ISBN 978-81-925945-5-2

New Horizon

Edited Book of Research Papers

January 2018

Publisher
Dr. Ranganath Mishra
Sigma Enterprizes
92/61, Shastri Nagar, Meerut, UP 250004

Printer
Gill Publication
Meerut City, UP 250002

Communication
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Rs. 500/-

Index

Generalized Inner Product Space $A = \{a_0G_0 + a_1G_1 + a_2G_2 \,/\, a_i \in F \,\&G_i \in C(P)\}$Where C(P) = class of algebraic structures of codes in universe

- Dr. K.R. Nemade
Asst. Professor
Indira Mahavidyalaya,
Kalamb, Dist.Yavatmal (M.S.)

Abstract :

This piece of work consist of $\left(A, \oplus\right)$ is an abelian group ,$(A, \oplus, \circledast)$ is a vector space ,$\left(A, \oplus, \circledast\right) = A = \{a_0G_0 + a_1G_1 + a_2G_2 \,/\, a_i \in F \,\&G_i \in C(P)\}$
Where C(P) = class of algebraic structures of codes in universe.; is a modified inner product space.

Mathematics Subject Classification 2000 : 08A99 , 03C13 , 68Q15 , 68Q19, 08A68

Keywords :
Binary Operation ,Abelian Group ,Vector Space , Inner Product, Field.

Introduction :
I.N.Herstein cotes in (1)
Definition : A nonempty set of elements G is said to form a group if in G there is defined a binary operation , called the product and defined by * , such that
1. a , b ∈ G implies that a*b ∈ G
2. a, b, c ∈ G implies that (a*b)*c = a * (b*c)
3. There exist an element e ∈ G such that a*e = e*a = a for all a ∈ G
4. For every a ∈ G there exist an element $a^{-1} \in G$ such that $a * a^{-1} = a^{-1} * a = e$

Definition : A group G is said to be abelian (or Commutative) if for every a , b ∈ G ,

$$a * b = b * a .$$

Definition : A nonempty set V is said to be vector space over a field F if V is an abelian group under an operation which we denote by +, and if for every a ∈ F , v ∈ V ; there is defined an element , written as av, in V subject to
1. a(v+w) = av + aw;
2. (a + b)v = av + bv ;
3. a(bv) = (ab)v ;
4. 1v = v ;

For all a, b ∈ F ; v , w ∈ V Where the 1 represent the unit element of F under multiplication.