



International university of Africa

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A new method to generate ordered n -tuples

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the degree of M.SC. In mathematics**

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Verse

بسم الله الرحمن الرحيم

قال تعالى:

{إِقْرَأْ بِاسْمِ رَبِّكَ الَّذِي خَلَقَ ﴿١﴾ خَلَقَ الْإِنْسَانَ مِنْ عَلَقٍ
﴿٢﴾ اقْرَأْ وَرَبُّكَ الْأَكْرَمُ ﴿٣﴾ الَّذِي عَلَّمَ بِالْقَلَمِ ﴿٤﴾ عَلَّمَ
الْإِنْسَانَ مَا لَمْ يَعْلَمْ ﴿٥﴾}

{سورة العلق من الآية ﴿١﴾ إلى الآية ﴿٥﴾}

Dedication

I dedicate this research to my parents who have given me the help and love and encourage and supported me in my education we cannot have been made possible, and also I dedicate it to my staff of the faculty and my supervisor :

Dr\ Mohamed Sayed Abd Elrahman

Also to my friends for their supports

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Finally I never forget my family who give me a best situation to complete my research.

ABSTRACT

An ordered pair is a pair of objects, which means that the order which appears in the pair of objects is significant. The ordered pair is also called 2-tuples, the first aim of this research is to generate new ordered n -tuples from a system of k ordered n -tuples. The second aim of this research to determine the number of the new ordered n -tuples which generated from a system of k ordered n -tuples. Combinatorial analyses of the structure of the ordered n -tuples is performed via some elements of number theory and Combinatorics. Several new mathematical formulas are finally generalized and proven.

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