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Preface to the Journal of Scientific Enquiry (JSE), Fourth Volume, First Issue 2024

It is my pleasure to introduce this fourth volume of the Journal of Scientific Enquiry, containing a few selected articles. I welcome you to the Vol. 4 Issue 1 of Journal of Scientific Enquiry (JSE). You will recall that in earlier volumes I made our commitment to publish high-quality, impactful articles. This time JSE publishes eleven peer-reviewed scientific articles of significance in all areas of Science research work.

Das et al. have demonstrated the architecture of UOWC system using green laser-diode (LD) applying quadrature-amplitude-modulation and Orthogonal-frequency-division-multiplexing (QAM-OFDM) data-transmission. 12.5 Gbps data are transmitted successfully over 27.5 m, 26 m and 24.5 m distances for 64, 128 and 256 QAM respectively and BER values are 5.23×10^{-9} for 64-QAM-OFDM, 4.17×10^{-9} for 128-QAM-OFDM and 1.72×10^{-9} for 256-QAM-OFDM in coastal-water environment. They also obtained clear constellation diagrams, low BER values and good Q-values by employing the proposed architecture.

Pal studied the capability of different machine learning methods for predicting brain stroke at an early stage. Here we applied different machine learning methods such as logistic regression, gaussian naive byes, and Decision tree classifiers to produce significant results with 95% accuracy to identify it. Decision trees and naive byes give a significant probabilistic result to predict the chances of brain stroke in a person in the early stage.

Das et al. says this study is about the gradient almost quasi-Yamabe solitons and gradient Yamabe solitons inside the setting of 3-dimensional Lorentzian β -Kenmotsu manifolds. It is shown that if a 3-dimensional Lorentzian β -Kenmotsu manifold admits a gradient almost quasi-Yamabe soliton, then either the manifold is of constant sectional curvature $\kappa = -\beta^2$ or the gradient of the potential function f is pointwise collinear with ξ . Also, if the second order metric tensor field g of a 3-dimensional Lorentzian β -Kenmotsu manifold is a gradient quasi-Yamabe soliton, then either the manifold is of constant sectional curvature $\kappa = -\beta^2$ or the gradient of the potential function f is pointwise collinear with ξ .

Dutta studied One of the open problems in metric fixed point theory is: Does every equivalent renorming of the classical Banach space $(C_0, \|\cdot\|_\infty)$ have the weak fixed point property? In this paper, we present some equivalent renormings of $(C_0, \|\cdot\|_\infty)$ with the weak fixed point property and also give an alternative proof for the weak fixed point property of $(C_0, \|\cdot\|_\infty)$.

Badyakar has introduced a generalized concept of metric spaces, named generalized soft metric space, based on soft points of soft sets, and some basic properties regarding generalized soft metric space are studied with examples. After that, we established a fixed point theorem on generalized soft metric space.

Kumar et al. indicate that diabetes patients had significantly higher levels of anxiety and depression compared to healthy individuals. The t-test results show a significant difference between the two groups in overall quality of life and its various domains, including physical, psychological, social relationships, and environmental aspects. The study found that diabetes patients had lower levels of quality of life compared to healthy subjects. It is also found that anxiety and depression are significantly negatively related to the quality of life and its domains.

Midya mixed micellar system containing an anionic gemini surfactant with charged (cationic) surfactant has been studied by using surface tension method under standard condition in aqueous medium. The Clint approach was employed to determine various parameters like critical micelle concentration (cmc), surface excess concentration (Γ_{excess}), surface pressure at cmc (π_{cmc}), minimum area per molecule (A_{min}) etc as well as different thermodynamic parameters. The properties of the mixtures indicate spontaneous formation of thermodynamically stable micelles.

Samai has emphasized a $\text{PhI}(\text{OAc})_2/\text{KBr}$ mediated facile, efficient and highly convergent route has been achieved for the synthesis of 1,2,3-tribromo 4-aryl naphthalenes from 1,4-diaryl-1,3-butadiynes via electrophilic carbocyclization in water medium. Aqueous KBr acts as the bromide source in presence of hypervalent iodine $\text{PhI}(\text{OAc})_2$, which promotes the carbocyclization reaction. 1,3-Diynes are insoluble in water; and to overcome this issue, the reaction was planned within micelles using of CTAB surfactant.

Kundu has study that a single adult morph of *M. lamarrei* can kill and consume 1 to 120 numbers of mosquito larvae per day depending on the prey instars, prey density and scanned volume of water. The preference of prey instars as revealed through the rate of predation remained $\text{II} > \text{III} > \text{I} > \text{IV}$, while the maximum amount of predation was observed at the lowest volume of water. The attack rate ranged between 0.07 L - 4.69 L and the handling time ranged between 0.21 min - 9.32 min, which differed with the volume of water in the experiments.

Padma et al. study on on the Chaka watershed, a tributary river Kumari situated in the Purulia district primarily characterized by granite gneiss, semi-arid climate, and undulating topography, underscores the severity of the situation. A total of 26 groundwater samples were gathered, and various water quality parameters were evaluated in the laboratory using standard procedures. ArcGIS (10.3) software prepared several thematic maps of physicochemical characteristics. A water quality index (WQI) was also constructed following the Brown Method and the results are discussed. This situation underscores the importance of adopting suitable measures to mitigate the problem of the watershed.

Azmi et al. shows that the prevalence of marital pressure among young females is relatively high, which impacts young women's mental health and overall well-being. Addressing these pressures necessitates the promotion of gender equality, strengthening support systems, and providing educational and economic opportunities to empower young women.

I hope that our readers will find articles/reviews presented in this volume of JSE interesting and informative. With new opportunities and challenges, we will continue to strive to make JSE more useful to the research community. I would like to acknowledge the support of readers, authors and referees contributing to the success and make the publication of this journal possible.

Please help us grow by citing the relevant articles that you read in JSE.

We look forward to receiving your contributions in the near future.

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