Conclusion

In this discourse, we have studied the existence of common fixed points for generalized cyclic contractions and rational type cyclic contractions in G-metric spaces by utilizing the notion of (A, B)-weakly increasing mappings and α-admissible mappings. Furthermore, by utilizing the simulation functions and C-class functions, Ćirić type contractions are studied to examine existence and uniqueness of common fixed points in the context of quasi-metric spaces and its consequences to G-metric spaces are discussed. Also constructive examples are provided to check validity of the conceived results.

Moreover, generalized (ψ, ϕ)-Wardowski contractions for three mappings is introduced to establish a condition for discontinuity of common fixed point for three mappings in G_b-metric spaces. Further, its application to neural networks is discussed.

Finally, extended $\Gamma - C_F$-simulation functions and generalized $\Gamma - C_F$-simulation functions are introduced to study common fixed point results for Geraghty type contractions, almost Suzuki type contractions and weak contractions for pair of mappings. Application to integral equation is provided. These obtained results correlate, generalize and unify several results in the exiting literature.

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