

**BULLETIN OF THE
ALLAHABAD MATHEMATICAL SOCIETY**

Vol. 30, Part 2, 2015

CONTENTS

N. Ahmed and D. J. Bhattacharyya

MHD NATURAL FLOW PAST AN EXPONENTIALLY ACCELERATED
VERTICAL PLATE 147-171

Abstract: This paper deals with an exact solution to the problem of an MHD natural chemically reacting flow past an exponentially accelerated vertical plate embedded in a porous medium in presence of a uniform transverse magnetic field. The resultant system of the governing equations is solved by Laplace-Transform technique in closed form. The expressions for the velocity field, the temperature field, the concentration field, the coefficient of skin friction at the plate in the direction of flow and the coefficient of heat and mass transfer in terms of Nusselt number and Sherwood number at the plate are obtained and their nature are demonstrated graphically for different values of the parameters involved in the problem.

Lakshmi Kanta Dey and Saranan Mondal

BEST PROXIMITY POINT OF F -CONTRACTION IN COMPLETE
METRIC SPACE 173-189

Abstract: In the article, we prove the existence and uniqueness of best proximity point on a new type of contraction namely F -contraction, perceived to be the most general nonlinear contraction, which is recently introduced in [Wardowski, D.: *Fixed point of a new type of contractive mappings in complete metric space*;

Fixed Point Theory and Applications, 2012, 2012:94]. Suitable examples are presented to substantiate our main result.

Shiju George and S. P. Bhatta

SOME FIXED POINT CHARACTERIZATIONS IN POSETS 191-199

Abstract: In this paper, a generalized notion of the fixed point property, namely the n -fixed point property, for posets is discussed. The n -fixed point property is proved to be equivalent to the fixed point property in lattices. Further, it is shown that a poset of finite width has the n -fixed point property for some natural number n if and only if every maximal chain in it is a complete lattice.

A. P. Ponraj and D. Sivaraj

ON NOWHERE *-DENSE SUBSETS OF AN IDEAL TOPOLOGICAL SPACES 201-210

Abstract: The aim of this paper is to extend the study of nowhere *-dense subsets in ideal topological spaces, introduced and studied by Acikgoz and Yuksel in 2007 and further studied by Zhaowen Lia and Funing Lina in 2013.

Giampietro Allasia

CONNECTIONS BETWEEN HERMITE-HADAMARD INEQUALITIES AND NUMERICAL INTEGRATION OF CONVEX FUNCTIONS I 211-237

Abstract: The aim of this paper is to investigate connections between Hermite-Hadamard inequalities and numerical integration of convex functions adopting strictly a unifying point of

view. In particular, the Hermite-Hadamard inequality on a simplex is used as a basic element for constructing various Hermite-Hadamard inequalities and integration procedures by a pseudo-barycentric domain subdivision.

R. D. Jagatap

CHARACTERIZATIONS OF REGULAR DUO Γ -SEMIRINGS 239-252

Abstract: In this paper we give several characterizations of a regular duo Γ -semiring by using left ideals, right ideals, ideals, quasi-ideals and bi-ideals of a Γ -semiring.

Uttam Kumar Khedlekar and Anubhav Namdeo

AN INVENTORY MODEL WITH STOCK AND PRICE DEPENDENT DEMAND 253-267

Abstract: Seasonal items have limited sale period, after it they became useless or completely deteriorated. In view of this, inventory Managers needs to makes a decision policy that attracts the costumers to buy more and sell the entire stock at the end of sale season. Management can change the strategy as reduce the selling price to generate excess demand for limited time duration. This paper aims to develop a continuous inventory model by changing the selling price of seasonal items. We maximized the profit by reducing price for stock dependent price sensitive demand and have shown that the profit function is concave and the model illustrated with numerical example followed by simulation study.

Ahmed Bendjeddou and Rachid Boukoucha

ON THE INTEGRABILITY OF TWO-DIMENSIONAL DIFFERENTIAL SYSTEMS 269-277

Abstract: In this paper we charecterize the integrability and introduce an explicit expression of first integral then consequently

the non-existence of periodic orbits of the 2-dimensional differential systems of the form

$$\begin{cases} x' = (P_n(x, y))^a + x(R_m(x, y))^b, \\ y' = (Q_n(x, y))^a + y(R_m(x, y))^b, \end{cases}$$

where n, m are positive integers, $a, b \in \mathbb{Q}$ and $P_n(x, y), Q_n(x, y), R_m(x, y)$ are homogeneous polynomials of degree n, n, m respectively. Concrete examples exhibiting the applicability of our result is introduced.
