MULTIVALUED $R_{\psi,\phi^*}$-WEAKLY CONTRACTIVE MAPPINGS IN ORDERED CONE METRIC SPACES WITH APPLICATIONS

NAYYAR MEHMOOD*, AKBAR AZAM** AND LJUBIŠA D.R. KOČINAC***

*Department of Mathematics and Statistics, International Islamic University
H-10 Islamabad, Pakistan
E-mail: nayyarmaths@gmail.com

**Department of Mathematics, COMSATS Institute of Information Technology
Chak Shahzad, Islamabad 44000, Pakistan
E-mail: akbarazam@yahoo.com

***University of Niš, Faculty of Sciences and Mathematics, 18000 Niš, Serbia
E-mail: lkocinac@gmail.com

Abstract. In this article we define multivalued $R$-weakly contractive multi-valued mappings in ordered cone metric spaces without assumption of normality on cone, and generalize many results existing in the literature. We provide applications to solutions of integral inclusions and give non-trivial examples to support our main theorem.

Key Words and Phrases: Ordered cone metric space, multi-valued mapping, $R$-weakly contractive mapping, differential inclusion.

2010 Mathematics Subject Classification: 47H10, 54H25.

Acknowledgements. The authors thank the referee for his/her careful reading of the paper and a number of remarks and suggestions which led to improvements on several places.

References


Received: September 30, 2014; Accepted: October 30, 2015.