multiplicative Topological Indices in Silicon-Carbon, *Journal of Mathematics*, 2022.

44. Alam. Sajid Mahboob, Fahd Jarad, **Abid Mahboob**, Imran Siddique, Taner Altunok and Muhammad Waheed Rasheed. "A Survey on Generalized Topological Indices for Silicon Carbide Structure." *Journal of Chemistry* 2022.

45. **Mahboob Abid**, Dalal Alrowaili, Sajid Mahboob Alam, Rifaqat Ali, Muhammad Waheed Rasheed, and Imran Siddique. "Topological Attributes of Silicon Carbide $\text{SiC}_4\text{-II}[i, j]$ Based on Ve-Degree and Ev-Degree." *Journal of Chemistry*, 2022.

46. **Mahboob, Abid**, G. Muhiuddin, Imran Siddique, and Sajid Mahboob Alam. "A View of Banhatti and Revan Indices in Chemical Graphs." *Journal of Mathematics*, 2022.

47. Siddique, Imran, G. Muhiuddin, **Abid Mahboob**, and Muhammad Waheed Rasheed. "Various Uses of Topological Invariants in Jahangir Graph $J\beta, \alpha$." *Journal of Mathematics*, 2022.

48. Sajid Mahboob Alam, Niat Nigar, **Abid Mahboob** and Muhammad Waheed Rasheed, On Modified Topological Invariants of Various Networks. *Utilitas Mathematica*, 119, 46–64 , 2022.

49. **Abid Mehboob**, Muhammad Waheed Rasheed, & Iqra Hanif, On Some Scientific Results of Abid-Waheed Graph (AW_r^7), *Utilitas Mathematica*, 119, 36–45, 2022.

50. **Abid Mahboob**, Muhammad Asif, Imran Siddique, Aysha Saleem , Muhammad Nadeem, Dariusz Grzelczyk and Jan Awrejcewicz. "A Novel Construction of Substitution Box Based on Polynomial Mapped and Finite Field With Image Encryption Application", *IEEE ACCESS*, 2022.

51. **Abid Mahboob**, Muhammad Asif, Muhammad Nadeem, Aysha Saleem, Syed M. Eldin, Imran Siddique, A Cryptographic scheme for construction of substitution boxes using quantic fractional transformation, *IEEE ACCESS* 2022.

52. **Abid Mahboob**, Taswer Ali, Muhammad Altaf, Parameterization of Triangular Groups Isomorphic to least Simple group A5 of Projective Symplectic groups, *Technical Journal, UET Texila, Pakistan*.

53. Ying Wang, **Abid Mahboob**, Abdul Rauf, Zafar Ullah, Zahid Karim and Mamoona Karim, On α -Multiplier on Almost Distributive Lattices, *Journal of Mathematics*, Vol:1, Issue 1, Pages:1-4, 2021.

54. Jung Rye Lee, Aftab Hussain, Asfand Fahad, Ali Raza, Muhammad Imran Qurashi, **Abid Mahboob**, On ev and ve-Degree Based Topological Indices of Silicon Carbides, *Computer Modeling in Engineering &Sciences*, Vol:1, Issue 1, Pages:1-4, 2021.

55. Imrana Kousar, Saima Nazeer, **Abid Mahboob**, Sana Shahid and Yu-Pei Lv, Numerous graph energies of regular subdivision graph and complete graph, *AIMS Mathematics*, Vol: 6, Issue 8, Pages: 8466-8476, 2021.

56. **Abid Mahboob**, Taswer Ali, Misbah Akram, Sajid Mahboob, Nasir ali, Ali Raza,Characterization of Chevalley groups using order of the finite groups, *Journal of Prime Research in Mathematics*, Vol;10, Issue 1, Pages: 46-51, 2020.

57. Xiaoli Qiang, Kamran, **Abid Mahboob** and Yu-Ming Chu Numerical Approximation of Fractional-Order Volterra Integro differential, *Equation, Journal of Function Spaces*, Vol: 1, Issue 1, Pages:1-8, 2020.

58. Hong Yaung, **Abid Mahboob**, Asim Zafer, Iftikhar Ali, Zaferullah, Absaar Ul haq, On Quasi S-properly permutable subgroups of finite groups, *Journal of mathematics*, Vol:1, Issue 1, Pages: 1- 8, 2020.

59. **Abid Mahboob**, Taswer Ali, Sajid Mahboob, Block transitive 4(v, k, 4) design and Lie groups, *Southeast Asian Bulletin of Mathematics*, Vol.43, Issue 1, Pages: 101-104, 2019.

60. Adeel Farooq, Mustafa Habib, **Abid Mahboob**, Waqas Nazeer, Shin Min Kang, Zagreb Polynomials and redefined Zagreb indices of Dendrimers and Polyomino Chains, *Open Chemistry*, Vol.17, Issue 1, Pages:1374-1381, 2019.

61. Fei Deng, Xiuju Zhang, Mehdi Alaeiyan, **Abid Mahboob** and Mohammad Reza Farahani, Topological Indices of the Pent-Heptagonal Nano-sheets VC5C7 and HC5C7, *Advances in Materials Science and Engineering*, Vol:12, Issue 1, Pages:1-12.

62. **Abid Mahboob**, Taswer Ali and Iftikhar Ali, On Nearly c-permutable subgroups of finite groups, *Technical Journal of UET Texila, Pakistan*, Vol. 24, Issue 2, 2019.

63. Lian Chen, **Abid Mehboob**, Haseeb Ahmad, Waqas Nazeer, Muhammad Hussain, and M. Reza Farahani, Hosoya and Harary Polynomials of $TOX(n)$, $RTOX(n)$, $TSL(n)$ and $RTSL(n)$, Discrete Dynamics in Nature and Society, Vol:1, Issue 1, Pages 1-18, 2019.

64. Zhihua Chen, Saba Ayub, Waqas Mahmood, **Abid Mahboob** and Chahn Jung, A study of roughness in modules of fractions, *IEEE Access*, Vol:7, 2019.

65. Lian Chen, **Abid Mahboob**, Taswer Hussain & Iftikhar Ali, Influence of partially τ -embedded subgroups of prime power order in Supersolubility and p-Nilpotency of finite groups. *Journal of Taibah University for science*, Vol: 13, Issue 1, Pages: 1044–1049, 2019.

66. Juanyan Fang, Iftikhar Ahmad, **Abid Mahboob**, Kashif Nazar and Haseeb Ahmad, Irregularity of block shift networks and Hierarchical Hypercube networks, *Journal of Chemistry*, Vol:1, Issue 1, Pages: 1-12, 2019.

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