CONTENTS

Abstract: "A calculus of sequences" started in 1993 by Ward
constitutes the general scheme for extensions of classical operator
calculus of Rota-Mullin considered by many afterwards and after
Ward. Because of the notation we shall call the Ward's calculus
of sequences in its afterwards elaborated form - a ψ-calculus.

The ψ-calculus in parts appears to be almost automatic, natural
extension of classical operator of Rota -Mullin or equivalently - of
umbral calculus of Roman and Rota.

This is a review article based on the recent author's relevant con-
tributions.

Abstract: We consider a two unit parallel system, wherein the
failure rate of a unit is constant and the repair time distribution is
a two stages Erlang distribution. Measures of system performance
such as reliability, system availability and steady state availabil-
ity are derived. Also a consistent asymptotically normal (CAN)

estimator, a $100(1 - \alpha)\%$ asymptotic confidence interval for the steady state availability of the system and a maximum likelihood estimator *(MLE)* of the system reliability are obtained.

V. S. S. Yadavalli, M. Jeeva Rajalakshmi Rajagopal and Martin L. William

A BIVARIATE OPTIMAL RECRUITMENT POLICY IN MANPOWER
PLANNING   35-45

Abstract: In many organizations, recruitment of personnel is made when the number of vacant positions due to wastage (exit) of employees reaches a threshold, say N or when there is an expansion of the organizations that takes place T years after the last recruitment, whichever occurs first. This is called a Bivariate recruitment policy or more specifically (N, T) recruitment policy . In this paper, such an organization is considered and an optimal (N, T) recruitment policy is obtained. This concept is analogous to the idea of replacement policy for a reparable system in Reliability theory. This is a new attempt of using the notions of Reliability theory in the field of manpower planning applied with appropriate changes. The idea developed in this paper would be of much use to an organization in guiding it to decide when to go in for a recruitment drive to fill up vacancies in the place of wastage and vacancies that are created for expansion of the organization with a view to minimize the long run average cost incurred. An hypothetical example is discussed to highlight the importance and applicability of the model.

Rasul A. Khan

Abstract: An inequality given by Mitrinovic in his book "Analytic Inequalities" is generalized for certain functions whose log transfomations are convex.

P. R. Sharma and Reena Chaturvedi

Abstract: Unsteady three-dimensional flow and heat transfer of a viscous incompressible fluid along a plane wall with variable suction and variable free stream velocity is investigated. The velocity and temperature fields are derived, discussed numerically and shown through graphs. The expressions of skin-friction coefficient and Nusselt number at the wall are derived, discussed numerically and their values are presented through tables.

C. Sunil kumar

Abstract: A graph G is decomposable into the subgraphs $G_1, G_2, G_3, ..., G_n$ of G if no $G_i, (i = 1, 2, 3, ..., n)$ has isolated vertices and the edge set $E(G)$ can be partitioned into the subsets $E(G_1), E(G_2), ..., E(G_n)$. If $G_i \cong H$ for every i, we say that G is H-decomposable and we write $H|G$. A graph F without isolated vertices is a least common multiple of the graphs G_1 and G_2, if F is a graph of minimum size such that F is both G_1-decomposable and G_2-decomposable. The size (the number of edges) of a least common multiple of two graphs G_1 and G_2 is denoted by $lcm(G_1, G_2)$.

4

In this paper we find $lcm(C_n, K_{1,1,l})$.

R. Muthucumaraswamy and T. Kulandaivel

MHD EFFECTS ON IMPULSIVELY STARTED INFINITE VERTICAL
ISOTHERMAL PLATE WITH VARIABLE MASS DIFFUSION   67-78

Abstract: In the present paper a theoretical solution for hydro-magnetic flow past an impulsively started infinite vertical isothermal plate with variable mass diffusion is obtained. The dimensionless governing equations are solved using the Laplace transform technique. The plate temperature is raised to T'_W and the concentration level near the plate is raised linearly with time. The solutions for the velocity and skin-friction are obtained for different Hartmann number and buoyancy effects aiding and opposing. It is observed that the velocity decreases in the presence of magnetic field, as compared to its absence.

Sushanta Kumar Mohanta and A. P. Baisnab

A CLASS OF ĆIRIĆ OPERATORS AND THEIR FIXED POINTS   79-88

Abstract: Some results on fixed points have been proved in this paper for a class of Ćirić operators so widened to include a number of well-known operators as available in recent fixed point theory.

H. B. Modi and G. A Ranabhatt

GENERALIZED ALTERNATING SERIES   89-98

Abstract: We know that the alternating series:

$\sum_{k=1}^{\infty} \frac{1}{2k(2k-1)} = 1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \dots$sum to ln (log) 2. In this paper we generalize this result and find the sum of the alternating

series:

$$\sum_{k=1}^{\infty} \frac{1}{rk(rk-1)} = \sum_{k=1}^{\infty} \left\{ \frac{1}{rk-1} - \frac{1}{rk} \right\}, \text{ for } r \text{ a positive rational}$$

number, $r > 1$.

Rajneesh Kumar and Suman Choudhary

STRETCH EFFECT DUE TO MECHANICAL SOURCES IN A

MICROPOLAR VISCOELASTIC MEDIUM   99-111

Abstract: The dynamic response of a homogeneous isotropic micropolar viscoelastic half-space with stretch subjected to a set of normal point sources is investigated. The integral transforms have been inverted by using a numerical technique to obtain the normal displacement, normal force stress, tangential force stress, tangential force stress, tangential couple stress and first moment in the physical domain for the two different sources. The result of these quantities for magnesium crystal like material are given an illustrated graphically.

****