CONTENTS

Abstract: In the present paper, we establish some fixed point results for Suzuki type contractions in relational metric spaces. We show that the assumption of continuity is not a necessary condition for the existence of fixed points for the mappings considered herein. Some examples are presented to demonstrate the applicability of our theorems. Finally, we present an application of our results to nonlinear matrix equations.

Abstract: This paper presents some notions on dendrites, and we investigate the relations between topological transitivity, mixing, and periodic points on dendrites in view of the results given in [1]. The main result shows that the terminal periodic decomposition exists for topological maps. In particular, we show that there exists a regular closed decomposition $\mathcal{D} = D_0, \ldots, D_{n-1}$, for the dendrite D with finite decomposition Ideal $DI(T)$ equals to $\{1\}$ (where the dendrite $D = D_0 \cup \cdots \cup D_{m-1}$). Further, we establish some results on dendrites pertaining to the maps that are mixing, weakly mixing and relatively weakly mixing.

Abstract: We deal with the existence of solutions for two different set of problems

$$\begin{cases} \mathcal{F}\vartheta = \vartheta \\ \alpha_i(\vartheta) = \theta_\mathcal{X} \end{cases} \quad \text{and} \quad \begin{cases} \mathcal{F}\vartheta = \vartheta \\ \alpha(\vartheta) = \theta_\mathcal{X}, \beta(\vartheta) = \theta_\mathcal{X} \end{cases},$$

where $(\mathcal{X}, \| \cdot \|)$ is a Banach space and $\mathcal{F}, \alpha_i, \alpha, \beta : \mathcal{X} \longrightarrow \mathcal{X}$ $(i = 1, 2, \ldots, n)$ are mappings. We obtain two sets of sufficient conditions on $\mathcal{F}, \alpha_i$ and $\mathcal{F}, \alpha, \beta$; which separately ensure the existence of non-unique solutions to the above systems. We deduce a common fixed point result from one of our obtained results and give suitable interesting examples (including matrix algebra) to validate our results.

Sushanta Kumar Mohanta

Abstract: In this paper, we establish a coincidence point and common fixed point result for a pair of selfmappings satisfying some generalized contraction type conditions involving a control function and a digraph on 0-complete partial metric spaces. As an application of this result, we obtain several fixed point results for cyclic mappings on complete metric spaces.

Pratap Basak and Sanjay Mallick

Abstract: The paper is devoted to study value distribution of L-functions via its uniqueness with general meromorphic functions. Our results improve and generalize a result of Li [6]. We also introduce a new notion for the above purpose.

Hassan Al-Zoubi, Tareq Hamadneh and Ahmad AA. Alkhatib

Abstract: In this article, we introduce an important class of surfaces, namely, quadrics in the Euclidean 3-space $\mathbb{E}^3$. We prove that spheres, planes, and circular cylinders are the only quadric surfaces whose Gauss map $\boldsymbol{n}$ satisfies a relation of the form $\Delta^I \boldsymbol{n} = M\boldsymbol{n}$, where M is a square matrix of order 3 and Δ^I is the Laplace-Beltrami operator corresponding to the first fundamental form I of the surface.

Biswajit Rath, K. Sanjay Kumar, D. Vamshee Krishna, Ch. Vijaya Kumar, and N. Vani

Abstract: The paper contains an estimation of the best possible upper bound (UB) for the third, fourth order Hankel determinants, 2-fold and 3-fold symmetric functions associated with bounded turning functions of order $\alpha(0 \leq \alpha < 1)$, for a particular value of the parameter α.

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