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QUASI-SYMMETRIC DESIGNS WITH K NUMBERS OF INTERSECTION AS UNREDUCED DESIGNS

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Abstract: In this paper we propose unreduced balanced incomplete block designs which are multiple balanced incomplete block designs of resolvable type designs with no repeated blocks and also have quasi - symmetric structure with k intersection numbers between the blocks with illustrations.

Keywords and Phrases: Balanced Incomplete Block Design, Symmetric Design, Quasi-Symmetric Design, Block Intersection, Unreduced Design, Resolvable Design, Affine Resolvable Design, μ-Resolvable Design, t-Design.

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1. Introduction

Combinatorial design theory can be applied to the area of design of experiments. Some of the basic theory of combinatorial designs originated in the Ronald Fisher's work on the design of biological experiments. Modern applications are also found in wide areas including; Finite geometry, tournament scheduling, lotteries, mathematical biology, algorithm design and analysis, networking, group testing and cryptography. In the early 1930's Prof. R. A. Fisher and F. Yates gave the concept of design of experiments. BIB design play important role in design of experiments especially in field of experiments. Many construction methods of BIB design were given by Prof. Fisher [5], Yates [27] and Bose [2]. One of the fundamental principles of experimental design is the separation of heterogeneous experimental units into subsets of more homogeneous units or blocks in order to