








β -Enaminones from cyclohexane-1,3-diones: Versatile precursors for nitrogen and oxygen-containing heterocycles synthesis

Dharminder Sharma^a , Manish Kumar^b , Sandeep Kumar^c , Dhananjay Bhattacharjee^d , Arun Kumar Shil^e , Megha Mehta^f , and Pralay Das^g 

^aDepartment of Chemistry, Jagdish Chandra DAV College, Dasuya, India; ^bDepartment of Chemistry, Swami Vivekanand Govt. College, Ghumarwin, India; ^cDepartment of Chemistry, Lovely Professional University, Phagwara, India; ^dChemical Technology Department, CSIR-Institute of Himalayan Bioresource Technology, Palampur, India; ^eDepartment of Zoology, Jagdish Chandra DAV College, Dasuya, India

ABSTRACT

β -Enaminones derived from cyclohexane-1,3-diones reveal a vast variety of bioactivities including anticonvulsant, anti-inflammatory, analgesic, etc. Further, these β -Enaminones are versatile precursors for the synthesis of several other important heterocycles that illustrates antimicrobial, antibacterial, antifungal, antitumor, calcium channel antagonist, cardiovascular, antiviral activities, etc. Recently, reactions of various β -enaminones with their counterpart for example aldehydes, Meldrum's acid, *N*-arylitraconimides, malononitriles, cyanoacetamide, arylglyoxals, *ortho*-hydroxybenzyl alcohols, *o*-hydroxystyrenes, and acenaphthoquinone have been recognized for the synthesis of different nitrogen and oxygen heterocycles involving 2-quinolone, 1,4-dihydropyridine, acridine-1,8-dione, indoles, xanthenes, chromenones, etc. These significances of β -enaminones enthused us to assemble all newly developed methods for the creation of important nitrogen and oxygen-containing heterocycles, which are the chief attraction of this review article.

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Acridine-1; cyclohexane-1; dihydropyridine; 3-dione; 8-dione; β -enaminones; xanthenes

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Some results of a gamma group-I

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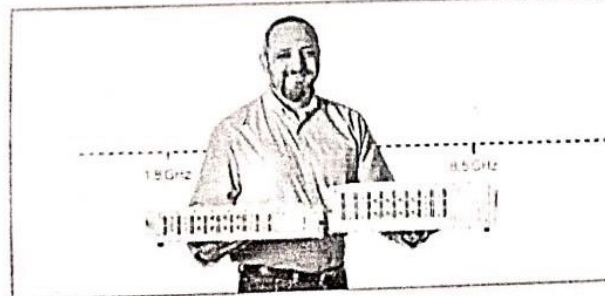
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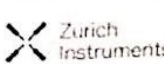
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Some Results of a Gamma Group-I

Vikram Singh Kapil^{1,a)}, Anil Kumar^{2,b)}, Tilak Raj Sharma^{3,c)}

¹Department of Mathematics, Government Degree College Baldwara (HP)-India

²School of Sciences, Carver Point University, Kota, Rajasthan-India

³Department of Mathematics, Himachal Pradesh University Regional Centre, Khaniyara, Dharamshala, Himachal Pradesh (India) -176218

^{a)}Corresponding author: vikramkapil6@gmail.com

^{b)}planplus8@gmail.com

^{c)}trpangotra@gmail.com

Abstract. We study the concept of Γ -group, Γ -Subgroup, Normal Γ -Subgroup, Γ -cosets and study their properties. We prove some of the basic results such as if G be a Γ -group G with zero element 0 and for $x \neq 0, x\alpha y = x\alpha z$, where $x, y, z \in G, \alpha \in \Gamma$ implies $y = z$, then G is commutative. Further if G be a commutative strong multiplicative Γ -idempotent Γ -group. Then $(ayb)\gamma(ayb) = (aya)\gamma(hyb) = ayb$, for all $a, b \in G$ and $\gamma \in \Gamma$. Again if P is a Normal Γ -Subgroup of Γ -group G if and only if $N(\Gamma P) = G$.

Keywords. Semi group, Γ -Group, Normal Γ -subgroup, Γ -coset.

INTRODUCTION

As a speculation of ring, the notion of a Γ -ring was introduced by Nobusawa [9] in 1964. The notion of a ternary algebraic system was introduced by Lehmer [1] in 1932. In 1995, Rao [2-4] introduced the notion of a Γ -semiring as a generalization of Γ -ring, ring, ternary semiring and semiring. Rao [7-8] introduced the notion of field Γ -semiring and Γ -field. Semi group, as the basic algebraic structure was used in the areas of theoretical computer science as well as in the solutions of graph theory, optimization theory and in particular for studying automata, coding theory and formal languages. The formal study of semi groups begins in the early 20th century. In 1981, Sen [11] introduced the notion of a Γ -semigroup as a generalization of semigroup. Rao [5] studied ideals of Γ -semirings, semirings, semigroups and Γ -semigroups.

The motivation of this paper is [6] where in Rao received a substitute way to generalize notion of Γ -group, regular Γ -group and study their properties. In this paper, we study the concept of a Γ -group as a generalization of group. Further we prove some basic results regarding Γ -Subgroup, Normal Γ -Subgroup, Γ -cosets etc. and study some of the properties of a Γ -group.

PRELIMINARIES

Definition 2.1. [6] "A semigroup is an algebraic system (G, \cdot) consisting of a non-empty set G together with an associative binary operation \cdot ".

Definition 2.2. [6] "An algebraic system (G, \cdot) consisting of a non-empty set G together with an associative binary operation \cdot is called a group if it satisfies the following:

(i) there exists $e \in G$, such that $x \cdot e = e \cdot x = x$, for all $x \in G$.

(ii) if for each $x \in G$ there exists $y \in G$, such that $x \cdot y = y \cdot x = e$ ".



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Corresponding author.

planplus8@gmail.com

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Strong Gamma Group

Vikram Singh Kapil¹, Anil Kumar^{2*}, Tilak Raj Sharma³

¹ Department of Mathematics, S V Government Degree College, Ghumarwin, Bilaspur (HP), India

² Research Scholar, School of Sciences, Career Point University, Kota, Rajasthan, India

³ Department of Mathematics, Himachal Pradesh University, Regional Center, Khaniyara, Dhamshala (HP), India

Abstract

Objectives: The primary goal of this study is to present the concept of a strong Γ -group as a generalization of Γ -group. **Methods and Findings:** We have investigated some of the properties of the Γ -group and extended it to introduce the idea of a strong Γ -group. **Novelty:** Every strong Γ -group is a Γ -group, but not all Γ -groups are strong Γ -groups. Further if G is a non-empty Γ -semigroup and for all $a, b \in G$, the equations $a\alpha x = b$ and $y\alpha a = b$ for all $x, y \in G$ and for all $\alpha \in \Gamma$ have unique solutions in G , then G is a strong Γ -group. Also, we characterize that non-empty subset H of a strong Γ -group G is a strong Γ -subgroup if and only if for all $a, b \in H, a\alpha c \in H$ for all $\alpha \in \Gamma$ where c is strong inverse of b in G . Finally, we prove that the intersection of two strong Γ -subgroups is again a strong Γ -subgroup and the center of strong Γ -group $C(G)$ is also a Γ -subgroup.

Keywords: Semigroup; Strong Γ -group; Strong Γ -subgroup; Centre of Γ -group

1 Introduction

The notion of a ternary algebraic system was introduced by Lehmer in 1932. As a speculation of ring, the notion of a Γ -ring was introduced by N Nobusawa in 1964. In 1981, M. K. Sen introduced the notion of a Γ -semigroup as a generalization of semigroup. In 1995, Rao⁽¹⁾ introduced the notion of a Γ -semiring as a generalization of Γ ring. The formal study of semi groups begins in the early 20th century. Rao studied ideals of Γ -semirings, semirings, semigroups and Γ -semigroup. In this paper, we study the concept of a strong Γ -group as a generalization of Γ -group. Further, we prove some basic results regarding strong Γ -subgroup, centre of strong Γ -group etc. and study some fundamental properties of a strong Γ -group.

1.1 Preliminaries

We include some necessary preliminaries from⁽¹⁻³⁾ for the sake of completeness.

Definition 2.1. A semigroup is an algebraic system (G, \cdot) consisting of a non-empty set G together with an associative binary operation¹.

On Some Results of Strong Γ -Subgroups of a Strong Γ -Group

Vikram Singh Kapil¹, Anil Kumar² and Tilak Raj Sharma³

¹*Department of Mathematics,
Government Degree College Ghumarwin (HP), India*

²*Research Scholar,
School of Sciences, Career Point University, Kota, Rajasthan, India*

³*Department of Mathematics, Himachal Pradesh University,
Regional Center, Khaniyara, Dharamshala (HP), India*

¹*Corresponding Author: vikramkapil6@gmail.com ²planplus8@gmail.com
³trpangotra@gmail.com*

Abstract

In this paper, we study the concept of strong Γ -group, strong Γ -subgroup and their properties viz: Γ -cosets, Normal Γ -subgroups, one-to-one correspondence between any two strong Γ -left(right) cosets of a strong Γ -subgroup in a strong Γ -group etc. Further if H and K be two strong Γ -subgroups of a strong Γ -group G . Then $H\Gamma K$ is a strong Γ -subgroup of a strong Γ -group G if and only if $H\Gamma K = K\Gamma H$.

Keywords: Strong Γ -group, Strong Γ -subgroup, Γ -cosets, Normal Γ -subgroups.

1. INTRODUCTION

The notion of a ternary algebraic system was introduced by Lehmer [1] in 1932. As a speculation of ring, the notion of a Γ -ring was introduced by Nobusawa [7] in 1964. In 1981, Sen [8] introduced the notion of a Γ -semigroup as a generalization of semigroup. In 1995, Rao [2-5] introduced the notion of a Γ -semiring as a generalization of Γ -ring, ring, ternary semiring and semiring. Rao [6] introduced the notion of field Γ -semiring and Γ -field. Semi group, as the basic algebraic structure was used in the areas of theoretical computer science as well as in the solutions of graph theory, optimization theory and in particular for studying automata, coding theory and formal languages. The formal study of semi groups begins in the early 20th century. Rao [5] studied ideals of Γ -semirings, semirings, semigroups and Γ -semigroups. Kumar [13] introduced the



A Comparison of Circadian Disruption of Sleep and Meal Timings in Rural and Urban Populations of Himachal Pradesh-India.

Bovinder Chand

Department of Zoology, Chaudhary Charan Singh University, Meerut-250004 (Uttar Pradesh), India.

Abstract

Due to the 24X7 modern lifestyle, there have been significant changes in the eating and sleeping patterns of humans. The introduction of electricity and artificial light, as well as television, the internet, smartphones, work pressures, shift work, etc, have contributed to the trend of staying up awake till late at night. In recent times, there has been a great shift from agricultural work to office jobs, resulting in altered day and night time light exposures. Various factors like work-related compulsions, modern lifestyle with late in-bed time, and increased use of the internet and mobile phones at night time are leading to sleep reduction and disruptions. Due to busy schedules, meal timings have also become irregular. Food patterns have changed a lot with more availability of packed snacks and fast foods. Circadian misalignment of food and sleep patterns can result in lifestyle-related health disorders. This study aims to examine the extent of circadian disruption in sleep and meal timings in rural and urban inhabitants of the Indian hill state Himachal Pradesh. The findings of the study indicate that there is significant sleep fragmentation, reduced sleep duration, and irregular meal timings, which can have negative impacts on health.

Keywords: Circadian rhythms, Fast Food, Health, Lifestyle, Sleep

1. Introduction

In the whole evolutionary history of humans, there have never been such fast changes in lifestyle as those that have taken place in the last three to four decades. These changes have affected our eating and sleeping patterns to a great extent. These changes have happened so quickly that our bodies might not have had the time to adjust to them at the same rate. This has led to a number of lifestyle-related health issues, including mental health issues, obesity, type 2 diabetes, low immunity, cancer, and cardiovascular diseases.

It is clear from the scientific literature that sleep and food are two of the most significant factors affecting health. Not only does the reduction in quality of these, but their circadian misalignment also has a negative impact on our health. Many non-communicable diseases affecting both bodily and

conducted in Chicago indicated that among adolescents in the age range of 11 to 14 years, the practice of sleeping for shorter amounts of time was linked to worse academic performance, lower self-esteem, and greater beginning levels of depression symptoms (Fredriksen et al., 2004). Circadian disruption of sleep rhythms results in behavioural and mental health issues (Sletten et al., 2020). Sleep rhythm disturbances lead to mental health issues (Foster, et al., 2013). The circadian disruption of sleep magnifies autism, depression, and Parkinson's disease (Logan and McClung, 2019). Major depressive disorder (MDD), bipolar disorder (BD), anxiety, and schizophrenia (SZ) are frequently observed in patients with disrupted circadian sleep rhythms (Walker et al., 2020). Circadian abnormalities of sleep have an impact on both our physical and mental wellbeing (Karatsoreos, 2012).