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Study on the Effect of Fertilizers and Hydrogen Peroxide on Soil Property, Growth, Yield and Nutrient Content of *Abelmoschus Esculentus* (L.) Moench

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ABSTRACT

Effect of the application of individual and combination of vermicompost, NPK along with H_2O_2 was studied on 10, 20, 30, and 40 days old seedlings of Abelmoschus esculentus. The physio chemical characters of soil with vermicompost showed better result and it has all kinds of nutrient needed for the better growth of the crop. It increases soil fertility, crop production and nutrient content of the plants. Integrated fertilizer application will boost the crop and this is the best way to obtain better results and it will decrease the pollution load on our environment. Application of H_2O_2 also influences the germination, early plant growth and nutrient content. It act as a growth promoter, but the continuous application and accumulation leads to damages, and the disease resistance against pathogens was decreased during the reproductive stages.

Keywords:
Abelmoschus esculentus; Growth; H_2O_2; Fertilizer; Soil

1. Introduction

Agriculture success mainly depends on soil quality, plant health, climate and well balanced fertilizer application. In today's era, farmers use heavy doses of inorganic fertilizers to fulfill the food demand. Intensive agriculture has increased crop yields but also posed severe environmental problems (Pimentel, et al., 1995). Sustainable agriculture would ideally produce good crop yields with minimal impact on ecological factors such as soil fertility (Tilman,1999; Pimental, 1997). A fertile soil provides essential nutrients for crop plant growth, supports a diverse and active biotic community, exhibits a typical soil structure, and allows for an undisturbed decomposition (Mader, et al., 2002).

Okra (*Abelmoschus esculentus* L) is an annual herb and vegetable crop grown throughout the tropical and subtropical parts of the world either as the sole crop or intercrop with maize or another (Emuh et al., 2006). Okra plays an important role in the

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MUSIC AND PERFORMANCES IN ANITA NAIR'S *MISTRESS*

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ABSTRACT

Like a Kathakali performance, Anita Nair's *Mistress* has a formal structure. Each of the nine chapters concerns one of the nine primary colours of Kathakali's emotional palette the navarasaas: love, contempt, sorrow, fury and so on. Each term is given a short explanation, followed by the characters wrestling with or succumbing to each navarasa by turn. The reader is constantly reminded of the parallels between the real characters and their Kathakali equivalents. When travel writer Christopher Stewart arrives at a riverside resort in Kerala, India to meet Koman, Radha's uncle and a famous dancer, he enters a world of masks and repressed emotions. From their first meeting, both Radha and her uncle are drawn to the enigmatic young man with his cello and his incessant questions about the past. The triangle quickly excludes Shyam, Radha's husband.

Kathakali is known for the melodramatic emotions, the elaborate masks and symbolism of the colours. When the performers in *Mistress* realise that they have to discard the costume to regain their humanity, it is too late. Though destiny doesn't repeat itself in *Mistress*, the present borrows a great deal from the ancestral text as told by Koman. Players may keep changing, but the performance can only be edited by time, it can't be stopped. Nair accelerates the frisson with her own art.

Keywords: Kathakali, Navarasas, melodramatic, emotions

Art is a product of both spiritual and physical experiences. Anita Nair in *Mistress* tries to present the differing perspectives of the east and the west. The structural foundation of *Mistress* is the art of Kathakali. Arts like literatre, music, painting, acting and dancing are combined to form Kathakali. It is an art known for its intricate and exquisite make

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GENDER IDENTITY AT CROSS ROADS A READING OF MANJU KAPUR'S A MARRIED WOMAN

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ABSTRACT

In Indian writing in English, Manju kapur is the notable Feminist writer. She intuitively perceived the gender issues upsetting women and presented women as an individual who fights against suppression and oppression of the patriarchy. Kapur has presented that women has no choice to assert their rights and how they struggle to achieve. At the same time she shows how women raise her voice and struggle to get equal rights in the patrarichal society. In her novel A Married Woman, Kapur shows the life of Astha, protagonist of the novel, she is brought up in a traditional middle class family. Even though, she is brought up in a traditional family she starts to raise her voice for her rights. Her husband is busy with his work he never care for her. So, Astha feels lonely at home. She joins the profession of teaching. Hemant has no time to hear Astha's feelings and her daily routine matters. Astha keeps relationship with a woman Pipeelika which gives her satisfaction. Both are social activist. She is trapped in an inescapable situation, where she struggles in her whole life and she indulges in lesbian relationship with Peepilika to show her protest. Gender and sexual identity is inextricable. This paper deals with gender identity through sexual diversity.

Keywords: Marriage, Patriarchal, Gender, Identity, Homosexuality

In the modern contemporary trend of English fiction, the controversial concept of lesbian identity is bagging popularity and significance. Woman writers like Shoba De,

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ELIMINATION OF GENDER BARRIERS THROUGH EDUCATION IN BUCHI EMECHETA'S THE JOYS OF MOTHERHOOD

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Quest for Identity in Suniti Namjoshi's *St. Suniti and the Dragon*

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Abstracts:

Quest for identity is the inward journey of the protagonist, filled with obstacles which he overcomes in order to attain meaning and value in his life. It is a struggle for existence, a search for roots and for self-expression. Suniti Namjoshi, an Indian born English fabulist has pictured the quest for identity in her works. In *St. Suniti and the Dragon* she has beautifully dealt with the protagonist's search of self, where the protagonist is the writer herself. Each individual has both the saint and demon in him. The situation one faces makes him either a saint or the demon. The novel unravels the fear which makes the protagonist an angel or a saint or poet. This paper will highlight the quest for identity in the novel *St. Suniti and the Dragon*.

Key words: quest, identity crisis, longing.

Suniti Namjoshi, an Indian born English writer, belongs to the Royal Family of Maharashtra. She enjoyed the privilege of good education in India. She served the country as an IAS officer but later developed a love towards literature and started to write poems and fables. She has travelled widely and has lived in Australia, Canada and at present she lives in England with her friend Gillian Hanscombe. In her works, she tries to explore cultural and psychic mechanisms to construct gender inequality. She, going against the prevailing social structure, gives more space for woman. She uses fabulist mode of narrative to expose the existing questionable working of patriarchy. She uses both Western and Eastern myths, legends, fairy tales and fables and explores female condition. She uses mythical characters mostly animals to correlate human consciousness. Quest for identity is the inward journey of the protagonist, filled with obstacles which he overcomes in order to attain meaning and value in his life. It is a struggle for existence, a search for roots and for self-expression. *St. Suniti and the Dragon* is about the protagonist's quest for identity, a quest for sainthood and her encounters with the dragon.

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DIASPORIC TRAUMA IN SUNITI NAMJOSHI'S *GOJA: AN AUTOBIOGRAPHGICAL MYTH*

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ABSTRACT

Diaspora refers to the dispersion of people from their homeland or a community, who have exited or been removed from their homeland. Diasporic writing also mean expatriate writing and holds themes like alienation, rootlessness, nostalgia for home, creating imaginary homeland and the like. The term 'trauma' is often associated with diasporic literature, which addresses the identity crisis and past memory of the protagonist. Suniti Namjoshi an Indian born English fabulist in her *Goja: An Autobiographical Myth,* has sketched her diasporic experiences and the trauma. The feeling of belonging and not belonging in both the homeland and in the migrated town traumatise the protagonist. This paper will highlight the traumatic experience of the protagonist and how she tries to bridge the polarities between the east and the west.

Key words: Trauma, diaspora, alienation, maginalization, identity crisis.

Diasporic writing also mean expatriate writing and holds themes like alienation, rootlessness, nostalgia for home, creating imaginary homeland and the like. The term 'trauma' is often associated with diasporic literature, which addresses the identity crisis and past memory of the protagonist. Diasporic writers have often recorded their traumatic experiences in their literary works, the Indian born English fabulist Suniti Namjoshi is no exception. Recalling one's past and sharing it with the readers in the form of narrative, is an important aspect of diasporic writers. Gina Whisker says, "The autobiographical mode is of particular importance to people who have been silenced hitherto" (*Black Women's Writings* 6). Autobiographical account of a writer becomes a testimony to the lived experience of an

Hope and Despair in Poomani's *And Then*- A Study

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Abstract

Dalits, considered to be the lowest in the hierarchical Indian caste system and subjected to systemic subjugation, are a subaltern community who experience the trauma of persecution in ways that are unique due to the complex social, cultural, political, and economic environment prevailing in India. Dalit literature offers a window of insight into their lives. They are narratives of antagonism and vulnerability, violence and fortitude, sting and sorrow, humour and pathos, despair and hope. Poomani, a South Indian novelist presents micro- histories of slavery in rural Indian communities with a cleft- diasporic perspective. S.Armstrong in his afterword for the novel has stated that, "His scholarly and sympathetic analysis of how penury and the underlying embedded social issues caused the internal migration of rural Indians speak volumes for his creative potentiality" (*A.T.*266). In the novel *Piraku* (translated as *And Then* by T.Marx*)* the novelist Poomani has woven a brilliant tale that depicts the pathetic and impoverished lives of the Chakkilyar (cobbler) community, under the influence of an oppressive caste structure and social stratification that has been widely prevalent in society. Though the novel resonate despair in the life of the dalit people, but also strings a ray of hope via the life of Alagiri. This paper will unravel the bitter life of the dalit people and the hope the reader gets that they would march out of it.

Key words: Dalit literature, subaltern, social milieu, oppressed, marginalized.

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THE SEARCH FOR IDENTITY IN KATE GRENVILLE'S THE *SECRET RIVER AND* MARILYNNE ROBINSON'S *HOUSEKEEPING.*

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Abstract:
The Australian novelist, Kate Grenville, has represented the Australian history in her novel, The Secret River. She has marked the violence of the country's past. Grenville has chronicled the life of the aborigines and the culture of the early settlers in New South Wales. The regional culture of the aboriginal inhabitants is compared with the unpleasant culture of the orphans in America. Like Grenville, Marilynne Robinson, the American novelist, has portrayed America as a nation of orphans in her novel, Housekeeping. The relinquished girls in the novel are raised by a succession of relatives, who become the central characters of the plot. The moral degradation is the heightening of the orphans in the great American nation. The characters of both the novels strive for the creation of identities. The characters of Housekeeping and The Secret River climax the price of loss of life and survival. This paper focuses on the dangerous and deep undertow of transience related to identity struggles.
Keywords: Gender, identity, settlers, aborigines, abandonment, orphans.

The creation of history along with the memories of the past is the great strength of literature. It expresses collective values and elaborates the experiences of an individual. Such experiences are estimated in terms of the ordinary, the typical and the representative. It craves to represent integration than disintegration and expresses a strong ironic disapproval of collective mindlessness. Australian literature holds for indigenous Australians and for the descendants. Its perception of constituting the community is different in the two cases. The white Australian community derives its culture from settler society. It celebrates the pioneer values and the deep attachment to the land. For the aborigines, their traditional culture defines allegiances and relationships. Literature has been a way for claiming a voice and articulating a sense of cohesion as the people faced real threats in the continuance of their culture. This piece of work represents the claim of voice in *The Secret River* by Kate Grenville compared with a search of identity of the American orphans with reference to *Housekeeping* by Marilynne Robinson, an American novelist and essayist. The above mentioned novels are elegantly written, meticulously crafted and extremely readable. It provides a classic example of the white Australian and American anxieties. These two novels are paradigmatic of the difficulties experienced by the settler descendants of Australia and the American children after the loss of parents.

The grim truth of the colonial history that haunt the nation's conscience is *The Secret River* by Kate Grenville,an Australian author who has published fifteen books that include fiction, non-fiction and biography. She won the Orange prize for, *The Idea of Perfection* in 2001 and the Commonwealth Writer's Prize for *The Secret River* in 2006. She published this novel in 2005 and represented a new form of historical writing that evoked the bitterest Australian criticism. Grenville's novel intends to explore the literary tendency to re-write and re-read the political genesis, of the nation. It is a literary tendency upon the crucial moments that has dwelled in the last twenty years of the Australian colonial history. The novel focus on the critical revision of the past, on the initial violent encounter with the aborigines and the role of familial identity. Whereas, Robinson's *Housekeeping* has its focal point on family ,that helps to form identities. The definition of an individual, originates from the framework of a family. But the nations' framework gets lost when its children are deprived of the family. Identification loses its root at the absence of the stable figure in the family. The children fight their own battles to create their own identities. They shall pass around

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The Ruthless Exploitation and Ill- treatment of Poor Labourers in Mulk Raj Anand's*Two Leaves and a Bud*

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Abstract

Mulk Raj Anand is more than any other Indian writer who has presented variety of themes and varied pictures of Pre- independence Indian society. He is well-known for his realistic portrayal of social and economic problems suffered by Indians because of caste system and British colonial rule. Normally his novels show strong protest against social injustices and social evils. Rebellion against authority is the central theme of his novels. All his novels depict sympathy for the oppressed and his earnest human concern for the underprivileged people of Indian society.The topic taken for this study is *Two Leaves and a Bud(1937).* This paper explores the ruthlessexploitationandconsistent ill-treatment of thousands of poor labourers at the hands of a clique of selfish British planters on a large tea estate in Assam. It describes the problematic life of Gangu, who works as a labour or coolie in Assam tea Garden owned by a British man. It deals with the oppression of the poor and is about a peasant who tries to protect his daughter from a British soldier. His wife and daughter become victims of rape and other sexual

Martha and Her Thought Process: A Psychoanalytical Reading of Doris Lessing's *Children of Violence* Series.

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Abstract:

Doris Lessing, author of innumerable body of works, won her Nobel Prize for Literature in 2007 at the age of 88years 52 days. She was the third oldest Nobel Laureate in any other category after Leonid Hurwicz and Raymond Davis. She was overpowered by a deep concern for the welfare of mankind. She was one of the leading contemporary novelists of ideas and inscient power. This paper probes deep into the psyche of Martha, the female protagonist of *Children of Violence* series. It also seeks to use the psychoanalytical theories of Freud, particularly his theory of the subconscious trying to harmonize it with the mind thought and equivocal attitude of Martha Quest.

Keywords: psyche, psychoanalysis, subconscious, unconscious, female.

The thing women have yet to learn is nobody gives you power. You just take.

- Roseanne Barr.

Doris Lessing's fiction is deeply autobiographical, much of it emerging out of her experiences in Africa. Lessing was born as Doris May Taylor on October 22, 1919. At the age of five, her family moved to the British Colony of Southern Rhodesia. Her formal education came to an end at the age of 13. She became a self – educated intellectual by ordering books from London. She has written twenty novels, eleven volumes of short stories, six works of non-fiction, six plays, fourteen poems and two perennial classics, *The Grass is Singing"* and *"The Golden Notebook"*. She also published two novels under the pseudonym Jane Somers, to show the difficulty, new author's face in trying to get their work printed. The novels were rejected by her own U.K. publisher but later accepted by another English publisher. The title of the books are*The Diary of a Good Neighbour*and

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Molecular Phylogenetic Analysis of *Turbo brunneus* (R.1798), *Cypraea annulus* (L.1758) and *Babylonia spirata* (L.1758)

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Abstract Over the past few decades, biologists from many disciplines have turned to phylogenetic analyses to interpret variation in biological systems. Phylogenetic relationships with a high potential in the absence of sufficient morphological characters can be resolved by molecular phylogenetic techniques according to coded characters. A number of mtDNA genes have been targeted in marine gastropods for phylogenetic purpose; these include the ribosomal RNA genes 28S, 18S, 16S and 12S, Cytochrome oxidase I (COI) and cytochrome b (Cyt-b). In the present study, SSU rRNA in *Turbo brunneus*, 18S rRNA in *Cypraea annulus* and COI gene in *Babylonia spirata* were successfully amplified and sequenced. Phylogenetic tree of the three species were constructed by using neighbor-joining tree. The optimal tree with the sum of branch length = 1.47445020 was observed. *Turbo brunneus* was phylogenetically closer to the clade of *Cypraea annulus* than that of *Babylonia spirata*. The mitochondrial genomes are informative for mollusc phylogeny, which give a proper phylogenetic approach.

Keywords Gastropods, DNA Sequencing, SSU rRNA, 18S rRNA, COI, Phylogeny

1. Introduction

Marine bioresource is known to be one of the richest among all the living ecosystems. Life originated in the sea and in terms of evolution and biodiversity the sea appears to be superior to the terrestrial ecosystem [1]. As marine species comprise approximately a half of the global biodiversity, they are offering a vast source from which useful therapeutics can be discovered. Ocean exploration often leads to new ideas, new theories and discoveries, including new medicines. The phylum mollusca has a long geological history and their presence on planet earth since the Paleozoic era 600 million years ago has been proved beyond doubt. The class gastropoda is known to have originated during the Jurassic era. Among the invertebrates, Phylum Mollusca is the second largest groups next to Arthropoda [2].

The phylum Mollusca encompasses seven classes, namely Gastropoda, Polyplacophora, Cephalopoda, Bivalvia, Scaphopoda, Aplacophora and Monoplacophora [3]. Among the seven classes, gastropods are highly diversified in shape, coloration, distribution, habitat and show tremendous adaptive radiation. Species of gastropoda with their ornamental shell and succulent meat have been harvested since time immemorial [4]. The majority of the gastropods belong to the subclass prosobranchia that includes all the gastropods that respire by means of gills and in which the mantle cavity, gill and anus are located at the anterior of the body. Also, most carnivorous gastropods are marine prosobranchs. The three orders which make up this subclass of prosobranchia are the oldest archaeogastropoda, the least specialized mesogastropoda, and the largest order, with particularly diverse in mode of life, and the specialized carnivores, the neogastropoda. Increased awareness and importance of chank genetic resources has turned attention back to the speciation and need to have scientific data on the genetic diversity of selected gastropod for species description and planning their conservation and management [5]. Shells of gastropod contain a rich source of taxonomic information that can be used to interpret evolutionary relationships among taxa [6]. However, literatures pertaining to economic characters and genetics on marine molluscs are scanty [7].

The progressive information have diverted the attention of the genetic workers to the techniques based on genomic as well as mitochondrial DNA. Nowadays DNA barcoding

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Anti-diabetic (AD) studies of Bis Glycine Hydro Bromide – BGHB macro crystals milled to nano scale of 219 nm as the preliminary fine particles

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ABSTRACT

Generally macro crystals are extensively made use of it in material relevance and much utilization in all areas of science and technology. In this learning macro crystals are synthesized effectively by slow evaporation system, crystals are analysed by SXRD method for parameters and the crystal optical absorption spectrum reveals that the grown crystal has good optical transparency in the entire visible region and its energy band gap also fine gap and is of NLO SHG. The bio behaviour of the crystals are studied for anti diabetic study of the macro crystal inhibition values are increased with proper increase in the value of concentration and reported here as the novel utility to society. IC_{50} values are 80.2 for macro crystal of 219 nm milled assessment of BGHB by milling process.

Selection and peer-review under responsibility of the scientific committee of the International Conference on Nanotechnology: Ideas, Innovation and Industries.

1 Introduction

Nano crystal is acquired from full scale crystals [1–25]. The crystal, whose particles are masterminded in rehashing design and have geometrical shape in nano precious stone the range is about 100 nm level. The nano crystals have various applications in hardware, science and ventures. The journey for gainful and new materials on nonlinear optical strategy has been dynamic since the revelation of SHG in quartz. Nonlinear optical [NLO] materials are required to expect a huge activity in photonics incorporating optical information managing, media transmission sensor defender applications, optical information putting away, and so on. Some regular mixes show colossal NLO reaction a huge piece of the time, sales of hugeness more noteworthy than generally known inorganic materials. They in like way offer the adaptability of sub-atomic course of action and the confirmation of basically an incredible number of crystalline structures. In this vitalizing setting, trademark nonlinear materials have been viewed as forethought open doors for crucial and applied appraisals including, in a joint execution, consistent pros, material examiners and optical structure. Over late decades, there has been dazzling energy for progression and portrayal of nonlinear optical material significant stones. Secured requesting nonlinear optical materials are utilized in optical exchanging, rehash change and electro-optical applications particularly in Electro optical modulators. Notwithstanding huge second sales susceptibilities, unfathomable transmission in UV and noticeable area and stable physio-warm execution are required for these applications. Inorganic NLO materials have gigantic mechanical quality, warm consistency and mind blowing transmittance at any rate unobtrusive optical nonlinearity considering the nonappearance of extended π – electron withdrawal. Simply typical, characteristic NLO material have enormous nonlinearity showed up distinctively corresponding to inorganic material at any rate low optical straightforwardness, poor mechanical and warm quality and low laser hurt edge. Along these lines the evaluation depends on semi-trademark NLO material important stone so as to obtain common NLO gem by joining the upsides of standard and inorganic materials. The semi-ordinary NLO materials have been drawing in a ton of thought because of high nonlinearity, substance flexibility, high mechanical and warm reliable quality and remarkable transmittance. By a wide margin the vast majority of the amino acids openly show the NLO property because of support

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...diabetic (AD) studies of Bis Glycine Hydro Bromide – BGHB macro ...stals milled to nano scale of 219 nm as the preliminary fine particles

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ABSTRACT

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1. Introduction

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GC-MS ANALYSIS AND ANTI-INFLAMMATORY ACTIVITY OF *MUREX TRIBULUS*

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Keywords:

Murex tribulus, Gastropod, Bioactive compounds, Anti-inflammatory activity

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ABSTRACT: The aim of this study was to screen the presence of bioactive compounds through GC-MS analysis and carry out the anti-inflammatory test of the methanolic tissue extract of *Murex tribulus*, a spiny predatory gastropod that is widespread from the Central Indian Ocean to Western Pacific Ocean. The GC-MS analysis of the methanolic flesh extract revealed the presence of four bioactive compounds, 1, 2 dimethyl hydrazine, urea, cis-9 hexadecenoic acid, and 1, 1, 1, 3, 5, 5, 5 hepta-methyltrisiloxane. Among the compounds identified, 1, 1, 1, 3, 5, 5, 5-Heptamethyltrisiloxane was the most abundant antimicrobial compound (92.87%) present in the methanolic tissue extract of *M. tribulus*. The results of the GC-MS analysis showed that the bioactive compounds present in the tissue extract showed anti-inflammatory responses. Hence *in-vitro* anti-inflammatory activity in the tissue extract of *M. tribulus* was determined by proteinase inhibitory activity and 5-lipooxygenase inhibitory assay. The anti-inflammatory test showed promising results with high percentage of inhibition such as 53.50% at a concentration of 1000 µg/ml in proteinase inhibitory activity and 75.42% at the concentration of 1000 µg/ml in %-lipoxygenase inhibitory assay.

INTRODUCTION: Among the marine invertebrates, the molluscs are the potential source of bioactive substances. The bioactive compounds isolated from the gastropods are considered to have a role in the chemical defence of the animals against their predators. Muricidae, commonly known as murex or rock whelks, have a long history of pharmacological use, being listed in the Materia medica by Discorides in 1st century AD, reported by Arabic scholars in 9th Century, and sold in medieval Jewish pharmacies from 11th -14th Century AD [1, 2].

Over the years, numerous bioactive compounds have been reported in the family of Muricidae among which some have the property to reduce the oxidation reactions. Many promising lead compounds have been reported from marine sources having anti-inflammatory activity.

In-vitro and *in-vivo* anti-inflammatory activity of tissue extracts and associated indole compounds from the marine Muricidae *Dicathais orbita* were tested for their ability to inhibit the production of the recognised pro-inflammatory modulator nitric oxide (NO) and cytokines, such as tumour necrosis factor alpha (TNFα) and prostaglandin E2 (PGE2) [3]. Muricidae extracts have demonstrated wound healing properties and anti-inflammatory activity in addition to their antimicrobial properties. Muricidae produce a suite of brominated indoles with anti-inflammatory, anti-cancer, and steroidogenic activity as well as choline esters with

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On Soft A_RS Open and Closed Mappings in Soft Topological Spaces

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Abstract
We introduce Soft A_RS Closed on Soft topological Spaces and study some of their properties. We also investigate the concepts of Soft A_RS Closed Mappings, Soft A_RS open Mappings and also discuss their relationship with other Soft mappings. Also Counter examples are given to show the non coincidence of these functions.

I INTRODUCTION

The soft set theory is a rapidly processing field of mathematics. Molodtsov [7] shown several applications of this theory in solving many practical problems in economics, engineering, social science, medical science, and so on. In 2010 Muhammad shabir, Munazza Naz [8] used soft sets to define a topology namely Soft topology. Soft generalized closed set was introduced by K.Kannan [4] in 2012. The investigation of generalized closed sets has led to several new and interesting concepts like new covering properties and new separation axioms. Some of these separation axioms have been found to be useful in computer science and digital topology. In this paper we defined soft A_RS - closed mapping, soft A_RS - open mapping and a detailed study of some of its properties in soft topological spaces. With the help of counter examples, we show that the noncoincidence of these various types of mappings.

II Preliminaries

Throughout this paper, (X, τ, E) or $\tilde{X}$ denotes the soft topological spaces. For a subset (A,E) of $\tilde{X}$, the closure, the interior and the complement of (A,E) are denoted by cl(A,E), int(A,E) and $(A,E)^C$ respectively. We recall some basic definitions that are used in the sequel.

Definition 2.1 [10]: Let τ be a collection of soft sets over X with the fixed set E of parameters. Then τ is called a Soft Topology on X if

i. $\tilde{\emptyset}$, $\tilde{X}$ belongs to τ.

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On Soft A_RS Open and Closed Mappings in Soft Topological Spaces

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A New Form of Soft Functions in Soft Topological Spaces

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Abstract

In this paper, we introduce a new category of soft function called Š α^* - continuous function. Also we study in detail the properties of Š α^* - continuous function, Š α^* irresolute function and its relation with other Š function. All these findings will provide a base to researchers who want to work in the field of soft topology and will help to establish a general frame work for applications in practical fields.

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Keywords and phrases: Š α^* -continuous function, Š α^* irresolute function

1. Introduction

Molodtsov introduced the concept of soft sets from which the difficulties of fuzzy sets, intutuionistic fuzzy sets, vague sets, interval mathematics and rough sets have been rectified. Application of soft sets in decision making problems has been found by Maji et al. whereas Chen gave a parametrization reduction of soft sets and a comparison of it with attribute reduction in rough set theory. Further soft sets are a class of special information.

Shabir and Naz introduced soft topological spaces in 2011 and studied some basic properties of them. Meanwhile generalized closed sets in topological spaces were introduced by Levine in 1970 and recent survey of them is in which is extended to soft topological spaces in the year 2012. Further Kannan and Rajalakshmi have introduced soft g – locally closed sets and soft semi star generalized closed sets. Soft strongly g – closed sets have been studied by Kannan, Rajalakshmi and Srikanth. Chandrasekhara Rao and Palaiappan introduced generalized star star closed sets in

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α^*_{AS}CONTINUOUS IN TOPOLOGICAL SPACE

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Abstract

Levine introduced the concept of generalized closed sets of a topological space. α^*_{AS}closed set is introduced byI. Sahaya Dani and P.Anbarasi Rodrigo in topological spaces.The purpose of this paper is to introduce and investigate the notion of α^*_{AS}-closure and α^*_{AS}-interior. As well as α^*_{AS}-continuous, α^*_{AS}-irresolutein Topological spaces are derived. We also examine some of the relations and properties of such functions.

Keywords:α^*_{AS}-closure, α^*_{AS}-interior, continuous, α^*_{AS}-continuous,α^*_{AS}-irresolute.

1.Introduction

One of the main concepts of topology is continuous functions. Different types of generalizations of continuous functions were introduced and studied by various authors in the recent development of topology. I. Sahaya Dani and P.Anbarasi Rodrigo introduced & studiedα^*_{AS}-closed sets in topological spaces.The purpose of this paper is to introduce and study the concepts of a new class of maps, namely α^*_{AS} -continuous maps, which includes the class of continuous maps, and a class of α^*_{AS} -irresolute maps.

2. Preliminaries

Definition 2.1A subset A of atopological space X is called,

1. Pre-open set if A ⊆int(cl(A)).
2. Semi-open set if A ⊆ cl(int(A)).
3. α-open if A ⊆ int(cl(int(A))).
4. β-open if A ⊆ cl(int(cl(A))).

The complements of the above-mentioned sets are called their respective closed sets.

Definition 2.2A subset A of a topological space X is called,

1. g-closed if cl(A) ⊆U, whenever A ⊆U and U is open in X.
2. gs-closed set if scl(A) ⊆U whenever A ⊆U and U is open in X.
3. gp-closed set if pcl(A) ⊆U, whenever A ⊆U and U is open in X.
4. gα-closed if αcl(A) ⊆U whenever A ⊆U and U is α-open in X.
5. αg-closed set if αcl(A) ⊆U whenever A ⊆U and U is open in X.
6. g*-closed if cl (A) ⊆U whenever A ⊆U and U is g-open in X.
7. g*s-closed if scl(A) ⊆U whenever A ⊆U and U is g-open in X.
8. g*p-closed if pcl(A) ⊆U whenever A ⊆U and U is g-open in X.

Definition 2.3

A subset A of a topological space X is called α^*_{AS} closed sets if αcl(A) ⊆ int(U) whenever A ⊆U and U is open in X.

Definition2.4

Let X and Y be two topologicalspaces. Thenthefunction f :X→ Y is said to be continuousif the inverse image of every open(closed) set inY is open(closed) inX.

Definition 2.5

Let X and Y be two topological Spaces. Let f: X → Y be a mapping. Then f is said to be:

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A CASE STUDY ON SANITARY WORKERS IN LIONSTOWN AREA THOOTHUKUDI TOWN

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Abstract

Our atmospheres of living are a matter of view of controlling of large part of the preventable ill health. Sanitary workers have played an important role in improving the urban and semi-urban ecological environment and the urban modern civilization, meeting the needs of people's desires for physical, spiritual, political, ecological civilization and implementing the social sustainable development. Sanitation workers perform a valuable service to their communities collecting garbage and removing it to proper disposal areas such as dumps or landfills.

Keywords: Sanitary Workers, Municipal Solid Waste, sewerage, hazardous

INTRODUCTION

A sanitation worker has a dirty job, but it's one that most communities can't live without. Sanitation workers perform a valuable service to their communities collecting garbage and removing it to proper disposal areas such as dumps or landfills. They go by many names: garbage man, trash man. A sanitation worker must be physically fit, so he can quickly climb in and out of large trucks and lift heavy trash containers. The job is physically demanding. Sanitation workers routinely lift heavy objects and work in all weather conditions. There is also a significant injury risk associated with the job. During natural and manmade disasters, sanitation workers participate in emergency response and cleanup. Sanitation Workers are required to work rotating shifts, rotating days off, nights, Saturdays, Sundays, holidays and mandatory overtime. Sanitation workers mostly carry out their work in unsafe working conditions without protective gears or other safety gears or other safety devices. Death or serious injury to sanitation workers while cleaning sewerage with no or inadequate safeguards are frequent incidents. Those people are exposed to dangerous toxic and harmful substances. But this problem is not adequately addressed in the legal framework. A sanitation worker has a dirty job, but it's one that most communities can't live without.

RIGHT TO SANITATION IN INDIA

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A STUDY ON INFLUENCE OF EMI PAYMENTS ON SALES OF SATHYA AGENCIES IN SUBBIAH MUTHALIYAR PURAM OF THOOTHUKUDI DISTRICT

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Abstract

An equated monthly installment (EMI) is a fixed payment amount made by a borrower to a lender at a specified date each calendar month. Equated monthly installments are used to pay off both interest and principal each month so that over a specified number of years, the loan is paid off in full. With most common types of loans, such as real estate mortgages, the borrower makes fixed periodic payments to the lender over the course of several years with the goal of retiring the loan.

Keywords: EMI,HDFC , PAN Card, Credit Card ,Aadhar Card , Installment

INTRODUCTION

An equated monthly installment (EMI) is a method of paying the total amount in small installments which are called as equated monthly installments are used to pay both interest and principal each month over several years; the loan is paid off in full. A consumer durable loan is a finance option for the purchase of household appliances, electronic goods, automobiles, furniture, jewellery, and sporting goods. Lenders check your annual income and credit history of the individual and lend the loan. Since consumer durable loans are unsecured loans, lenders particularly look at your repayment history and CIBIL Score (Credit Information Bureau India Limited). It is advisable to check your CIBIL Score on a regular basis and make sure there are no errors and the overall report looks positive to the lender. Documents that are required to seek a consumer durable loan vary from lender to lender. Generally, the list of documents includes: Identity proofs such as PAN Card, Voter's ID, Aadhar Card etc and Address proof such as Passport, Driver's License, and Electricity Bill. Consumer durable loans generally have flexible period for paying back ranging from 8 to 36 months. Bajaj electronics is a platform that offers home appliances and electronic gadgets of various companies for sale. Customers can buy on cash basis and financing facility is available inside the store for giving consumer durable loan offered by four companies. They are – Bajaj finserv, Capital first, Tata capital, HDFC.

REVIEW OF LITERATURE

Characterizations of Soft A_RS Separation Axioms in Soft Topological Spaces

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Abstract

Many scientists have studied and improved the soft set theory, which is initiated by Molodtsov [33] and easily applied to many problems having uncertainties from social life. Several set theories can be considered as tools for dealing with uncertainties. In (1999) D. Molodtsov initiated the concept of Soft set theory as a new mathematical tool for modeling uncertainties. After the introduction of the notion of Soft sets, several researchers improved this concept. Maji et al presented an application of Soft sets in decision making problems that based on the reduction of parameters to keep the optimal choice objects. Pei and Miao showed that Soft sets are a class of special information systems. Topological structure of Soft sets also was studied by Sabir and Naz. They defined the Soft topological spaces which are defined over an initial universe with a fixed set of parameter and studied the concepts of Soft open sets, Soft closed sets, Soft closure, Soft interior points, Soft neighbourhood of a point and Soft separation axioms are also introduced and their basic properties are investigated by them. Separation axioms studied in some researches. The main purpose of our paper, is to introduce new soft separation axioms based on the Soft A_RS closed sets which are more general than of the closed soft sets In this paper, we introduce Soft separation axioms namely Soft A_RS - T_i on a Soft topological space (X, τ, E) and study some of their properties. We show that these axioms are Soft topological properties under certain Soft mapping. In addition, We give characterizations for these spaces. We study the relationship among themselves and with known Soft separation axioms. Finally, some counterexamples have obtained. This paper, not only can form the theoretical basis for further applications of topology on Soft sets, but also lead to the development of information systems.

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NANO α^*_{AS} HOMEOMORPHISMS IN NANO TOPOLOGICAL SPACE

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Abstract

In this paper, we introduce nano α^*_{AS} -closed maps and nano α^*_{AS}-open maps in nano topological spaces and then we introduce and study nano α^*_{AS} - homeomorphisms. We obtain certain characterizations of these maps.

Keywords: Nano closed map, nano open map, nano α^*_{AS}-closed map, nano α^*_{AS}-open map, nano α^*_{AS}-continuous,nano α^*_{AS}- homeomorphism.

1.INTRODUCTION

The word topology is used in the mathematical discipline for a family of sets with certain properties that are used to define a topological space. In topology the notion of homeomorphism is playing a very important role. Many researchers in topological spaces have generalised the notion of homeomorphism. g-homeomorphism, gc-homeomorphism were introduced by Maki.et.al.[5]. The concept of nano topology was introduced by LellisThivagar [7] and he analysed nano closed maps, nano open maps and nano homeomorphisms. In this paper, Nα^*_{AS} closed functions, Nα^*_{AS} open functions are introduced and Nα^*_{AS} homeomorphisms are analysed.

2. Preliminaries

Throughout this paper (U, $\tau_R(X)$) represent nano topological spaces on which no separation axioms are assumed unless and otherwise mentioned. For a subset A of a space (U, $\tau_R(X)$), Ncl(A) and Nint(A) denote the nano closure of A and the nano interior of A respectively. We recall the following definitions which are useful in the sequel.

Definition 2.1 [7]

CONTRA NANO α^*_{AS} CONTINUOUS FUNCTION IN NANO TOPOLOGICAL SPACE

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ABSTRACT

The purpose of this study is to introduce a new class of contra continuous function called Contra nano α^*_{AS}-continuous function in Nano topological spaces. Some of its properties are analysed. The equivalent condition for a function to be contra $N\alpha^*_{AS}$ -continuous function is established. Further Contra $N\alpha^*_{AS}$ - irresolute function is defined and few of its properties are discussed.

Keywords: Nano topological space, Nano contra continuous function, $N\alpha^*_{AS}$ -closed set, $N\alpha^*_{AS}$ -continuous function, $N\alpha^*_{AS}$ - irresolute function.

I.INTRODUCTION

The concept of topology was first developed in 17th century by Gottfried Leibniz. The concept of nano topology was introduced by Lellis Thivagar et all. We introduced $N\alpha^*_{AS}$ – closed set in nano topological space. $N\alpha^*_{AS}$ – closed map, open map, continuous and homeomorphism was also discussed in the previous papers and their properties were analysed. In this paper we introduce contra $N\alpha^*_{AS}$ – continuous and contra $N\alpha^*_{AS}$ – irresolute function, also some of their properties were discussed.

II.PRELIMINARIES

The following are the necessary concepts and definitions that are used in this work.

Definition 2.1:[1] Let U be a non-empty finite set of objects called the universe and R be an equivalence relation on U named as the indiscernibility relation. Elements belonging to the same equivalence class are said to be indiscernible with one another. The pair (U, R) is said to be the approximation space. Let $X \subseteq U$. Then,

1.The lower approximation of X with respect to R is the set of all objects, which can be for certain classified as X with respect to R and it is denoted by $L_R(X)$.

$L_R(X) = \bigcup_{x \in U}\{R(x): R(x) \subseteq X\}$, where R(x) denotes the equivalence class determined by $X \in U$.

2.The upper approximation of X with respect to R is the set of all objects, which can be possibly classified as X with respect to R and it is denoted by $U_R(X)$.

$U_R(X) = \bigcup_{x \in U}\{R(x): R(x) \cap X \neq \emptyset\}$.

3.The boundary region of X with respect to R is the set of all objects, which can be classified neither as X nor as not - X with respect to R and it is denoted by $B_R(X)$.

$B_R(X) = U_R(X) - L_R(X)$.

Definition 2.2:[1] Let U be the universe, R be an equivalence relation on U and $\tau_R(X) = \{U, \emptyset, U_R(X), L_R(X), B_R(X)\}$ where $X \subseteq U$. R(X) satisfies the following axioms:

1. U and $\emptyset \in \tau_R(X)$,

spaces and study some of their properties. We also investigate the concepts of contra soft A_RS closed mappings, contra soft A_RS open mappings and also discuss their relationship with other soft mappings. Counter examples are given to show the non coincidence of these functions.

1. Introduction

The soft set theory is a rapidly processing field of mathematics. Molodtsov, see [1] shown several applications of this theory in solving many practical problems in economics, engineering, social science, medical science, and so on. In 2010 Muhammad Shabir and Munazza Naz used soft sets to define a topology namely soft topology. soft generalized closed set was introduced by K. Kannan in 2012. The investigation of generalized closed sets has led to several new and interesting concepts like new covering properties and new separation axioms. Some of these separation axioms have been found to be useful in computer science and digital topology. In this paper we defined soft ARS - closed mapping, soft A_RS - open mapping and a detailed study of some of its properties in soft

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Key words and phrases. Contra soft A_RS Closed Mappings, Contra soft A_RS open Mappings.

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Abstract

We introduce Soft A_RS Closed on Soft topological Spaces and study some of their properties. We also investigate the concepts of Soft slightly A_RS continuous functions and also discuss their relationship with other Soft mappings. Also Counter examples are given to show the non coincidence of these functions.

I Introduction

The soft set theory is a rapidly processing field of mathematics. Molodtsov [7] shown several applications of this theory in solving many practical problems in economics, engineering, social science, medical science, and so on. In 2010 Muhammad shabir, Munazza Naz [8] used soft sets to define a topology namely Soft topology. Soft generalized closed set was introduced by K.Kannan [4] in 2012. The investigation of generalized closed sets has led to several new and interesting concepts like new covering properties and new separation axioms. Some of these separation axioms have been found to be useful in computer science and digital topology. In this paper we defined soft A_RS - closed mapping, soft A_RS - open mapping and a detailed study of some of its properties in soft topological spaces. With the help of counter examples, we show that the noncoincidence of these various types of mappings.

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ON SOME NEW CLASSES OF GENERALIZED CLOSED SETS IN TOPOLOGY

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Abstract

In this paper we introduce some new classes of generalized closed sets in topological space called α^*_{AS} -closed set and α^{**}_{AS} -closed set. We study some properties and several characterizations of these classes, also we explain the relation of α^*_{AS} and α^{**}_{AS} - closed sets with many other classes of closed sets.

1. Introduction

The concept of topology was first developed in 17th century by Gottfried Leibniz. In 1969, Levine introduced the concept and properties of generalized closed (briefly g-closed) set. Later, Noiri et al., Dontechev, Gnanambal, Arya and Nour, Bhattacharya and Lahiri, and Maki et al. introduced and studied the concept of gp-closed, gsp-closed, gpr-closed, gs-closed, sg-closed, αg-closed and gα-closed.

2. α^*_{AS} -closed set

In this section we introduce a new class of closed set in topological space called α^*_{AS} -closed set and investigate their properties.

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SOFT A_RS -CLOSED SETS IN SOFT TOPOLOGICAL SPACES

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ABSTRACT. In this paper, we introduce new category of soft set called Soft A_RS -Closed sets. Also we study in details the properties of Soft A_RS - Closed sets and its relation with other soft sets. All these findings will provide a base to researchers who want to work in the field of soft topology and will help to establish a general framework for applications in practical fields.

1. INTRODUCTION

Molodtsov introduced the concept of soft sets from which the difficulties of fuzzy sets, intutionistic fuzzy sets, vague sets, interval mathematics and rough sets have been rectified, [8]. A soft set over the universe U is a parametrized family of subsets of the universe U. Application of soft sets in decision making problems has been found by Maji et al. in [7], whereas Chen gave a parametrization reduction of soft sets and a comparison of it with attribute reduction in rough set theory, [3]. Further soft sets are a class of special information.

Shabir and Naz introduced soft topological spaces in 2011 and studied some basic properties of them, [10]. Meanwhile generalized closed sets in topological spaces were introduced by Levine in 1970 and recent survey of them is in which is extended tosoft topological spaces in the year 2012. Further Kannan, [6] and Rajalakshmi have introduced soft $g-$ locally closed sets and soft semi star generalized closed sets. Soft strongly $g-$ closed sets have been studied

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Key words and phrases. soft A_RS - closed sets, soft A_RS - open sets.

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Steiner Domination In Line And Jump Fuzzy Graphs

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Abstract—Line graph L(G) of a graph G is acquired by converting the arcs of G into nodes of the L(G) and connecting the nodes of L(G) only if the corresponding arcs are incident with the same node. The jump graph J(G) is the complement of L(G). In this article bounds on steiner domination numbers of line fuzzy graphs and jump fuzzy graphs are obtained.

Keywords : fuzzy steiner domination, line fuzzy graphs, jump fuzzy graphs.
AMS Subject Classification 2010 : 05C72, 05C69, 51E10

1. Introduction

Rosenfeld launched fuzzy graph theory which has its applications in diverse fields. In particular fuzzy topologies are used in circuit designing and fuzzy steiner distance and domination have applications in routing problems. In engineering field steiner trees have applications in network routing, wireless communications and VLSI design. Various fuzzy graph theoretic concepts has been studied from [6] and [7]. In [1] and [2] the authors described about domination in fuzzy graphs. Steiner domination in crisp graphs was studied from [3], [4] and [5]. A steiner set of a fuzzy graph (V, σ, μ) is a set of nodes S such that any node in G lies in some steiner tree of G. A steiner dominating set of G is a set of nodes which is both steiner set as well as dominating set. The minimum fuzzy cardinality of a minimal fuzzy Steiner dominating set is called fuzzy Steiner dominating number denoted by γ^{fs} and the maximum fuzzy cardinality of a minimal fuzzy Steiner dominating set is called upper fuzzy Steiner dominating number denoted by Γ^{fs}. Here we acquire some bounds on steiner domination numbers of line fuzzy graphs and jump fuzzy graphs.

2. Steiner Domination in Line fuzzy and Jump fuzzy graphs

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Steiner μ Distance in Fuzzy Graphs with Application

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Abstract : In this article we define Steiner and upper Steiner μ distances in connected fuzzy graphs by combining the notion of Steiner distance with μ distance and proved that both are metric. Also based on μ length, eccentricity, radius, diameter, diametric vertex, eccentric vertex, centre, convexity, self-centred graphs are introduced for both Steiner and upper Steiner μ distances . Some common characteristic properties are analysed and relation between Steiner and upper Steiner μ distances are discussed with an application. A model result is given for transport network.2010 AMS Classification: 05C72, 05C12

Keywords : Fuzzy Steiner μ-distance, upper Fuzzy Steiner μ-distance, fuzzy Steiner μ_k-eccentricity, upper fuzzy Steiner μ_k-eccentricity.

I. INT RODUCTION

We often face unpredictability in many of our real life problems. So we need to consider fuzziness in every field. Rosenfeld developed the postulation of fuzzy graph theory in 1975. Although a fuzzy graph is similar in structure to that of a crisp graph, it better describes a real situation than a crisp graph and has some special characteristics. Steiner distance in crisp graphs and its properties were described in [3] and [10]. The properties of fuzzy graphs and their applications in various fields are studied from [1], [2], [4], [6], [7] and [8]. Some new distance parameters are introduced and examined in [5] and [9]. Here we introduce new parameters Steiner μ distance and upper Steiner μ distance in fuzzy graphs.

II. PRILIMINARIES

Through out this article we consider only the connected fuzzy graphs G without loops and assume that V is finite and nonempty. Also we use the terms 'nodes' for vertices and 'arcs' for edges.

Definition 2.1 If G is a connected graph with n nodes and S is a subset of V (G), then the Steiner distance among the nodes of S is defined as the minimum size among all connected minimal sub graphs whose node sets contain S. These sub graphs are called Steiner trees of S.

Definition 2.2 The Steiner interval, $I_G(S)$ or I(S), of a set S is defined by $I_G(S) = \{w \in V(G) / w$ lies on a Steiner tree for S in G$\}$

Definition 2.3 Let G be a connected crisp graph and S, the subset of nodes V (G), if I(S)=V(G) then S is called a Steiner set.

Definition 2.4 A fuzzy graph is denoted by G (V, σ, μ) where V is a node set, σ is a fuzzy subset of V and μ is a fuzzy relation on σ which satisfies $\mu(u,v) \leq \sigma(u) \wedge \sigma(v) \forall\ u,v \in V$.

Definition 2.5 For a connected fuzzy graph, if P is the path: $u_0,u_1,...,u_n$ then the μ−length of P, l(P) is the sum of reciprocals of arc weights . That is $l(P) = \sum_{i=1}^{n} \frac{1}{\mu(u_{i-1},u_i)}$. If n = 0, then l(P) = 0.and μ− distance is the smallest μ−length of any u−v path.

III. FUZZY STEINER μ DISTANCE

Definition 3.1 Let G (V,σ,μ) be a connected fuzzy graph with n nodes. The Steiner μ distance between any two nodes of a non-empty set S ⊆ V (G) is defined as the minimum sum of reciprocals of arc weights of minimal connected fuzzy sub graphs containing S. These fuzzy sub graphs are called fuzzy Steiner trees for S. The fuzzy Steiner μ distance of S is denoted by $d_{\mu G}(S)$ (or) $d_{\mu S}(u,v)$ where u and v are nodes in S. For k = 2,3,….n we define the following parameters of fuzzy Steiner μ-distance.

Definition 3.2 The fuzzy Steiner μ_k-eccentricity $e_{\mu_k G}(u)$ of any node u is given below

$$e_{\mu_k G}(u) = \max\{d_{\mu S}(u,v)/S \subseteq V(G), |S| = k \ \&\ u,v \in S\}$$

Definition 3.3 The fuzzy Steiner μ_k radius of any node u in G is

$$r_{\mu_k G}(G) = \min\{e_{\mu_k G}(u)/\ u \in V(G)\}$$

Definition 3.4 The fuzzy Steiner μ_k diameter of a node u in V (G) is

$$\mathrm{diam}_{\mu_k G}(G) = \max\{e_{\mu_k G}(u)/\ u \in V(G)\}$$

Definition 3.5 A node u is a fuzzy Steiner μ_k diametral node (or) peripheral node if

$$e_{\mu_k G}(u) = \mathrm{diam}_{\mu_k G}(G)$$

Definition 3.6 The fuzzy Steiner μ_k centre $C_{\mu_k}(G)$ of a fuzzy graph G is the fuzzy subgraph induced by the nodes u of V(G) with $e_{\mu_k G}(u) = r_{\mu_k G}(G)$.These nodes are called fuzzy Steiner μ_k central nodes (or) fuzzy Steiner μ_k eccentric nodes.

Definition 3.7 The fuzzy Steiner μ_k median of G is the fuzzy subgraph of G induced by the nodes of minimum fuzzy Steiner μ_k distance in G.

Definition 3.8 The fuzzy average Steiner μ_k distance of a graph G, is defined as the average of the fuzzy Steiner μ-distances of all k-subsets of V (G).

Definition 3.9 A subset of nodes S is called fuzzy Steiner μ_k convex if each vertex in any

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Semi-Regular*-Continuous Functions

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Abstract

The purpose of this paper is to provide the new characterizations of semi-regular*-open and semi-regular*-closed sets by defining the concepts of semi-regular*-continuous and semi-regular*-irresolute mappings and study their characterizations in topological spaces.

Keywords and phrases: semi-regular*-open set, semi-regular*-closed set, semi-regular*-continuous, semi-regular*-irresolute function.

1. Introduction

In 1963, Levine [3] introduced the concept of semi-continuity in topological spaces. The concept of regular continuous functions was first introduced by Arya, S.P. and Gupta, R. [1]. S. Pious Missier and M. Annalakshmi [10] introduced the concept of regular*-continuous functions and regular*-irresolute functions and investigate their properties. Quite recently, the authors [13, 14] introduced some new concepts, namely semi-regular*-open sets, semi-regular*-closed sets. The aim of this paper is to introduce new class of functions called semi-regular*-continuous, semi-regular*-irresolute functions and investigated their properties.

2. Preliminaries

Throughout this paper (X, τ), (Y, σ) and (Z, η) represent non-empty topological spaces on which no separation axioms are assumed unless otherwise mentioned.

Definition 2.1: A subset A of a space X is

(i) generalized closed (briefly g-closed) [4] if $Cl(A) \subseteq U$ whenever $A \subseteq U$ and U is open in X.

(ii) generalized open (briefly g-open) [4] if $X \setminus A$ is g-closed in X.

Definition 2.2: If A is a subset of X,

(i) the generalized closure of A is defined as the intersection of all g-closed sets in X containing A and is denoted by Cl*(A).

BETWEEN REGULAR*-CLOSED SETS AND SEMI-PRE-CLOSED SETS

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Abstract: In this paper a new class of sets, namely semi-regular*-closed sets, as the complement of semi-regular*-open sets is introduced in topological spaces. This class falls in between the class of regular*-closed sets and the class of semi-pre-closed sets. We find the characterizations of semi-regular*-closed sets. We also define the semi-regular*-closure of a subset. Further we investigate fundamental properties of the semi-regular*-closure.

Keywords: semi-regular*-open set, semi-regular*-interior, semi-regular*-closed set, semi-regular*-closure.

1. INTRODUCTION

In 1963 Levine [3] introduced the concepts of semi-open sets and semi-continuity in topological spaces. Levine [4] also defined and studied generalized closed sets as a generalization of closed sets. Dunham [2] introduced the concept of generalized closure using Levine's generalized closed sets. In 1937, regular open sets were introduced and used to define the semi-regularization space of a topological space. Quite recently the authors [8] introduced and studied some new concepts namely regular*-open sets. The authors [13] have recently introduced the concept of semi-regular*-open sets and investigated its properties. The semi-regular*-interior of a subset has also been defined and its properties studied.

In this paper, we define a new class of sets, namely semi-regular*-closed sets, as the complement of semi-regular*-open sets. We further show that the class of semi-regular*-closed sets is placed between the class of regular*-closed sets and the class of semi-pre-closed sets. We find characterizations of semi-regular*-closed sets. We investigate fundamental properties of

A New Class of Nearly Open Sets In Topological Spaces

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Abstract

In this paper we introduce a new class of sets, namely semi-regular-open sets. We give a characterization of semi-regular*-open sets. We also define semi-regular*-interior of a subset. Further we study some fundamental properties of semi-regular*-open sets.*

Keywords: *semi-regular*-open set, semi-regular*-interior.*

I. INTRODUCTION

Norman Levine [3] introduced semi-open sets in topological spaces in 1963. Since the introduction of semi-open sets, many generalizations of various concepts in topology were made by considering semi-open sets instead of open sets.Levine [4] also defined and studied generalized closed sets in 1970. Dunham [2] introduced the concept of generalized closure using Levine's generalized closed sets and studied some of its properties. In 1937, regular open sets were introduced and used to define the semi-regularization space of a topological space. Quite recently the authors [8] introduced and studied some new concepts namely regular*-open sets.

In this paper, we introduce a new class of sets, namely semi-regular*-open sets, using the generalized closure operator Cl* due to Dunham. We further show that the concept of semi-regular*- open sets is weaker than the concept of regular*-open sets but stronger than the concept of semi-pre open sets. We investigate fundamental properties of semi-regular*-open sets. We also define semi-regular*-interior of a subset and study some of its basic properties.

II. PRELIMINARIES

Throughout this paper (X, τ) will always denote a topological space on which no separation axioms are assumed, unless explicitly stated. If A is a subset of a space (X, τ), $Cl(A)$ and $Int(A)$ denote the closure and the interior of A respectively

Definition 2.1: A subset A of a space X is **generalized closed** (briefly g-closed) [4] if $Cl(A) \subseteq U$ whenever $A \subseteq U$ and U is open in X

Definition 2.2: If A is a subset of a space X, the **generalized closure** [2] of A is defined as the intersection of all g-closed sets in X containing A and is denoted by $\boldsymbol{Cl^*(A)}$.

Definition 2.3: A subset A of a topological space (X, τ) is **semi-open** [3] (respectively **semi*-open** [11]) if there is an open set U in X such that $U \subseteq A \subseteq Cl(U)$ (respectively $U \subseteq A \subseteq Cl^*(U)$) or equivalently if $A \subseteq Cl(Int(A))$ (respectively $A \subseteq Cl^*(Int(A))$).

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'Collective Unconscious' Of Zoroastrian Ethnicity in Gieve Patel's *Princes*

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Abstract

Gieve Patel, an acclaimed Indian poet, playwright, and painter is one of the eminent Parsi writers in English of the Modernistic period. He is a meritorious extoller and advocate of Parsi community and his desire to be both a defender of Parsi ethnicity and a rational proponent of the community's regeneration - lingers on his cultural narrations. All his artistic compositions - poetry, paintings, sculptural engravings or plays - loudly reverberate and uniquely portray the collective unconscious of Parsi ethnicity; "collective unconscious" (42) in the Jungian sense is a storehouse of the repressive memories specific to the ancestral past and it exerts overwhelming influence on the minds of individuals.

Key Terms: Parsi ethnicity, Pride, Acculturation, Religious identity, Collective unconscious.

Zoroastrians of the Persian Sassanid Empire enjoyed the political patronage of the Persian empires for several centuries. When they suffered complete defeat in the hands of the Arabs, the Zoroastrians eventually left their homeland and sought asylum in India about the year 720 A.D and they came to be called Parsis. Their religion Zoroastrianism is named after the Prophet Zarathushtra / Zoroaster in Persia. His thoughts and teachings collected in their holy book, *Avesta,* are the basis of Zoroastrianism. Its core beliefs are 'Humata, Hukta, Huvarshta' (Good Thoughts, Good Words, Good Deeds) which are simple, practical and life-driving forces. John Fletcher Hurst observes that, "Parsis could have remained in Persia, had

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THE FORLORNNESS OF THE STOLEN – GENERATION IN DORIS PILKINGTON'S *UNDER THE WINTAMARRA TREE*

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ABSTRACT

In the process of colonizing Australia the colonizers exploited and tortured the native aborigines. To the Britishers, Australia was a penal colony. The colonial governments not only stole the aborigines' land, resources and wealth, but also they stole the children from the indigenous families. This left psychic scares on the indigenous mothers who lost their children. In the name of civilization several policies were introduced to convert and institutionalize the aborigines. One among the policies was the 'assimilation policy'. It was advocated in all the states of Australia to remove the aboriginal children from their homes. These forcibly removed children were put up in welfare homes to provide them with a walled knowledge education. This was inclusive of the European values, the white culture and their religion. These children were called as the 'stolen generation'. Till date the filched generations fight for their place in the white Australian society. They also clamour for an eternal compensation for their traumatic lost condition. Aboriginal literature is filled with memoirs, stories and testimonies of the forced removal of children from their mothers. It is likely that the history of the removal of these children is to be undocumented without the writings of the aboriginal writers. It is their personal experiences that fill the picture of generations of the separated children. This paper will foreground on the traumatic condition of the stolen generation writer DorisPilkington's novel

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Voicing the Silenced: A Critical Study on Kavita Kane's *Menaka's Choice* in Feminist Perspective

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Abstract:

Woman is a woman. This paper analyzes the woman characters that were not voiced in the epics. Women are shown as the voiced voiceless characters. They planted their role sternly, but still not seen by the people. This voice was given by Kavitha Kane in her works through the epics. Kavitha Kane is an upcoming Indian author who was influenced by the characters of the myth. *Menaka's Choice* is one of the books which retells about the characters of Viswamithra and Menaka by putting Menaka in the lime light. This paper traces the elements of feminism in the voiceless Menaka.

Keywords: Kane, *Menaka's Choice*, feminism, myth, Menaka.

Literature is a place where the emotions and the subjects which tend to give certain ideologies. Writers often give the narration to the theme or emotion which they attached to that emotion. Writing helps them to invoke the minds of the people to real struggles of the people in the current era. The writer makes the reader feels emphatic to the characters of the writing.

Kavitha Kane, an upcoming Indian writer, is one among them. She gives different point of view on women who were rarely known to the world. The characters have voiced but they were made voiceless by the others of the typical patriarchal society. Kane brings out feministic ideals through the characters of the epic. The stories that she heard from her grandma became an inspiration to the novels. The characters she uses from the epic are often neglected or voiced out by the writers and readers. It is like retelling the epic with a different spec of idea. The position of women has always been controversial. A range of position is visible in the Indian mythology.

> "The various myths too represent these women as per these doctrines of the earlier days. Sure, there have been hundreds of retellings and reinterpretations through the centuries in which our female protagonists have been recast in new moulds. But these stories have remained confined to their niche, and their reach has been limited in

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Carol Ann Shields's *The Republic Of Love* as a Thirst for Monochromatic and Other Aspects

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Abstract

Canadian literature has been strongly influenced by international immigration, particularly in recent decades. Before European contact and the confederation of Canada, indigenous people in North America have occupied Canada and have maintained a rich and diverse history of culture, identity, language, art and literature. Carol Ann Shields works mainly focused on the existential aspects and individual self. *The Republic of Love* is no exception. It speaks about the subject of love treated with pure romanticism and mistrust. Shields was very much aware of the fashionably dim view of love taken today. She loved stories that placed lovers in isolation and wanted her pair of lovers firmly in the midst of their community where the networks of family and friends form the real street maps. Shield's perception of love is mythical and self oriented. Its arrival cannot be arranged nor its properties deconstructed. This monochromatic aspect intended to be reflected in the occupations of the characters, Fay's involvement with mermaids accentuates her existence with a mythic quality while Tom's charisma over the air waves and his impact on other people's lives is intended to give a magical dimension. A man should resubmit his individuality as much has he can have particular ideas about himself. It should be elaborated by the logic of self and other aspects. This paper Carol

Creation of Identity, at the Alienation of Sisters in Marilynne Robinson's *Housekeeping*.

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Abstract

Family frames identities and people define themselves, from the origination of their relationships. Marilynne Robinson's novel, *Housekeeping* narrates the story of the two sisters, Lucille and Ruth, with no father figure from the beginning of the novel. They lose their mother at a young age and pass through a series of guardians: all of which are female. The text, narrated by Ruth, clearly says that the girls struggle to frame a relationship with a mother figure at the homes they enter. During this search they struggle to identify themselves. After a series of abandonment, Ruth and Lucille of Robinson's *Housekeeping* create their own identities through the mother-daughter relationships; they form in the homes where they connect with. The characters disconnect themselves with the patriarchal order and enter into transience by purification, mystical union and contemplation. This paper aims to demonstrate, *Housekeeping,* an identity- formation at home, which results in the painful alienation and irrevocable estrangement of the two sisters.

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ANTHROPOLOGICAL APPREHENSIONS IN PAULO COELHO'S *THE ALCHEMIST*

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Latin America is a region with a very diverse population of many ethnic groups and different ancestries. Amidst their unique culture and traditions, these nations exhibit an internal coherence. Their internal coherence arises out of the common colonial history, as well as the romance languages that bind these countries together. Paulo Coelho is one of Latin America's leading novelists. The novels of Paulo Coelho focus on the central theme of pursuing life's destiny. Life's destiny is a personal calling that every individual is expected to fulfill in his lifetime. The necessity to realise this personal calling is emphasised in all his novels. The obligation that Coelho exhibits (as an author) to kindle the spirit of quest in the minds of the readers, makes him a worthy anthropologist. This research paper is an attempt to unravel Coelho's anthropological concerns and his contribution to mankind through his writings. Coelho's novels provoke the sense of self-discovery and the art of challenging all limitations and traditions.

An insight into Coelho's life exposes the clear impact of his personal life on his novels and his anthropological concerns. All the experiences of his repressive childhood inspire him to be a potential writer who is capable of propagating self-actualisation. His rebellious disposition since his childhood feeds him with the fuel to chisel an unyielding fighter in him. He is undeniably a "warrior of light" who strives hard to fulfill his purpose of existence. Coelho is a profound realist who does not propagate escape from reality as the panacea for the chaos. He is a visionary with a deep sense of spiritualism that forms the crux of his writings. His fictional cosmos is intensely influenced by the humanitarian issues of the real world that he inhabits.

Coelho is a careful planner as far as the plot structure of his novels is concerned. Being aware of the fact that the plot draws the attention of the readers into the lives of the characters, he devises the plot usually in the form of a quest or journey. He follows this method of operation most importantly to enunciate the fact that human life itself is one long journey. The development in the plot of the novel takes place as the journey undertaken by the protagonist evolves from an exterior and physical one into an interior journey through which the character attains self-actualisation, i.e. he/she becomes aware of the inner self and emerges as a completely changed person with a new perception of life. Gloria Ponziano in her book, *Journey to Love: Following One's Inner Voice*, writes how man intentionally or unintentionally undertakes a journey in life. She remarks:

> I believe each of us embark upon a journey the day we're born. … Usually we're not even aware we're on a journey until something significant happens that grabs our attention. And once it does, we need to be open to what's being presented to us; otherwise we could miss the potentials and possibilities that can lead us into our life's purpose, destiny, and true fulfilllment. (11)

The journey initially is portrayed as a quest made by a character in order to pursue his/her dream but as it takes its course, it transforms into a journey of self-reflection, a 'journey to the interior'.

Through the life of Santiago, the protagonist of *The Alchemist*, Coelho evinces a myriad of anthropological doctrines that manifest to the readers the 'raison d'etre' of human life and existence. Santiago sets out on a journey to the Pyramids, as he envisions a recurrent dream. He encounters numerous sufferings on his way, yet, does not give up his determination. The journey of Santiago which initially is projected as a pursuit of a hidden treasure, eventually, enlightens him on the purpose of his existence.

Plot construction through the technique of a journey or a quest has been in trend since time immemorial. It has been widely used as a theme across world literatures beginning from the time of Homer to Virgil and then Dante to Eliot. Owing to its unfailing impact, this theme has evolved as an archetype. It could be rightly argued that Homer's ancient quest tale entitled, *Odyssey*, had set the trend of using journey as a technique to develop the plot structure, following which various national literatures

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Analysing Margaret Laurence's The Stone Angel in Feminist Perspective

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Abstract

Women are largely regarded as weak and reliant on others by the majority of people in society. This statement is totally illogical and cannot be agreed upon in its entirety. There are women who struggle through their lives on their alone, who must confront the challenges that life throws at them with no one by their side, and who do so by lifting their heads in the face of a society that refuses to bend down to them. Such a person is Hagar, a character developed by Margaret Laurence in her novel The Stone Angel. Hagar is a woman who refuses to submit to the male-dominated culture in which she lives. The Stone Angel is a novel set in a fictional hamlet called Manawaka that takes the reader on a trip through Hagar's life and psyche. The feministic qualities of the title figure are reflected in the work of The Stone Angel. In The Stone Angel, Margaret Laurence attempts to diagnose and understand the inner struggles of the women's characters in the context of their social and political environment. Furthermore, she explores the characters' personal lives from within their own awareness in order to study their relationships with one another and to assess their potentiality. Laurence attempts to assist women in developing a more positive identity since she strongly disapproves of the negative and harmful self-image that Canadians have developed for themselves and wants to see them regain their genuine selves, which she believes they have lost.

Keywords: Individualisation, Negative Self-Image, Neurosis, Self-Actualization

In the context of feminism, it is concerned with redefinition of the world on the basis of the experiences and locations of women, taking into account their oppression and subordination. Feminist critique has as its primary objective or goal the dismantling of the patriarchal structure. This novel's feminist perspective might be defined as a form of backgrounding, as there is hardly little visible treatment of these subjects throughout the novel. Laurence acknowledges Hagar's share of blame, and she asserts that the pressures of patriarchal standards, which resulted in Hagar's stubbornness and pride, have damaged both men and women. She can be associated with the stone that serves as the novel's major image and represents Hagar's pride and blindness, which are both represented by the stone. His daughter's father, Jason Currie, fosters the development of male qualities in her while overlooking the development of certain female virtues that he expects her to demonstrate in the future. What Hagar fails to recognise is that a lady is, first and foremost, a lady. In this piece, we can see the effects of an education that attempts to make women ornamental and that will keep her reliant on her male partners. Her feeling of self-worth is a crucial issue that runs throughout the narrative.

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ORIGINAL RESEARCH PAPER

Commerce

LITERACY AND USAGE OF VALUE ADDED SERVICES OFFERED BY BANKS

KEY WORDS:

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ABSTRACT

The value added services in banking services in banking service sector have been introduced to the customer's satisfaction in this competitive field. It is not only important to introduce various schemes and services to the society but also we must make sure that the services we offer do properly reach the customers and they are aware of it. This can be termed as 'customer literacy'. As like the changing lifestyle of people, banking sectors also offer various services to its customers to ensure loyalty and comfort of the customers. The process of withdrawal of money and deposits are made simpler and easier in today's world. Everybody who holds a bank account can access money from anywhere without being physically visiting the bank. This study enables the readers to understand the value added services offered by the banking sectors. In addition to that this study helps the readers to know the customer's literacy and usage of the value added services offered by banks. The study is conducted with the help of suitable statistical tools. Interviews schedule is also conducted to infer the details from the customer.

INTRODUCTION TO THE STUDY

The technological development in the banking sector, like information technology, security systems and description models has brought significant changes in modern banking services in India. Many value added services in banking services in banking service sector have been introduced to the customer's satisfaction in this competitive field. Thus in long run, it will pave way for the significant growth in service sector. In olden days, people spent three to four hours for banking transactions. But now customers are being handled with care and caution by providing advanced technology based services without sacrificing the concepts of secrecy and reasonable care.

STATEMENT OF THE PROBLEM

Now a days banking is not done in its traditional way, with new advancement of technology the focus is to provided value added services to satisfy and certain customer loyalty. Banking sectors offer many value added services for the customers. It also motivates customers to avail the services. But, not all customers are aware of the banking services. Also, users of value added services are not aware of the security issues involved in those services. Some don't know about the security issues and some strongly believe that these services are always safe. Thus, literacy about the value added services of banking is lacking among the customers.

VALUE ADDED SERVICES

- A credit card is a payment card issued to users to enable him to pay a merchant for goods and services. The card issuer (usually a bank) creates a revolving account and grants a line of credit to the cardholder, from which the cardholder can borrow money for payment to a merchant or as a cash advance.
- A debit card (also known as a bank card, plastic card or check card) is a plastic payment card that can be used instead of cash when making purchases. It is similar to a credit card, but unlike a credit card, the money is immediately transferred directly from the cardholder's bank account when performing any transaction. Debit cards usually also allow instant withdrawal of cash, acting as an ATM card for this purpose.
- On- line banking is now moving to the mobile world, giving everybody with a mobile phone access to real-time banking services, regardless of their location. But there is much more to mobile banking from just on-line banking. The potential of mobile banking is limitless and is expected to a big success. Booking and paying for travel and even tickets is also expected to be a growth area. A customer can access account details on mobile using the Short Messaging System (SMS) technology where select data is pushed to the mobile. The wireless application protocol (WAP) technology allows user to surf the net on their mobiles to access anything and everything.
- Real-time gross settlement (RTGS) systems are specialist funds transfer systems where the transfer of money or securities takes place from one bank to any other bank on a "real time" and on a "gross" basis. Settlement in "real time" means a payment transaction is not subjected to any waiting period, with transactions being settled as soon as they are processed. "Gross settlement" means the transaction is settled on one-to-one basis without bundling or netting with any other transaction. "Settlement" means that once processed, payments are final and irrevocable.
- Tele banking refers to banking on phone services; a customer can access information about his/her account through a telephone call and by giving the coded Personal Identification Number (PIN) to the bank. Telebanking is extensively user friendly and effective in nature.
- Cyber Banking refers to banking through online services. Banks with web site "cyber" branches allowed customers to check balances, pay bills, transfer funds, and apply for loans on the internet.

OBJECTIVES OF THE STUDY

- To examine the quality of services offered in banking.
- To know about the various services offered in banking.
- To study the customer response towards the value added services in banking.
- To know the benefits of the value added services for banking.

REVIEW OF LITERATURE

Ravi C.S, Kundan Basavaraj (2013) in their study on "Customers preference and satisfaction towards banking services with special reference to Shivamogga District in Karnataka", pointed out that, after the implementation of government policies on globalization and liberalization, the banks started providing a variety of products and services to the customers. The customers can utilize the service offered to them only if they are aware of it. The banker and customer have to know about one another. The banker has to understand the customers' needs and in the same way, the customer has to know about the numerous services offered by the banks. **Singh Shamsher** (2014) conducted a study on customer perception of mobile banking in the region of Delhi. The study revealed the technology as third wave of revolution after agriculture and industrial revolution. The adoption and

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Investment Stratagem of It Employees

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Abstract

Saving and Investment are two key variables which play a significant role in economic growth, control of inflation, stability and promotion of employment especially in the context of developing countries. In general, to invest is to distribute money in the expectation of some benefit in the future. Actually, the present study identifies about the preferred investment avenues among IT investors from backward areas using their own self-assessment test. This paper analyse and found that IT sector employees consider more safety as well as good return on investment rather than taking risk, when compared to urban IT sector employees.

Keywords: Investment, Savings, IT Sector, Rural, Urban, Profit, Risk and Return

Introduction

India is the world's leading outsourcing destination, and offers an advanced ecosystem for foreign investors looking at the information technology (IT) sector. However, the IT sector is undergoing a critical transition phase as it adapts to the disruptions caused by automation and allied technologies popularly referred to as SMAC or social media, mobility, data analytics, and cloud computing.

Here the employees from rural and urban cities are noted. Their perception is varying with respect to savings and their mode of investment. Technology professionals that have been laid off can participate in the country's vibrant start up scene, while others will be available for employment with new market entrants. Meanwhile, the sector's investment in new verticals, along with the upskilling of the domestic talent pool, will only strengthen the world-class infrastructure and service capabilities currently in place.

Investment Option Available

There are various number of financial instruments available today for investment purpose. The employee has to choose Proper Avenue among those available, depending upon their specific need, risk preference, and return that are expected.

Objective and Scope of Study

a. To know the investment preference of IT sector employees and working in Chennai city IT Companies.

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Role of Women Participation in the Distribution of Seafoods in Thoothukudi District

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Abstract

The Fishing is the main occupation which increases the importance in our economy .The people of Thoothukudi earns a major share of income from Fishing. The major share is occupied by the women fisherfolk in the distribution of the sea foods. This research paper is an attempt to study and to discuss about the role of women participation in the distribution of sea foods in the district of Thoothukudi.

Keywords : Fishing, Women participation, Distribution,.

INTRODUCTION

Thoothukudi, traditionally known as the Pearl City. The district has made a rich history on pearl fishing. Thoothukudi lies in the Coromandel Coast of Bay of Bengal. It is located about 590km south of Chennai and 190 km from north east Thiruvananthapuram. . According to the official census taken in 2011, The population of the district is about 17,50,000. The population has been increased to 11.32%. People of Thoothukudi are the major dependant

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CUSTOMERS' PERCEPTION TOWARDS SERVICE QUALITY OF PUBLIC SECTOR BANKS USING SERVQUAL

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Abstract

Service sector is the lifeline for the social economic growth of a country. It is today the largest and fastest growing sector globally contributing more to the global output and employing more people than any other sector. For most countries around the world, services are the largest part of their economy. The real reason for the growth of the service sector is due to the increase in urbanization, privatization and more demand for intermediate and final consumer services. Availability of quality services is vital for the well being of the economy. The study is based on both primary and secondary data. The primary data were collected from customers having account with the selected four banks for the study. The secondary data were collected from bulletins of RBI and IRDBT, books, bank official websites, bank magazines, reports, newspapers, journals and websites. Details of customers from each bank could not be obtained from the banks due to banks' privacy issues and topic sensitivity. Therefore, the researcher decided to contact the respondents from the selected bank branches in the district. Simple random sampling method was adopted to select the branches and purposive sampling method was adopted to select the respondents. Customers who are availing banking services from the selected bank are selected for the study. 400 sample respondents were selected for the study from the selected four banks. This paper discussed on the consumers' perception towards service quality of public sector banks in Tirunelveli District, Tamilnadu, India.

Keywords: *Consumers, Perception, Service quality, SERVQUAL, Public sector bank*

INTRODUCTION

"Customer service deserves an outlook that puts a check on targets sought to be achieved by customer service executives by way of a rigor of compliance with extant rules and regulations. Profit seeking is the basic ethos that governs any business entity but the same cannot and must not override the genuine demands and requirements of customers".

- Shri G Gopalakrishna

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INVESTMENT STRATAGEM AND BEHAVIOUR OF IT SECTOR INVESTORS WITH RESPECT TO CHENNAI CITY

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ABSTRACT

Financial harvestment Stratagem only a speculation action in different money related plans, put resources into current situation to be used in future or at the hour of emergency. Right now, In this process, planning plays a vital role. A month to month salaried speculator may put resources into any of the accompanying like Capital markets, Fixed Deposits in different budgetary establishments, PPF's, Postal office, Life Insurance, Real Estate, products showcase, etc. A demonstration of venture controls a person's spending style and instill the propensity for reserve funds. The essential information for this examination is gathered by simple random sampling with the example size of 150 IT sector speculators through an organized survey. This paper is about the speculation display of IT salaried investors working in Chennai city. The present investigation is a shot to break down the investment stratagem of salaried financial specialists towards money related plans. It uncovers that, rough approximation of venture includes getting to the different pin on of speculations like return, chance, liquidity, tax reductions and accommodation are the key properties which taken into conversation before including into any method of venture.

KEYWORDS: Financial, harvestment, strategy, IT sector, salaried employees, investment, risk, return

INTRODUCTION

A venture is the ramifications of assets with a point of accomplishing monetary profit and development in future. An Investment is that the allotment of money related assets to resources that will bring anticipated yield of some increase or positive return over a given measure of time. Clearly, Investment focuses on duplication of money at sequential rates depending upon whether it is for quite some time run or momentary venture and whether it is dangerous or safe investment. An interest in information grants the extraordinary intrigue. From the people reason for read, the venture could be a responsibility of an individual's assets to infer future monetary profit inside the sort of intrigue, profits, lease and premium, annuity points of interest or valuation for the value of their rule capital. There ought to be a need to contribute and acquire salary on their inactive assets and produce a negligible include of money for a specific objective throughout everyday life and make an arrangement for a dubious future. One of the significant motivation behind why one needs to contribute shrewdly is to meet the expense of expansion is the rate at which the typical cost for basic items increments.

REVIEW OF LITERATURE

David and Ferray (2017), in their research paper, Retirement Savings Behavior of Salaried Employees, they found that attitudinal preference towards a risk and a perception of opportunity served as mediators for the relationships among employee's dispositional

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Corporate Social Responsibility (CSR): A Striving Force To Retain Customers

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Abstract: The customers' awareness and attitude towards CSR practices in banking sector with special reference to State Bank of India was focused in this study. The major objectives of the study is to establish the extent customer awareness and attitude towards CSR activities carried out by SBI and to determine the effects of corporate social responsibility activities on customer loyalty. The results of the study showed that the CSR practices of SBI to the customers the study established that they specifically derived prestige from the socially responsible brand and also shared in the increased share value created for the investors and the economic, social and environmental benefits enjoyed by the communities. The study established that the regulators were interested in corporate citizenship of the players through the practice of CSR as embodied by State Bank of India (SBI).

Keywords: Awareness, Attitude, Banking, CSR, Customer, SBI.

I. INTRODUCTION

It has increasingly been noted that Corporate Social Responsibility (CSR) has become a mainstream of business activity. Many firms have incorporated CSR as part of their

POWER OF DIGITAL TECHNOLOGIES AND SKILLS IN CONSTRUCTION INDUSTRY THROUGH HIGHER EDUCATION

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Abstract

Construction is a fragmented process with the general contractor, individual trades and multiple suppliers each operating as separate functions on a project, which regularly affects time, quality and cost. By adopting a more innovative approach and improving links in the whole industry supply chain to undertake research and development, the construction industry would be better placed to innovate and as a consequence capitalize on the challenges and opportunities presented by the national and global market. Construction industry is an ever growing demand for housing, infrastructure, and energy projects, yet there are challenges with the current workforce. Technological advances in construction will allow projects to be better designed and constructed faster, leading to customer satisfaction and financial gains. Digital transformation Digital is undoubtedly a hot topic capturing the attention of all stakeholders of engineering and construction (E&C) companies around the world — from the front lines at physical locations, to the C-suite, the board, the suppliers and the customers interacting with the space. The heart of transformation is the biggest challenge for most people — change. As a leader, change and transformation must first take place within. The present study aims to analyze the various new technologies used in construction industry. Both primary and secondary data were used for this study, 50 sample respondents were taken randomly for analysis. Based on the finding, the researcher has given suitable suggestion related to digital technology.

Keywords: Construction industry, Digital Technologies, Higher Education

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Role of Vakkom Abdul Khader Moulavi in the Transformation of Travancore

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Kerala which occupies a very important place in the Human Development Indices is often comparable to the most developed nations of the world. But everything was not perfect for Kerala also. The pre-colonial times of Kerala was more than pathetic. It was divided into a large number of petty principalities. Caste and gender discriminations were at its peak.

Reforms started among almost all sections of Kerala society by the end of 18th and the beginning of 19th century itself. Among all the communities,Muslims are often considered as a backward community with a lot of superstitions. The anti-British attitude of the Muslim community lagged them much when almost all communities reformed themselves. In the sphere of education, social upliftment etc. they were far behind.

Among the Muslims, Sheikh MahinHamadani, Veliyamcod Umar Khasi, Moulavi Abdul Karim,KarekatKunji Poker Musaliyar, C. SeythaliKutty Master, MoulanaChalilakathKunjuAhmad Haji etc. played a vital role in the overall progress of Kerala Muslims.[1] But among the socio-religious reformers of Muslims, Vakkom Abdul Khader Moulavi plays an important role. Moulavi is considered as one of the greatest reformers of the Muslim community in Kerala and is sometimes referred to as the "Father of Muslim Renaissance in Kerala".[2]

M. Muhammad Abdul Qadir, who later became famous as Vakkom Moulavi was born in 1873 December 28, in Vakkom, a village of Chirayinkizh taluk of the erstwhile Travancore

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[1] 'Islahi Movements in Kerala- till 1950" Souvenir, Mujahid State Conference, Emakulam, 2002, p63

[2] *K M Bahauddin (1992). Kerala Muslims: The Long Struggle. SahityaPravarthaka Cooperative Society ; Modern Book Centre.*

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Kerala which occupies a very important place in the Human Development Indices is often comparable to the most developed nations of the world. But everything was not perfect for Kerala also. The pre-colonial times of Kerala was more than pathetic. It was divided into a large number of petty principalities. Caste and gender discriminations were at its peak.

Reforms started among almost all sections of Kerala society by the end of 18th and the beginning of 19th century itself. Among all the communities,Muslims are often considered as a backward community with a lot of superstitions. The anti-British attitude of the Muslim community lagged them much when almost all communities reformed themselves. In the sphere of education, social upliftment etc. they were far behind.

Among the Muslims, Sheikh MahinHamadani, Veliyamcod Umar Khasi, Moulavi Abdul Karim,KarekatKunji Poker Musaliyar, C. SeythaliKutty Master, MoulanaChalilakathKunjuAhmad Haji etc. played a vital role in the overall progress of Kerala Muslims.[1] But among the socio-religious reformers of Muslims, Vakkom Abdul Khader Moulavi plays an important role. Moulavi is considered as one of the greatest reformers of the Muslim community in Kerala and is sometimes referred to as the "Father of Muslim Renaissance in Kerala".[2]

M. Muhammad Abdul Qadir, who later became famous as Vakkom Moulavi was born in 1873 December 28, in Vakkom, a village of Chirayinkizh taluk of the erstwhile Travancore

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[1] 'Islahi Movements in Kerala- till 1950" Souvenir, Mujahid State Conference, Emakulam, 2002, p63

[2] *K M Bahauddin (1992). Kerala Muslims: The Long Struggle. SahityaPravarthaka Cooperative Society ; Modern Book Centre.*

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நவீனத் தமிழாய்வு

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Role of Women Entrepreneurship In Agriculture-A Case of Agropreneur

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Abstract

Agropreneur is defined as an entrepreneur who uses agriculture to build a business. The term 'agropreneurship' reminds us that even the smallest-scale farmers are business-people.Dollinger (2003) defines entrepreneurship in agriculture as the creation of innovative economic organization for the purpose of growth or gain under conditions of risk and uncertainty in agriculture. Women have very hectic life. Her work starts from dawn and ends at dusk. The daily routine work begins from house cleaning, fetching drinking water, dish washing, laundry, preparing food for family, care of children, tailoring and sewing clothes. She manages these activities very smartly and actively."This paper attempts to find the mettle power of women as a agropreneurMs.Sivaranjanithe promoter of, Amoto – A handmade organic skincare products followed with direct interview method, to identify the interest of women in carrying out a own enterprise with the factor inducing her to start a business in agricultural components, and to recapitulate her socio-economic status. The sampling design used for the study is, Expert sampling is a type of purposive sampling technique that is used when your research needs to glean knowledge from individuals that have particular expertise. At the end of the report the researcher concluded the study as agropreneurs who can work on preeminence can be encouraged more to show the taste of agropreneurship.

Key words: *Agropreneur, inducing factor,socio-economic status.*

Introduction

Women entrepreneurship is the process in which women initiate business, gather all resources, bear risks, face obstacles, provides job opportunities to others and manages the business independently. Approximately 1/3rd of the entrepreneurs in the world are women entrepreneurs.According to Government of India – "A women entrepreneur is defined as an enterprise owned and controlled by woman having a minimum financial interest of 51% of the capital and giving at least 51% employment generated to women" This paper is a study on entrepreneurial capacity and contribution in cultivation passion as agropreneur. The paper totally focuses on successful young agropreneur who wanted to come out of her ignorance and wanted to achieve in this male chauvanated society. This passion pushed her towards her dream, as agropreneur all raw materials needed are cultivated in her farm, also as a young spirit and being updated she chose the E-tailing mode as distribution channel.

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Investigation of ultrasonic parameters and thermal conductivity of binary liquid mixtures of alcohol with benzene

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ABSTRACT

Ultrasonic speed and its related thermodynamic properties have been extensively used to study physico-chemical behaviour and molecular interactions in a variety of binary liquid systems. In this paper an attempt has been made to study the thermo acoustical properties in binary liquid mixtures of ethanol & isopropyl alcohol with benzene at different temperature over the entire composition range. Ultrasonic velocity was measured experimentally using interferometer at 2MHz frequency, the other parameters like density and viscosity were also measured experimentally for the different temperature range (303K, 308K, 313K, 318K & 323K). Using the measured parameters, adiabatic compressibility (β_a), molar volume (V_m), intermolecular free length (V_f), internal pressure (π_i) have been calculated. Another attempt has been made to compute the activation energy (G), thermal conductivity (k) and other mo-

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Investigation of ultrasonic parameters and thermal conductivity of binary liquid mixtures of alcohol with benzene

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Ultrasonic speed and its related thermodynamic properties have been extensively used to study physico-chemical behaviour and molecular interactions in a variety of binary liquid systems. In this paper an attempt has been made to study the thermo acoustical properties in binary liquid mixtures of ethanol & isopropyl alcohol with benzene at different temperature over the entire composition range. Ultrasonic velocity was measured experimentally using interferometer at 2MHz frequency, the other parameters like density and viscosity were also measured experimentally for the different temperature range (303K, 308K, 313K, 318K & 323K). Using the measured parameters, adiabatic compressibility (β_a), molar volume (V_m), intermolecular free length (V_f), internal pressure (π_i) have been calculated. Another attempt has been made to compute the activation energy (G), thermal conductivity (k) and other mo-

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Research Article

INVESTIGATION ON ELECTRO CATALYTIC REDUCTION OF OXYGEN IN 2-AMINO-3-CHLORO-1, 4-NAPHTHOQUINONE SOLUTION AT POLYANILINE MODIFIED GCE

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ABSTRACT

The oxygen reduction is an important reaction in metal/air batteries, biosensors and fuel cells. The electrocatalyst for oxygen reduction was fabricated by coating poly aniline on glassy carbon electrode (PANI/GCE) with 2-amino-3-chloro-1,4-naphthoquinone (ACNQ) in various buffer solutions of pH 5.0 to 9.0. Cyclic voltammetry, chronoamperometry and chronocoulometric techniques were used to study the electrocatalytic reduction of naphthoquinone as well as oxygen. The stability of the modified electrode was ascertained. The surface morphology of PANI/GCE was examined by atomic force microscopy (AFM). The influence of pH and scan rate on the electrochemical and electrocatalytic-behaviour of the modified electrode was studied and pH 7.0 was chosen as the optimum working pH. The oxygen reduction behaviour of PANI/GCE was compared with that of a bare GCE and the studies reveal that PANI/GCE shows a high electrocatalytic activity towards O_2 reduction with the overpotential 583.7 mV. The reduction process proceeds by a two-electron pathway.

Keywords: Cyclic volammogram, Chronoamperometry, Chronocoulometry, Atomic force microscopy.

1. INTRODUCTION

In fuel cells and sensors, modified electrode plays a vital role. Oxygen reduction is an important reaction in most of the electrochemical devices. A number of modified electrodes were fabricated for electrocatalytic oxygen reduction. The modification was carried out by using poly-iron-tetra amino phthalocyanine [1],titanium silicate [2], Au nanoparticle [3, 4], manganese oxides [5, 6], copper complex [7], μ-oxodecavanadium complex [8], azobenzene [9], copper nanoparticle [10], Nafion film [11], thiopyrimidine [12], naphthoquinone [13-15] and anthraquinone [16-19].Carbon paste electrodes, modified with 1,4-naphthoquinones catalyzed the reduction of dioxygen to hydrogen peroxide by reducing the potentials to about 350-550 mV below that obtained for an unmodified carbon paste electrode [14] at pH 8.0. Among the number of synthetic 1,4-naphthoquinone derivatives, aminonaphthoquinones occupy a special place. According to the results of *in vitro* and *in vivo* studies, they are of less toxicity compared with the other 1,4-naphthoquinones derivatives [20, 21]. Amino derivatives of 1,4-naphthoquinone can be used for the synthesis of a large number of organic compounds with bactericidal, fungicidal [22, 23] and antioxidant properties [24] with low toxicity [21].

Due to the good electrical conductivity of conducting polymers, the modification of electrodes with conducting organic polymers such as polypyrrole [25] and poly (3,4-Ethylenedioxidethiophene) [26] have been carried out to improve the electrodes sensitivity and selectivity. However, in the reduction of oxygen, the combined effect of polyaniline and 1,4-naphthoquinone has not been studied so far.

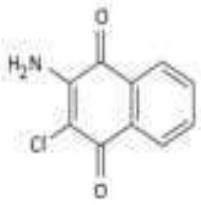

Fig. 1: Structure of 2-amino-3-chloro-1, 4-naphthoquinone

In the present investigation 2-amino-3-chloro-1,4-naphthoquinone (Figure 1) is chosen as electro catalyst. The electrocatalytic nature of this quinone compound was studied at polyaniline modified glassy carbon electrode (PANI/GCE) by cyclic voltammetric, chronoamperometric and chronocoulometric tech-niques. The

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Synthesis, Structural and Morphological Investigations of ZnS_XSe_{1-x} Thin Films By Nebulizer Spray Pyrolysis Technique

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Abstract

In the present work, zinc sulphoselenide was prepared by nebulizer spray pyrolysis technique on glass substrates at varying deposition temperatures.For zinc sulphoselenide thin films the temperature was optimized to be 400°C and the concentrations were varied. $ZnS_{0.25}$ $Se_{0.75}$, $ZnS_{0.5}Se_{0.5}$ and $ZnS_{0.75}Se_{0.25}$ thin films were obtained. All the prepared samples were characterized by X-ray diffraction, Scanning Electron Microscope, Energy Dispersive Spectroscopy and Atomic Force Microscopy in order to understand the structural and morphological behaviour of the prepared samples respectively.

Key Words: XRD, SEM, AFM, EDS, Spray Pyrolysis

1. INTRODUCTION

Ternary systems such as ZnS_xSe_{1-x} are technologically important because the band gap can be tuned between the band gap values of ZnS and ZnSe[1]. This makes a detailed characterization of these materials the subject of such investigation. ZnS_xSe_{1-x} is an example of a II –VI semiconductor pseudo binary alloy that can be made over the entire range of composition[5].In thispaper, the structural and morphological properties of ZnS_xSe_{1-x} has been studied.

2. Materials and Methods

The solution for depositing ZnS_xSe_{1-x} thin films was prepared after the cleaning process. The substrate temperature was maintained to be 400° C and the concentrations of S and Se were varied. The concentrations are shown in table 2.1.

Table.2.1 Concentrations of S and Se

S.No	$ZnCl_2$	Thio Urea	SeO_2
1	0.1M	0.25M	0.05M
2	0.1M	0.2M	0.1M
3	0.1M	0.15M	0.15M

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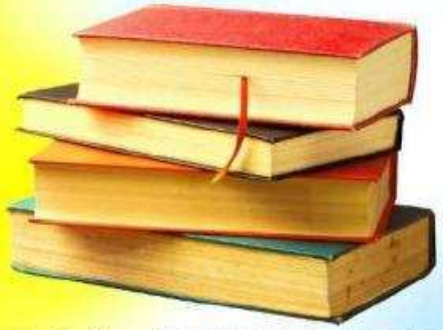

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CONSTRUCTION AND DECONSTRUCTION OF FEMINISM IN TAMIL LITERATURE

தொகுதி - 2, சிறப்பிதழ் 3 : தொகுதி - 1, பிப்ரவரி 2020

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Our Heritage

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Masculine Marginality in Suniti Namjoshi's *The Mothers of Maya Diip*

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Abstract:

Women, especially women of colour had always known to be the subject of marginality. In India, women were marginalized by men but men were in turn marginalized during the colonial era. The same continues even to the present age. Critical Studies on Men and masculinities has burgeoned in recent decades and covers a range of studies that differ from the malestream. CSMM, views 'men' as a social, not an essentialist biological, category, that is gendered, intersectionally. Suniti Namjoshi, an Indian born English writer, having personally being doubly marginalised has created in most of her longer fables, women superior to men. In *The Mothers of Maya Diip*, she has create Maya Nagar an 'all woman world' where womanhood is praised and there is no admission for men. The bitter treatment that men folk receive makes one wonder if such a place exist. The fabulist's contempt towards men is well depicted. The paper will explore the masculine marginality in Suniti Namjoshi's *The Mothers of Maya Diip*.

Key words: Masculine marginality, subaltern, marginalization.

Marginalized Masculinity differs greatly in meaning from social thinkers to writers. R.W.Connell an Australian sociologist, in her book *Masculinities*, discusses marginalized

Original Article

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Development of Marine Fish Production in India: An Analysis

D Amutha

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D Amutha. Development of Marine Fish Production in India: An Analysis. J Soc Welfare Manag. 2020;12(1):9-14.

Abstract

In the Indian economy, fishery sector is one of the most important and contributory sectors. The study examines the trend and growth of trend and growth of marine fish production in India, market-wise exports from India and craft-wise marine fish production in Tamil Nadu. The objectives of the present study are:

1. To find out the contribution of the fisheries sector production in India from 2005 to 2015.

2. To study the marine products market-wise exports from India to different countries during 2000-01 to 2017-18 and

3. To assess the trend and growth of marine fish production in India, market-wise exports from India and craft-wise marine fish production in Tamil Nadu.

In order to analyze the trend and growth of marine fish production in India, market-wise exports from India and craft-wise marine fish production in Tamil Nadu over a period, percentage methods, co-efficient of variations, linear trend and compound growth rate have used. The secondary data collected through the internet, books, newspaper, journals records and brochures from 2005 to 2015. It inferred that production performance of marine fish capture, on an average over a period was found to be higher than the production performance of inland fish capture. The study reveals that the marine fish production in India, market-wise exports from India and craft-wise marine fish production in Tamil Nadu have been increasing at a compounded growth rate of 6.44 percent, 7.43 percent and 3.02 percent respectively. The trend coefficients are positive and significant at 5 percent level indicating a positive movement in the marine fish production in India, market-wise exports from India and craft-wise marine fish production in Tamil Nadu. The trend coefficient for marine fish production in India, market-wise exports from India and craft-wise marine fish production in Tamil Nadu is 0.032, 0.077 and 0.054. The analysis shows that trend

Review Article

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Trend and Growth of Individual Household Latrinesin India

D Amutha

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Abstract

Human dignity and sanitation are related in terms of being able to access a safe, hygienic as well as easy toilet facility. The study examines the trend and growth of availability and type of latrine facility in Indiain 2001 and 2011and growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India.

The objectives of the present study are:

1. To study the need and importance of sanitation and latrine-use.
2. Tofind out theavailability and type of latrine facility in Indiain 2001 and 2011
3. To evaluate the growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India and
4. To assess the trend and growth of availability and type of latrine facility in Indiain 2001 and 2011and growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India.

In order to analyse the trend and growth of availability and type of latrine facility in Indiain 2001 and 2011and growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India, percentage methods, co-efficient of variations, linear trend and compound growth rate have used. The secondary data collected through the internet, books, newspaper, journals records and brochures from 2013-14 to 2016-17.

It is inferredthatthe trend coefficient was found to be statistically significant for availability and type of latrine facility and growth of Individual Household Latrines in India. It indicates, on average, it had increased by 8.1 percent for availability and type of latrine facility and 7.7 percent for Individual Household Latrines per annum. The growth rates are found to be 7.214 percent, and 4.811 percent for availability and type of latrine facility and growth of Individual Household Latrines in India.The value of R2 indicates that the availability and type of latrine facility (0.635), and Individual Household Latrines (0.554) explain variations independent variablesto the extent of 64percent, and 55percent respectively.

Keywords: Economic Development, Hygiene Practices; Improvedsanitation; Latrine Facility; Open Defecation.

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Introduction

Toilets are essential for clean and healthy societies and contribute to the social and economic development of India. Right to use to a toilet is neither the same as its hygiene practices. Improved Sanitation brought multiple economic benefits, which include direct economic benefits of avoiding illness. These indirect economic decrease in work days lost due toillness and a longer life time because these benefit senabled people to work more and non-health benefits such as time.

Methodology

In order to analyse the trend and growth of availability and type of latrine facility in India in 2001 and 2011 and growth of Individual Household Latrines during the period 2013-14 to 2016-17 in India, percentage methods, co-efficient of variations, linear trend and compound growth rate have used. The secondary data collected through the internet, books, newspaper, journals records and brochures from 2013-14 to 2016-17.

Need and Importance of Sanitationandlatrine-Use

The seventh Millennium Development Goals (MDG) focuses on environmental sustainability, and one of its three targets is to decrease by half, the number of people without sustainable drinking water, latrines and basic sanitation. On the other hand, WHO's burden of disease analysis shows that reduced

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EFFECTS OF PUBLIC TOILETS ON PUBLIC HEALTH IN THOOTHUKUDI DISTRICT

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Abstract

The public toilet is a vital part of our life since we not always at home and we will use it. It is indispensable, we use it all the time and it is appropriate for each person. Hence the present study focuses on the attitude of public toilet users migrated from different places and health problems of using a public toilet in Thoothukudi District.

The followings are the key objectives of the present study.

1. To study the socio-economic profile of public toilet users.
2. To examine the attitude of public toilet users migrated from different places and cleanliness and hygiene maintenance of public toilets and
3. To analyse the health problems of using a public toilet in Thoothukudi District.

The research-based on both primary data and secondary data. The researcher has selected the method of the simple random sampling method. The period of the research study is one year, starting from May 2019. The analysis of the data included averages, standard deviation, Garret ranking method, chi-square test and probability analysis tools used. It has been observed that, 121 (5.63 percent) of the respondent's professional background as a professional, 266 (12.37 percent) of the respondents having business 128 (5.95) percent respondents as Government employee background. 149 (6.93 percent) of the respondents have a background of unemployed, and 414 (19.26 percent) of the respondents have a background of farmers. Also, 131 (6.09 percent) of the respondents have a background of private employee, 194 (9.02 percent),288 (13.40 percent), 294 (13.67 percent) and 165 (7.68

The Role and Impact of ICT in Improving the Quality of Education

6 Pages • Posted: 22 May 2020

D. Amutha
St.Mary's College, Tuticorin

Date Written: April 26, 2020

Abstract

ICTs are making dynamic changes in society. They are influencing all aspects of life. Similarly, there is no doubt that ICT brings a massive change in the field of education also. It makes teaching- learning process effective and interesting. To know the impact of ICT in education we need to know two basic things. ICT and education. The ICT is an umbrella that includes any communication device or application, encompassing, radio, television, cellular phones, computer, and network hardware and software, satellite system and so on, as well as the various services and applications associated with them, such as video conferencing and distance learning. Such technologies are used for educational purposes, namely to support and improve the learning of student and develop learning environments. ICT can be considered as a sub field of educational technology. The paper discusses the role and effect of ICTs, and how they can promote future growth and development. In educational system, the inputs are teachers, students, classroom materials, equipment of teaching, methods of teaching and the outputs are quantity as well as quality of student learning. The proper integration of ICT with teaching/ learning environment increases the chance of gaining education along with increased productivity. Information communication technologies are influencing all aspects of life including education. They are promoting changes in working conditions, handling and exchanging of information, teaching-learning approaches and so on. One area in which the impacts of ICT is significant, is education. ICTs are making major differences in the teaching approaches and the ways students are learning. ICT-enhanced learning environment facilitates active, collaborative, creative, integrative, and evaluative learning as an advantage over the traditional method. In addition, the major promises of ICTs use in education systems of developing countries focus on training teachers in new skills and introducing innovative pedagogies into the classrooms, investing on ICT infrastructure for schools and creating networks among educational institutes, improving overall standard of education by reducing the gap in quality of education between schools in urban and rural areas, initiation of smart school with objectives to foster self-paced, self-assessed, and self-directed learning through the applications of ICTs, and developing ICT policy for education and training.

Keywords: Communication, Technology, Collaborative, Evaluative Learning, Innovative Pedagogies

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COVID-19 Epidemic and Its Impact on Economy and Society

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Date Written: November 26, 2020

Abstract

The COVID-19 epidemic has had a huge impact on nations particularly the nationwide lockdowns that have brought social and economic life to a standstill. An environment that has once buzzed with events has fallen silent and all the resources have been redirected to face the unprecedented crisis. Although lockdown and social distancing lead, on the one hand, to a loss of competitiveness, they lead, on the other hand, to a dramatic drop in consumer demand for products and services in the economy, leading to a fall in economic activity. However, the only cost effective methods available for preventing the spread of COVID-19 are lockdown and social distancing. This research therefore aimed to examine the influence of COVID-19 on the life of the person as a whole.

The key objectives of the research are as follows:
1. To study the impact on the economy of the COVID-19 epidemic
2. Identifying the effects on fishermen and migratory labour of the COVID-19 epidemic
3. To highlight the epidemic of COVID-19 and its influence society and family life
4. To evaluate the effect of epidemic preparations and preventive measures for COVID-19 in India.

This research is focused on secondary information obtained from multiple sources such as journal articles, magazines, the internet, newspapers, books and studies published and unpublished by different governmental bodies, non-governmental organizations and the Commission.

The Corona virus pandemic severely affects the lives of individuals as a whole. The serious effects of this condition are directly or indirectly faced by everyone in the world. Unprecedented lockdowns and emergencies have been declared by many nations. The government shuts down schools, colleges, universities, the market for pubs, the mall, the shopping centre, etc.

In developed and emerging societies, an atmosphere of fear, anxiety and stress has been established. This disorder, however, causes many other problems due to its intense isolation and lockdown style, including social anxiety, panic states due to instability, economic recessions and extreme mental stress. Coordinated measures are needed to contain this virus, and individuals need to make uncomfortable but important adjustments to their everyday routine in compliance with the government and WHO's advice and suggestions. This would provide medical personnel with more opportunities to intervene effectively with the

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Growth of Non-Performing Assets on the Profitability of Banks in India

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Abstract

One of the big problems for banks in India is non-performing assets. NPAs reflect banks' results. From 2006-07 to 2019-20, the current paper explores the pattern and growth of the net profit of all banks and gross non-performing assets in India.

The study has the following objectives

1. To analyse the growth of net profit of all the banks in Indiasince 2006-07 to 2019-20.
2. To identify the Gross Non-performing asset (NPA) and profitability of banks and
3. To examine thetrend and growth of net profit of all the banks and gross non-performing assets in Indiasince 2006-07 to 2019-20.

It is mainly concerned with tapping specific secondary data collection sources. It gathers secondary data from academic papers, dissertations of academics, reference books, standard publications and records of institutes and organisations, journals, newspapers, internet, etc. Statistical instruments such as percentage techniques, linear pattern and compound growth rate have been used.

It is found that the trend coefficient was found to be statistically significant for net profit of all the banks and Gross Non-performing assetin India. It indicates, on average, it had increased by 6.7 percent for net profit of all the banks and 4.1 percent for Gross Non-performing assetper annum. The growth rates are found to be 7.384 percent, and 4.957 percent for net profit of all the banks and Gross Non-performing assetin India.The value of R2 indicates that the net profit of all the banks (0.613), and Gross Non performing asset (0.571) explain variations independent variables to the extent of 61 percent, and 57 percent respectively. Therefore, the banking sector should now primarily concentrate on the efficient management of NPAs in order to improve their profitability and thereby provide the industry with as much funding as possible.

Keywords: Economic growth; Financial institutions; Allocation of resources; Net profit; Non-performing assets.

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Introduction

The main goal of each country is to achieve stable economic growth that revolves around the financial stability of the economy. Banking and financial institutions play a key role in the growth of the economy, especially in resource mobilisation and allocation. The primary word for banking companies is nonperforming assets. Non-Performing Assets reflect the efficacy of the banks' results.

In order to enhance their lending conduct, the commercial bank should aim to build more deposits in others and should implement the most easily realisable policies and effective credit management in all circumstances (Olusanya, et al 2012).[1] Banks in

Edge Detour Global Domination Number of a Graph

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Abstract:

In this paper, we introduce a new domination parameter, called edge detour global domination number of a graph. A subset S of $V(G)$ is called an edge detour global dominating set if S is a detour global dominating set and every edge of G is contained in a detour joining some pair of vertices of S. The minimum cardinality taken over all edge detour global dominating sets is called the edge detour global domination number of G and is denoted by γ_{edg}(G). An edge detour global dominating set of cardinality γ_{edg} (G) is called a γ_{edg}- set of G. We determine γ_{edg}(G) for some standard and special graphs and study some general properties for $\gamma_{edg}(G)$

Key Words: Detour global dominating set. edge detour set, edge detour global dominating set

AMS Subject Classification: 05C78

1. INTRODUCTION

By a graph G = (V, E), we consider a finite undirected connected graph without loops or multiple edges. The order and size of G are denoted by n, m respectively. The concept of Detour Global Dominating graphs was introduced in [10]. For underlying definition and results, see references.

1.1 Theorem: Each end vertex of a connected graph G belongs to every detour global dominating set of G.

1.2 Theorem: If G is a connected graph of order n ≥ 2, then $2 \leq max\ \{\gamma(G), dn(G)\} \leq \gamma_d(G) \leq n$.

1.3 Theorem: For the path graph $G = P_n$ of n vertices, $\gamma_{dg}(G) = \left\lceil \frac{n+2}{3} \right\rceil$, $n \geq 4$.

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Connected edge Detour global domination number of a graph

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Abstract

In this paper, we introduce the concept of connected edge detour global domination number of a graph is introduced. A subset D of the vertex set $V(G)$ of a connected graph G is called a connected edge detour global dominating set if D is an edge detour global dominating set and the induced subgraph $< D >$ is connected. The connected edge detour global domination number $\gamma_{cedg}(G)$ of G is the minimum cardinality taken over all connected edge detour global dominating sets in G. A connected edge detour global dominating set of cardinality $\gamma_{cedg}(G)$ is called a γ_{cedg}-set of G. We determine $\gamma_{cedg}(G)$ for some standard and special graphs and its properties are studied.

Keywords

Edge detour global domination number, connected edge detour global domination number.

AMS Subject Classification

05C12.

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Contents

1. Introduction

By a graph $G = (V,E)$, we consider a finite undirected connected graph without loops or multiple edges. The order and size of G are denoted by n, m respectively. Edge Detour Global Dominating graphs were introduced and studied by Punitha Tharani and Ferdina [12]. For underlying definition and results, see references [1-14].

Theorem 1.1. *For any connected graph of order $n \geq 2$. Then, $2 \leq dn(G) \leq \gamma_{dg}(G) \leq n$.*

Theorem 1.2. *Let G be a graph of order n. Then $\gamma_{dg}(G) = n$ iff G contains only end and full vertices.*

Theorem 1.3. *For the path graph P_n, $\gamma_{edg}(P_n) = \lceil \frac{n-4}{3} \rceil + 2, n \geq 5$*

Theorem 1.4. *For the complete graph K_n, $\gamma_{edg}(K_n) = n, n \geq 2$*

2. Connected Edge Detour Global Domination Number of a Graph

Definition 2.1. *A subset D of* V *of a connected graph $G = (V,E)$ is called a connected edge detour global dominating set of G if* D *is an edge detour global dominating set and the induced subgraph $< D >$ is connected. The Connected edge detour global domination number $\gamma_{\text{ced}g}(G)$ of* G *is the minimum cardinality taken over all connected edge detour global dominating sets in G. A connected edge detour global dominating set of cardinality $\gamma_{cedg}(G)$ is called a γ_{cedg}-set of G.*

Example 2.2. *Consider the graph G given in Figure 1.*

Here, $D_1 = \{v_1, v_4, v_6\}$, $D_2 = \{v_1, v_4, v_5\}$, $D_3 = \{v_1, v_3, v_5\}$ are γ_{edg}-sets of G *and so $\gamma_{edg}(G) = 3$. Now $D_5 = \{v_1, v_2, v_3, v_4\}$, $D_6 = \{v_1, v_2, v_3, v_6\}$, $D_7 = \{v_1, v_2, v_5, v_6\}$ are γ_{cedg}-set of G. Then $\gamma_{cedg}(G) = |D_5| = |D_6| = |D_7| = 4$.*

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On $g^*\beta$ -compactness and $g^*\beta$ -connectedness in topological spaces

A. Punitha Tharani[1] and H. Sujitha[2*]

Abstract

We introduce the concept of $g^*\beta-$compact and $g^*\beta-$ connected spaces in topological spaces and investigate their basic properties and are obtained using $g^*\beta$ -closed sets.

Keywords

$g^*\beta$ -closed set, $g^*\beta$ -connected space, $g^*\beta$-separated, $g^*\beta$ -compact space.

AMS Subject Classification

54B10, 54C10, 54D05, 54D30.

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Contents

1. Introduction

Topological spaces are mathematical structures that allow the formal definitions of concepts such as connectedness, compactness, interior and closure. Compactness is one of the most important, useful and fundamental concepts in topology. Compactness is the generalization to topological spaces of the property of closed and bounded subsets of the real line. In 1970 , Levine [4] introduced the notion of generalized closed (briefly g-closed) sets in topological spaces. In 1981 , Dorsett [2] introduced and studied the concept of Semi compact spaces. Punitha Tharani. A and Sujitha. H [8] introduced the concept of $g^*\beta$-closed sets in topological spaces.

In this paper, we introduce the concept of $g^*\beta$ compactness and $g^*\beta$ -connectedness in topological spaces and also discuss some of their properties. For the concept of compact space and connected space, we refer [1,7,9].

2. $g^*\beta$- Compactness

Definition 2.1. *A subset $\mathscr{H}$ of a topological space X is $g^*\beta$ - compact relative to X if for every collection $\{S_i : i \in \Omega\}$ of $g^*\beta$ -open susbsets of X such that $\mathscr{H} \subseteq \cup_{i\in\Omega} S_i$ there exists a finite subset Ω_0 of Ω such that $\mathscr{H} \subseteq \cup_{i\in\Omega_0} S_i$ If $\mathscr{H} = X$ and if $\mathscr{H}$ is $g^*\beta$ - compact relative to X then X is $g^*\beta$ - compact.*

Definition 2.2. *A subset $\mathscr{H}$ of a topological space X is said to be $g^*\beta$ -compact if $\mathscr{H}$ is $g^*\beta$ - compact as a subspaces of X.*

Theorem 2.3. *A $g^*\beta$ -closed subset $\mathscr{H}$ of as $g^*\beta$ compact space X is $g^*\beta$ - compact relative to X.*

Proof. Let $\mathscr{H}$ be a $g^*\beta$ -closed subset of a $g^*\beta$ - compact space X. Then $X\backslash S$ is $g^*\beta$ -open. Let ξ be a cover for $\mathscr{H}$ by $g^*\beta$ -open subsets of X. Since X is $g^*\beta$ - compact it has finite subcover say $\{\mathscr{T}_1, \mathscr{T}_2, \mathscr{T}_3 \ldots\ldots, \mathscr{T}_n\}$. Then $\{\mathscr{J}_1, \mathscr{T}_2, \mathscr{T}_3 \ldots, \mathscr{T}_n\} \cup \{X\backslash\mathscr{H}\}$ is a finite subcover of ξ for $\mathscr{H}$. Thus $\mathscr{H}$ is $g^*\beta$ - compact relative to X. □

Theorem 2.4. *Let (X,τ) and (Y,σ) be topological spaces and $f : (X,\tau) \to (Y,\sigma)$ be a function. Then*

a) f is $g^*\beta$ -irresolute and S is $g^*\beta$ -compact subset of $X \Rightarrow$ $f(A)$ is $g^*\beta$ -compact subset of Y.

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SOFT $g^*\beta$ CLOSED SETS IN SOFT TOPOLOGICAL SPACES

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Abstract

We introduce a new class of soft generalized star β-closed sets (briefly soft $g^*\beta$-closed set), soft $g^*\beta$- open set in soft topological spaces (from now on STS). We have studied the relationship between this type of closed sets and other existing closed sets in STS and some of their basic properties.

Keyword : Soft closed, Soft generalized closed, Soft $g^*\beta$-closed set, Soft $g^*\beta$-open set, Soft topological spaces.

I. Introduction

The soft set theory is a rapidly processing field of Mathematics. This new set theory has found its applications in Game Theory, Operations Research, Theory of Probability, Riemann Integration, Perron Integration, Smoothness of functions, etc. In 1999, the concept of soft set theory was initiated by Molodtsov [V] as a general mathematical tool for dealing uncertain fuzzy, not clearly defined objects which contains sufficient parameters such that it is free from the corresponding difficulties. In 2010 Muhammad Shabir and Munazza Naz [VI] introduced soft topological spaces and the notions of soft open sets, soft closed sets, soft closure, soft interior points, soft neighbourhood of a point and soft separation axioms and also defined the theory of soft topological space over an initial universe with a fixed set of parameters. The concept of generalized closed sets was introduced by N. Levine [IV]. Punitha Tharani. A and Sujitha. H [VII] introduced the concept of $g^*\beta$-closed sets in

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THE CONCEPT OF g*β – CLOSED SETS IN TOPOLOGICAL SPACES

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ABSTRACT

The aim of this paper is to introduce and study new class of sets called $g^*\beta$ – closed sets. This new class of sets lies between closed sets and βg-closed sets. Applying these sets, new spaces namely, ${}_\beta T^{**}{}_{1/2}$-space, ${}_{\alpha\beta}T^*{}_c$ – space, ${}_\beta{}^*T^*{}_{1/2}$ – space, ${}_\beta{}^{**}T_{1/2}$ – space, ${}_\beta T^*{}_c$ – spaces are introduced.

***Key words**: $g^*\beta$ – irresolute map, ${}_\beta T^{**}{}_{1/2}$-space, ${}_{\alpha\beta}T^*{}_c$ – space.*

INTRODUCTION

The Kutatowiski closure axioms or axioms for the closed sets are used to define every topological spaces. Hence we can understand how the important the concept of closed sets in the topological Spaces. In 1970, Levine [11] initiated the study of g – closed sets. Maki. *et.al* [14] defined αg – closed sets and α**g – closed sets in 1994. S.P. Arya and T. Nour [3] defined gs – closed sets in 1990. Dontchev [9], Gnanambal [10] and Palaniappan and Rao [19] introduced gsp – closed sets, gpr – closed sets, and rg- closed sets respectively. M.K.R.S. Veerakumar [20] introduced g* - closed sets in 1991. P.M. Helen [22] introduced g** - closed sets. We introduce a new class of sets called g*β-closed sets which is properly placed in between the class of closed sets and the class of βg- closed sets. Levine [11] Devi. *et.al* [6,8] introduced $T_{1/2}$- spaces, T_b- spaces and ${}_\alpha T_b$ spaces respectively. The purpose of this paper is to introduce the concepts of, ${}_\beta T^{**}{}_{1/2}$-space, ${}_{\alpha\beta}T^*{}_c$ – space, ${}_\beta{}^*T^*{}_{1/2}$ – space are introduced and investigated.

PRELIMINARIES

Throughout this paper (X, τ), (Y, σ) and (Z, η) represent non-empty topological spaces of which no separation axioms are assumed unless otherwise mentioned. For a subset A of a space (X, τ), cl(A) and int(A) denote the closure and the interior of A respectively. The class of all closed subsets of a space (X, τ) is denoted by C(X, τ). The smallest semi closed (resp. pre-closed and α-closed) set containing a subset of a space (X, τ) is called the semi-closure (resp. pre-closure and α-closure) of A is denoted by scl (A)(resp. pcl (A) and αcl (A)).

Definition 2.1: A subset A of a topological space (X, τ) is called

1) a pre-open set [16] if $A \subseteq$ int(cl(A))and a preclosed set if cl(int(A)) ⊆ A.
2) a semi-open set [12] if $A \subseteq$cl(int(A))and semi-closed set if int(cl(A)) ⊆ A.
3) a semi-preopen set [1] if $A \subseteq$cl(int(cl(A)))and a semi preclosed set [1] if int(cl(int(A))) ⊆ A.
4) an α-open set [18] if $A \subseteq$int(cl(int(A))) and an α-closed set [18] if cl(int(cl(A))) ⊆ A.
5) a regular-open set [16] if int(cl(A))=A and regular-closed set [16]if A=int(cl(A)).

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A New Class of Nano Generalized Star Beta Closed Sets in Nano Topological Spaces

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Abstract--- We define a new class of sets called $\mathcal{N}g^*\beta$-closed setsand $\mathcal{N}g^*\beta$- open sets in NTS(Nano Topological Spaces) in this paper. We introduce new notations$\mathcal{N}g^*\beta$-interior, $\mathcal{N}g^*\beta$-closure and $\mathcal{N}g^*\beta$- continuous in NTS. We study the relationship of $\mathcal{N}g^*\beta$-closed and $\mathcal{N}g^*\beta$-open sets with other sets in NTS.

Mathematics Subject Classification (2010):*54A04, 54B05.*

Keywords--- $\mathcal{N}g^*\beta$-closed sets, $\mathcal{N}g^*\beta$- open sets, $\mathcal{N}g^*\beta$-interior, $\mathcal{N}g^*\beta$-closure, $\mathcal{N}g^*\beta$-Continuous.

I. Introduction

The notion of g-closed sets was introduced by Levine [1] in 1970. Lellis Thivagar [2,3] introduced NTS with reference to a subset $\mathcal{U}$ of a universe which is defined in terms of lower and upper approximation of $\mathcal{U}$ and the concept of $\mathcal{N}$ -continuity in NTS.Sujitha.H [5] introduced the concept of $g^*\beta$-closed sets in T.S.The purpose of this paper is to introduce the nano$g^*\beta$-closed sets(briefly, $\mathcal{N}g^*\beta$-closed sets), $\mathcal{N}g^*\beta$- open sets, $\mathcal{N}g^*\beta$-closure, $\mathcal{N}g^*\beta$-interior and $\mathcal{N}g^*\beta$- continuous functions in NTS. Also we study some of their basic properties.

Throughout this paper $(\mathcal{U}, \tau_{\mathcal{R}}(\mathcal{H}))$(or simply $\mathcal{U}$) represents NTS where no separation axioms are assumed unless otherwise stated. Let $\mathcal{H} \subseteq \mathcal{U}$. For a subset $\mathcal{S}$ in NTS$(\mathcal{U}, \tau_{\mathcal{R}}(\mathcal{H}))$, $\mathcal{N}cl(\mathcal{S})$ and $\mathcal{N}int((\mathcal{S}))$ denote a nano closure of $\mathcal{S}$ and nano interior of $\mathcal{S}$.For the concepts of NTS we refer [2,3,4].

II. $\mathcal{N}g^*\beta$-closed and $\mathcal{N}g^*\beta$-open Sets

Definition: 2.1A subset $\mathcal{S}$ of a NTS $(\mathcal{U}, \tau_{\mathcal{R}}(\mathcal{H}))$ is known as "nano generalized star β- closed"(briefly, $\mathcal{N}g^*\beta$-closed), if $\mathcal{N}\beta cl(\mathcal{S}) \subseteq \mathcal{D}$, whenever $\mathcal{S} \subseteq \mathcal{D}$ and $\mathcal{D}$ is $\mathcal{N}g^*$- open in $\mathcal{D}$.

Definition: 2.2A subset $\mathcal{S}$of a N.T.S $(\mathcal{U}, \tau_{\mathcal{R}}(\mathcal{H}))$ is called $\mathcal{N}g^*\beta$- open, if $\mathcal{S}^c$is $\mathcal{N}g^*\beta$- closed.

Proposition: 2.3 Every$\mathcal{N}$-closed set is $\mathcal{N}g^*\beta$- closed set.

Proof: Let $(\mathcal{U}, \tau_{\mathcal{R}}(\mathcal{H}))$ be a N.T.S and let$\mathcal{S} \subseteq \mathcal{D}$ and $\mathcal{H}$ be a $\mathcal{N}$-open set $\tau_{\mathcal{R}}(\mathcal{H})$.

Since$\mathcal{S}$is $\mathcal{N}$-closed set and $\mathcal{N}\beta cl(\mathcal{S}) \subseteq \mathcal{N}cl(\mathcal{S})$. Also $\mathcal{N}cl(\mathcal{S}) = \mathcal{S}$. So $\mathcal{N}\beta cl(\mathcal{S}) \subseteq \mathcal{N}cl(\mathcal{S}) = \mathcal{S} \subseteq \mathcal{D}$.

Which implies $\mathcal{N}\beta cl(\mathcal{S}) \subseteq \mathcal{D}$.

Therefore, $\mathcal{S}$ is $\mathcal{N}g^*\beta$- closed set.

Proposition: 2.4 Every$\mathcal{N}g$-closed set is $\mathcal{N}g^*\beta$- closed set.

Proof: Let $(\mathcal{U}, \tau_{\mathcal{R}}(\mathcal{H}))$ be a NTS andlet $\mathcal{S}$ be a $\mathcal{N}g$-closed set $\mathcal{U}$.

Let $\mathcal{D}$ be a $\mathcal{N}$-open set such that $\mathcal{S} \subseteq \mathcal{D}$.

$\Rightarrow \mathcal{N}cl(\mathcal{S}) \subseteq \mathcal{D}$.Considering every $\mathcal{N}$-open set is $\mathcal{N}g^*$-open set. Thus $\mathcal{S}$ is $\mathcal{N}g^*\beta$- closed set.

Hence $\mathcal{N}\beta cl(\mathcal{S}) \subseteq \mathcal{N}cl(\mathcal{S}) = \mathcal{S} \subseteq \mathcal{M} \Rightarrow \mathcal{N}\beta cl(\mathcal{S}) \subseteq \mathcal{D}$. Therefore, $\mathcal{S}$ is $\mathcal{N}g^*\beta$- closed set.

Proposition: 2.5 Every $\mathcal{N}g^*$- closed set is $\mathcal{N}g^*\beta$- closed set.

Proof: Let $(\mathcal{U}, \tau_{\mathcal{R}}(\mathcal{H}))$ be a NTS and let $\mathcal{S}$ be a $\mathcal{N}g^*$- closed, then $\mathcal{N}cl(\mathcal{S}) \subseteq \mathcal{D}$, whenever $\mathcal{S} \subseteq \mathcal{D}$ and $\mathcal{D}$ be a $\mathcal{N}g$-open set in $\tau_{\mathcal{R}}(\mathcal{H})$.

Since $\mathcal{N}\beta cl(\mathcal{S}) \subseteq \mathcal{N}cl(\mathcal{S})$ and every $\mathcal{N}g$- open is $\mathcal{N}g^*$- open set. Also since $\mathcal{N}\beta cl(\mathcal{S}) \subseteq \mathcal{N}cl(\mathcal{S}) \subseteq \mathcal{D}$. So $\mathcal{N}\beta cl(\mathcal{S}) \subseteq \mathcal{D}$. Thus $\mathcal{S}$ is $\mathcal{N}g^*\beta$- closed set.

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SOME TYPES OF IDEALS IN SYMMETRIC RINGS

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ABSTRACT. In Ring theory, a branch of abstract algebra, an ideal is a special subset of a ring. Ring theory is an extension of Group theory. Ideals generalize certain subsets of the integers, such as the even number or the multiple of 3. The concept of an order ideal in order theory is derived from the notion of ideal in ring theory. Ideals were introduced by Marshall H. Stone, who derived their name from the ring ideals of Abstract algebra. Ideals were proposed by Richard Dedekind in 1876 in the third edition of his book Vorlesungen Uber Zahlentheore (English: Lecturers on Number Theory). They were a generalization of the concept of ideal numbers developed by Ernt Kummer. Later the concept was expanded by David Hilbert and especially Emmy Noether. In this paper we would like to introduce a new type of ideals in symmetric ring that is in two cases of S_2^* ring, S_3^* ring and we define two type of ideals in S_2^* ring, S_3^* ring. We give some properties of symmetric ideals and symmetric group and we introduce a new concept of reverse composition and plus circle compo.

1. INTRODUCTION

In algebra, which is a broad division of mathematics, Abstract algebra is a study of algebraic structures. Algebraic structures include groups, rings, fields, modules, vector spaces, lattices and algebras. The term abstract algebra was coined in the early 20^{th} century to distinguish this area of study from the other

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Key words and phrases. symmetric group, symmetric rings, (S_2^*, S_3^* ring) symmetric ideals, reverse composition function.

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Introduction to Symmetric Semigroups and Symmetric Semirings

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Abstract

The new concepts introduced in this paper are symmetric semigroups and symmetric semirings. Some results based on the above concepts are studied here and also we define composite regular and reverse composite regular in symmetric group.

Keywords: *Symmetric group, Symmetric Ring, Symmetric Semigroup, Symmetric Semiring, Composite regular , Reverse composite regular,Composition, Reverse Composition, Plus Circle Compo.*

I. Introduction:

Abstract Algebra is a study of algebraic structures. Algebraic structures include groups, rings, fields, modules, vector spaces, lattices and algebras. The term abstract algebra was coined in the early 20th century to distinguish this area of study from the other parts of algebra. Permutations were studied by Joseph-Louis Lagrange in 1770 in his paper Refexions sur la resolutions algebriquedes equations devoted to solutions of algebraic equations in which he introduced Lagrange reselvents. Paolo Ruffini was the first person to develop the theory of permutation groups. The next step was taken by Evarsite Galois in 1832 although his work remained unpublished until 1846, when he considered for the first time what is now called the closure property of a group of permutations. Permutation groups are central to the study of geometric symmetries and to Galois Theory, the study of finding solutions of polynomial equations. Symmetric groups on infinite sets behave quite differently from symmetric groups on finite sets , and are discussed in Scott 1987 , Dixon &Mortimer 1996 and Cameron 1999.The representation theory of semigroups was developed in 1963 by Boris Schelin Using binary relations on a set A and composition of relations for the semigroup product. At an algebraic conference in 1972 Schelin surveyed the literature on B_A, the semigroup of relation on A. In 1997 Schelin and Ralph Mckenzie proved that every semigroup is isomorphic to a transitive semigroup of binary relations. In recent years researchers in the field have become more specialized with dedicated monographs appearing on important classes of semigroups, like inverse semigroups, as well as monographs focusing on applications in algebraic automata theory, and also in functional analysis. In abstract algebra, a semiring is an algebraic structure similar to a ring, but each element must have an additive inverse .

2.Preliminaries:

Definition 2.1:

Let A be a non empty set. A binary operation $\star$ on A is a function $\star : A \times A \rightarrow A$.The image of an ordered pair $(a , b) \in A \times A$ under $\star$ is denoted by $a \star b$. A set A with a binary operation $\star$ defined on it is denoted by $(A , \star)$.In simple ,A binary operation is a "way of putting two things together".

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Detour Global Domination Number of Some Standard And Special Graphs

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Abstract

In this paper, we introduce a new domination parameter, called detour global domination number of a graph. A subset S of V of a connected graph G= $(\boldsymbol{V}, \boldsymbol{E})$ is a detour global dominating set if S is both detour set and global dominating set of G. The minimum cardinality taken over all detour global dominating sets is called the detour global domination number of G and is denoted by $\boldsymbol{\gamma_{dg}}$(G). A detour global dominating set of cardinality $\boldsymbol{\gamma_{dg}}$ (G) is called a $\boldsymbol{\gamma_{dg}}$- set of G. We determine $\boldsymbol{\gamma_{dg}}$(G) for some standard and special graphs and study some general properties for $\boldsymbol{\gamma_{dg}}(\boldsymbol{G})$

Keywords: *Detour set, dominating set, detour dominating set, global dominating set, detour global dominating set.*
Mathematical subject classification 05C12, 05C75

1. INTRODUCTION

By a graph G, we mean a finite undirected connected graph without loops or multiple edges. Unless and otherwise stated, the graph G = (V, E) has n = $|V|$ vertices and m = $|E|$ edges. For basic definitions and terminologies, we refer [1,5]. For vertices u and v in a graph G, the detour distance D (u, v) is the length of a longest u – v path in G. A u – v path of length D (u, v) is called a u – v detour. The closed detour interval ID $[u, v]$ consists of u, v and all vertices in some u – v detour of G. These concepts were studied by Chartrand et al. [2,3] For S $\subseteq V(G)$, ID $[S] = \bigcup_{u,v \in S}$ ID $[u, v]$. A subset S of V of a graph G is called a detour set if ID $[S] = V(G)$.The detour number dn(G) of G is the minimum cardinality taken over all detour sets in G. These concepts were studied by Chartrand [4].

The concepts of domination number and global domination number of a graph were introduced in [7,10]. A subset S of V of a graph G= (V, E) is called a dominating set of G if every vertex in V – S is adjacent to at least one vertex in S. The domination number $\gamma(G)$ of G is the minimum cardinality taken over all dominating sets in G.A subset S of V of a graph G= (V, E) is a detour dominating set of if S is both detour set and dominating set of G. The detour domination number $\gamma_d(G)$ is the minimum cardinality taken over all detour dominating sets in G.

A subset S of V of a graph G= (V, E) is called a global dominating set (g .d. set) if it is a dominating set of a graph G and its complement $\bar{G}$ of G. The global domination number γ_g(G) of G is the minimum cardinality taken over all global dominating sets in G.

Theorem 1.1: Every end vertex of a connected graph G belongs to every detour set of G.

Theorem 1.2: If G is a connected graph of order n ≥ 2, then 2≤ $max\ \{\gamma(G), dn(G)\} \leq\ \gamma_d(G) \leq$ n.

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Equitable Triple Connected Two Domination Number of a Graph

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Abstract
The concept of triple connected graphs with real life application was introduced by considering the existence of a path containing any three vertices of a graph G. In this paper we introduce a new domination parameter called equitable triple connected two domination number of a graph. A two dominating set S S of V of a non-trivial graph G is said to be an equitable triple connected two domination set if <S> is triple connected and for every u ϵ V – S there exists a v ϵ S such that uv is an edge of G and $|d(u) - d(v)| \leq 1$. *The minimum cardinality taken over all equitable triple connected two dominating sets is called the equitable triple connected two domination number and is denoted by* γ_{etc2d} *(G). We find the upper and lower bounds and investigate this number for some standard graphs. We also investigate its relationship with other graph theoretical parameters.*

Keywords: *Triple connected graphs, Equitable triple connected two domination number of a graph.*
Subject Classification: 05C69.

1. Introduction

The concept of triple connected graphs with real life application was introduced by considering the existence of a path containing any three vertices of a graph G. In this paper we introduce a new domination parameter called equitable triple connected two domination number of a graph. All graphs considered here are finite, undirected without loops and multiple edges. Unless and otherwise stated the graph G = (V, E) considered here have p = $|V|$ vertices and q = $|E|$ edges.

A subset *S* of *V* of a non - trivial graph *G* is called a *dominating set* of *G* if every vertex in *V* – *S* is adjacent to at least one vertex in *S*. The *domination number γ(G)* of *G* is the minimum cardinality taken over all dominating sets in *G*. A subset S of V of a non - trivial graph is said to be a triple connected dominating set, if S is a dominating set and the induced subgraph <S> is triple connected. The minimum cardinality taken over all triple connected dominating sets is called the triple connected domination number and is denoted by γ_{tc} (G). A subset *S* of *V* of a non - trivial graph *G* is said to be two dominating set if every vertex in V – S is adjacent to atleast two vertices in S. The minimum cardinality taken over all two dominating sets is called the two domination number and is denoted by γ_2 (G). A two dominating set S of a non-trivial graph G is said to be an equitable triple connected two dominating set if <S> is triple connected and for every u ϵ V – S there exists a v ϵ S such that uv is an edge of G and $|d(u) - d(v)| \leq 1$. The minimum cardinality taken over all equitable triple connected two dominating sets is called the equitable triple connected two domination number and is denoted by γ_{etc2d} (G).

Theorem 1.1:

A tree is triple connected if and only if T ≅ P_p, p ≥ 3

Theorem 1.2:

For any graph G, $\left\lceil \frac{p}{\Delta + 1} \right\rceil \leq \gamma$ (G)

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VERTEX MAGIC LABELING ON V_4 FOR SOME CYCLE RELATED GRAPHS

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ABSTRACT. Let V_4 be an abelian group under multiplication. Let $g : E(G) \to V_4 - \{1\}$. The vertex magic labeling on V_4 is defined as the vertex labeling $g^* : V(G) \to V_4$ such that $g^*(v) = \prod_u g(uv)$, where the product is taken over all edges uv of G incident at v is a constant . A graph is said to be V_4-magic if it admits a vertex magic labeling on V_4. In this paper we prove that Rafflesia graph , Cycle Flower graph and $S^{'}(C_n)$ graphs are V_4-magic graphs.

1. INTRODUCTION

In 1963, Sedlack introduced Magic labelings. Later Kong, Lee and Sun used the term magic labeling for edge labeling with non negative integers such that for each vertex, the sum of the labels of all edges incident at any vertex v is the same for all the vertices. For a non trivial Abelian group V_4 under multiplication a graph G is said to be V_4-magic graph if there exists a labeling g of the edges of G with non zero elements of V_4 such that the vertex labeling g^* defined as $g^*(v) = \prod_u g(uv)$ taken over all edges uv incident at v is a constant.

Let $V_4 = \{i, -i, -1, 1\}$ we prove that Rafflesia graph, Cycle flower graph and splitting graph are V_4-magic graphs. For further references see [1,2].

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2010 *Mathematics Subject Classification.* 05C78.

Key words and phrases. Vertex magic labeling on V_4, V_4-magic graphs, Rafflesia Graph.

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Bloom torus: A potential fixed interconnection architecture

S. Kulandai Therese[1]*, D. Antony Xavier[2] and Andrew Arokiaraj[2]

Abstract

The architecture Bloom torus as an extension of bloom graph is efficiently introduced in this paper. We determine its topological properties. Moreover, we compute various degree based indices of Bloom torus. A Hamiltonian decomposition partitions its edge set into disjoint Hamilton cycles. Edge-disjoint Hamiltonian cycles assist to produce efficient and fault tolerant algorithms for ring structures. In this paper, we provide an algorithm for two edge-disjoint Hamiltonian cycles of Bloom torus. Finally, we give construction to find Wiener index of Bloom torus. Several benchmarks such as network diameter, network cost, packing density and network throughput are used for performance evaluation of a network. We prove that the bloom torus has less network diameter than the usual grid torus when the column dimension is less than the row dimension. We determine its topological properties. A new flower structure of bloom torus to find better crossing number of bloom torus is derived. Finally undirected graph product for bloom torus is provided.

Keywords

Bloom torus, Hamiltonian cycle, VLSI layout, interconnection network, topological properties.

AMS Subject Classification

05C62, 05C85, 05C10, 05C51, 68R10.

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Contents

1. Introduction

The torus portrays how energy flows in its utmost balanced dynamic flow system, not depicting a particular form alone. It has a central axis with a vertex on either side surrounded by a coherent field. The energy flows from one vertex to the other through the central axis, wrapping around itself. Donut is the simplest representation of its overall form despite taking various shapes depending upon the medium of its existence. Plants and trees exhibit same energy flow process in different shapes and sizes. Other examples include hurricanes, tornadoes, galaxies and magnetic fields of planets and stars. Extending this observation to quantum realm, we can conclude that atom structures and systems are also of the same dynamic form. With the torus features, the ecosystem becomes balanced and whole. Without them, system gets dysfunctional thereby making it necessary to restore the torus features. Another aspect of this flow process is the double

Propagation in certain nano structures and bloom torus

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S. Kulandai Therese, Paul Manuel, and Antony Xavier

μ-distance, fuzzy Steiner μ_k-eccentricity, upper fuzzy Steiner μ_k-*eccentricity.*

I. INTRODUCTION

We often face unpredictability in many of our real life problems. So we need to consider fuzziness in every field. Rosenfeld developed the postulation of fuzzy graph theory in 1975. Although a fuzzy graph is similar in structure to that of a crisp graph, it better describes a real situation than a crisp graph and has some special characteristics. Steiner distance in crisp graphs and its properties were described in [3] and [10]. The properties of fuzzy graphs and their applications in various fields are studied from [1], [2], [4], [6], [7] and [8]. Some new distance parameters are introduced and examined in [5] and [9]. Here we introduce new parameters Steiner μ distance and upper Steiner μ distance in fuzzy graphs.

II. PRILIMINARIES

Through out this article we consider only the connected fuzzy graphs G without loops and assume that V is finite and nonempty. Also we use the terms 'nodes' for vertices and 'arcs' for edges.

Definition 2.1 If G is a connected graph with n nodes and S is a subset of V (G), then the Steiner distance among the nodes of S is defined as the minimum size among all connected minimal sub graphs whose node sets contain S. These sub graphs are called Steiner trees of S.

Definition 2.2 The Steiner interval, $I_G(S)$ or I(S), of a set S is defined by $I_G(S) = \{w \in V(G) / w$ lies on a Steiner tree for S in G$\}$

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any u−v path.

III. FUZZY STEINER μ DISTANCE

Definition 3.1 Let G (V,σ,μ) be a connected fuzzy graph with n nodes. The Steiner μ distance between any two nodes of a non-empty set S ⊆ V (G) is defined as the minimum sum of reciprocals of arc weights of minimal connected fuzzy sub graphs containing S. These fuzzy sub graphs are called fuzzy Steiner trees for S. The fuzzy Steiner μ distance of S is denoted by $d_{\mu G}(S)$ (or) $d_{\mu S}(u,v)$ where u and v are nodes in S. For k = 2,3,….n we define the following parameters of fuzzy Steiner μ-distance.

Definition 3.2 The fuzzy Steiner μ_k-eccentricity $e_{\mu_k G}(u)$ of any node u is given below

$$e_{\mu_k G}(u) = \max\{d_{\mu S}(u,v)/S \subseteq V(G), |S| = k \,\&\, u,v \in S\}$$

Definition 3.3 The fuzzy Steiner μ_k radius of any node u in G is

$$r_{\mu_k G}(G) = \min\{e_{\mu_k G}(u)/\, u \in V(G)\}$$

Definition 3.4 The fuzzy Steiner μ_k diameter of a node u in V (G) is

$$\mathrm{diam}_{\mu_k G}(G) = \max\{e_{\mu_k G}(u)/\, u \in V(G)\}$$

Definition 3.5 A node u is a fuzzy Steiner μ_k diametral node (or) peripheral node if

$$e_{\mu_k G}(u) = \mathrm{diam}_{\mu_k G}(G)$$

Definition 3.6 The fuzzy Steiner μ_k centre $C_{\mu_k}(G)$ of a fuzzy graph G is the fuzzy subgraph induced by the nodes u of V(G) with $e_{\mu_k G}(u) = r_{\mu_k G}(G)$.These nodes are called fuzzy Steiner μ_k central nodes (or) fuzzy Steiner μ_k eccentric nodes.

Definition 3.7 The fuzzy Steiner μ_k median of G is the fuzzy subgraph of G induced by the nodes of minimum fuzzy Steiner μ_k distance in G.

Definition 3.8 The fuzzy average Steiner μ_k distance of a graph G, is defined as the average of the fuzzy Steiner μ-distances of all k-subsets of V (G).

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Steiner Domination In Line And Jump Fuzzy Graphs

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Abstract—Line graph L(G) of a graph G is acquired by converting the arcs of G into nodes of the L(G) and connecting the nodes of L(G) only if the corresponding arcs are incident with the same node. The jump graph J(G) is the complement of L(G). In this article bounds on steiner domination numbers of line fuzzy graphs and jump fuzzy graphs are obtained.

Keywords : fuzzy steiner domination, line fuzzy graphs, jump fuzzy graphs.
AMS Subject Classification 2010 : 05C72, 05C69, 51E10

1. Introduction

Rosenfeld launched fuzzy graph theory which has its applications in diverse fields. In particular fuzzy topologies are used in circuit designing and fuzzy steiner distance and domination have applications in routing problems. In engineering field steiner trees have applications in network routing, wireless communications and VLSI design. Various fuzzy graph theoretic concepts has been studied from [6] and [7]. In [1] and [2] the authors described about domination in fuzzy graphs. Steiner domination in crisp graphs was studied from [3], [4] and [5]. A steiner set of a fuzzy graph (V, σ, μ) is a set of nodes S such that any node in G lies in some steiner tree of G. A steiner dominating set of G is a set of nodes which is both steiner set as well as dominating set. The minimum fuzzy cardinality of a minimal fuzzy Steiner dominating set is called fuzzy Steiner dominating number denoted by γ^{fs} and the maximum fuzzy cardinality of a minimal fuzzy Steiner dominating set is called upper fuzzy Steiner dominating number denoted by Γ^{fs}. Here we acquire some bounds on steiner domination numbers of line fuzzy graphs and jump fuzzy graphs.

2. Steiner Domination in Line fuzzy and Jump fuzzy graphs

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THE TOTAL TRIANGLE FREE DETOUR NUMBER OF A GRAPH

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ABSTRACT. For a connected graph $G = (V, E)$ and u, v any two vertices in G, a $u - v$ path P is said to be a $u - v$ triangle free path if no three vertices of P induce a cycle C_3 in G. The triangle free detour distance $D_{\Delta f}(u, v)$ is the length of a longest $u - v$ triangle free path in G. A $u - v$ triangle free path of length $D_{\Delta f}(u, v)$ is called the $u - v$ triangle free detour. In this article, the concept of total triangle free detour number of a graph G is introduced. It is found that the total triangle free detour number differs from triangle free detour number and connected triangle free detour number. The total triangle free detour number is found for some standard graphs. Their bounds are determined. Certain general properties satisfied by them are studied.

1. INTRODUCTION

For a graph $G = (V, E)$, we mean a finite undirected connected simple graph. The order of G is represented by n. We consider graphs with at least two vertices. For basic definitions we refer [3]. For vertices u and v in a connected graph G, the detour distance $D(u, v)$ is the length of the longest $u - v$ path in G. A $u - v$ path of length $D(u, v)$ is called a $u - v$ detour. This concept was studied by Chartrand et.al, [1].

A vertex x is said to lie on a $u - v$ detour P if x is a vertex of $u - v$ detour path P including the vertices u and v. A set $S \subseteq V$ is called a detour set if

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2010 *Mathematics Subject Classification.* 05C12.

Key words and phrases. triangle free detour set, triangle free detour number, total triangle free detour set, total triangle free detour number.

Nano Ideal Generalised Closed Sets in Nano Ideal Topological Spaces

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ABSTRACT
The purpose of this paper is to define and study a new class of closed sets called $NIgsemi^*$-closed sets in nano ideal topological spaces. Basic properties of $NIgsemi^*$ - closed sets are analyzed and we compared it with some existing closed sets in nano ideal topological spaces.
Key words:$NIgsemi^*$- closed set, closed sets in nano ideal topology ,$NIgsemi^*$- open set, nano topology.

1. INTRODUCTION

The concept of ideal topological space was introduced by kuratowski [9]. Also he defined the local functions in ideal topological spaces. In 1990, Jankovic and Hamlett [4] investigated further properties of ideal topological spaces. The notion of I-open sets was introduced by Jankovic et al. [5] and it was investigated by Abd El-Monsef [11]. Later, many authors introduced several open sets and generalized open sets in ideal topological spaces such as $pre\ I$-open sets[2], $semi\ I$-open sets [6], α-I-open sets[6] , αg-I-open sets [23] and gp-I-open sets [23].

In 2013, Lellis Thivagar and Carmel Richard[12] established the field of nano topological spaces which was defined in terms of approximations and boundary region of a subset of an universe using an equivalence relation on it and also defined nano closed sets, nano-interior and nano-closure. K.Bhuvaneswari et al. [9] introduced and studied the concept of nano generalised closed sets in nano topological spaces. Later Many researchers like [3],[9] obtained several generalizations of nano open sets. In 2012, Robert et. Al [1,2] introduced the class of $semi^*$-open sets and $semi^*$-closed sets in Topological Spaces. In 2015, Paulraj Gnanachandra [19] introduced the notion of $nano\ semi^*$-open sets and $nano\ semi^*$-closed sets in terms of nano generalised closure and nano generalised interior in Nano Topological Spaces. In 2020 [18], further properties of $nano\ semi^*$-open sets were investigated.

M. Parimala et al. [14, 15, 17] introduced the concept of nano ideal topological spaces and investigated some of its basic properties. In 2018, M.Parimala and Jafari [15] introduced the notion of $nano\ I$-open sets and studied several properties. Further she defined nIg - open sets and nIg- closed sets in Nano Ideal Topological Spaces.

In this paper, we introduce a new type of generalized closed and open sets called $NIgsemi^*$-closed set and $NIgsemi^*$-open set in nano ideal topological spaces and investigate the relationships between this set with other sets in nano topological spaces and nano ideal topological spaces. Characterizations and properties of $NIgsemi^*$ -closed sets and $NIgsemi^*$-open sets are studied.

2. PRELIMINARIES

Throughout this paper $(U, \tau_R(X))$ (or U) represent nano topological spaces on whichno separation axioms are assumed unless otherwise mentioned. For a subset A of a space $(U, \tau_R(X))$, $N\ cl(A)$ and $N\ int(A)$ denote the nano closure of A and the nano interior of A respectively. We recall the following definitions, which will be used in the sequel.

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New Continuous Function In Nano Topological Spaces

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Abstract

The determination of this paper is to introduce the concept of α_{Ng}continuous function in Nano Topological space and derive their characterizations in terms of α_{Ng} closed set, α_{Ng} interior and α_{Ng} closure. Also we relate α_{Ng} continuous maps with other continuous maps.

Keywords *Nano topological space, α_{Ng} continuous, α_{Ng} closed , α_{Ng} interior and α_{Ng} closure.*

1. INTRODUCTION

Continuous function is one of the main concepts of Topology. Balachandran[1] et al. have introduced g-continuous function in topological spaces. The notion of Nano topology was introduced by LellisThivagar[3] which was defined in terms of approximations and boundary region of a subset of an universe using an equivalence relation on it and he also defined Nano closed sets, Nano-interior, Nano-closure and Nano continuous functions.Suganya[5] et al introduced and studied some properties of α_{Ng} open sets in Nano topological spaces. In this paper we have introduced a new class of functions on Nano topological space called α_{Ng} continuous functions and derived their characterizations in terms of α_{Ng}closed sets, α_{Ng}closure and α_{Ng} interior.

2. PRELIMNARIES

Definition 2.1.[5]A subset A of a Nano topological space (U, τ_R(X)) is called α_{Ng}open set if $A \subseteq NgInt(NCl(NgInt(A))$.

Definition 2.2.[3]Let U be a non empty finite set of objects called the universe and R be an equivalence relation on U named as the indiscernibility relation. Then U is divided into disjoint equivalence classes. Elements belonging to the same equivalence class are said to be discernible with one another. The pair(U,R) is said to be the approximation space. Let X⊆U

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New Continuous Function In Nano Topological Spaces

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Abstract

The determination of this paper is to introduce the concept of α_{Ng}continuous function in Nano Topological space and derive their characterizations in terms of α_{Ng} closed set, α_{Ng} interior and α_{Ng} closure. Also we relate α_{Ng} continuous maps with other continuous maps.

Keywords *Nano topological space, α_{Ng} continuous, α_{Ng} closed , α_{Ng} interior and α_{Ng} closure.*

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Continuous function is one of the main concepts of Topology. Balachandran[1] et al. have introduced g-continuous function in topological spaces. The notion of Nano topology was introduced by LellisThivagar[3] which was defined in terms of approximations and boundary region of a subset of an universe using an equivalence relation on it and he also defined Nano closed sets, Nano-interior, Nano-closure and Nano continuous functions.Suganya[5] et al introduced and studied some properties of α_{Ng} open sets in Nano topological spaces. In this paper we have introduced a new class of functions on Nano topological space called α_{Ng} continuous functions and derived their characterizations in terms of α_{Ng}closed sets, α_{Ng}closure and α_{Ng} interior.

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Some New Nearly Open Sets in Nano Topological Spaces

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Abstract
The objective of this paper is to introduce new class of sets namely α_{Ng} open sets and α_{Ng} closed sets in Nanotopological spaces. Alsowedefineα_{Ng} interior and α_{Ng} closureand some of theirbasic properties arediscussed. Additionaly the relationship betweenα_{Ng} open (closed) sets andother Nano open(closed) sets arealso discussed.

Keywords Nano topological space, α_{Ng} open, α_{Ng} closed, α_{Ng} interior and α_{Ng} closure.

I. Introduction

Levine[5] introduced the class of g-closed sets in1970. S. Pious Missier and P. Anbarasi[6] introduced the concept of α^* open sets and discussed some of their basic properties.
M. Lellis Thivagar[3] introduced Nano topological space with respect to a subset X of a universe which is defined in terms of lower and upper approximations of X. He has also defined Nano closed sets, Nano interior and Nano closure of a set. He also introduced the weak forms of Nano open sets. K. Bhuvaneswari and K. Mythili Gnanapriya[1]introduced Nano g- closed sets and obtained some of the basic results. In this paper, we define a new class of sets called α_{Ng} open and α_{Ng} closed sets in the Nano topological space and study the relationships with other Nano sets.

II. Preliminaries

Definition 2.1.[7]A subset A of a topological space (X,τ) is called α^*open if $A \subseteq int^*(cl(int^*(A)))$

Definition 2.2.[6]Let U be a non empty finite set of objects called the universe and R be an equivalence relation on U named as the indiscernibility relation. Then U is divided into disjoint equivalence classes. Elements belonging to the same equivalence class are said to be discernible with one another. The pair(U,R) is said to be the approximation space. Let X⊆U

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Some New Nearly Open Sets in Nano Topological Spaces

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A New Class Of Nearly Open Sets In Nanotopological Spaces

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Abstract

The aim of this paper is to introduce a new class of sets, namely Nano semi-open sets and Nano semi*-closed sets. Further we define Nano semi*-interior and Nano semi*-closure and discuss its properties. Additionally we relate Nano semi*-open sets and Nano semi*-closed sets with some other sets.*

Keywords *and phrases: Nano semi*-open, Nano semi*-closed, Nano semi*-interior, Nano semi*-closure.*

I. INTRODUCTION

In 1963 Levine[5] introduced semi-open sets in topological spaces. After Levine's work, many mathematicians turned their attention to generalizing various concepts in topology by considering semi-open sets. A.Robert and S. Pious Missier [6] introduced the concept of semi*- open sets and discussed some of their basic properties. Levine [9] defined and studied generalizied closed sets in 1970. Das[2] defined semi-interior point and semi-limit point of a subset.M. LellisThivagar[3] introduced Nano topological space with respect to a subset X of a universe which is defined interms of lower and upper approximations of X. He has also defined Nano closed sets, Nano-interior and Nano-closure of a set. He also introduced the weak forms of Nano open sets. K.Bhuvaneswari and K.MythiliGnanapriya[1] introduced Nano g-closed sets and obtained some of the basic results. In this paper, we define a new class of sets called s^*_N open and s^*_N closed sets in Nano topological space and study the relationships with other Nano sets.

II. PRELIMINARIES

Definition 2.1:A subset A of a topological space (X,τ) is **semi-open [5]** if there is an open set U in X such that $U \subseteq A \subseteq Cl(U)$ or equivalently if $A \subseteq Cl(Int(A))$. The class of all semi-open sets in (X,τ) is denoted by **SO(X,τ)**

Definition 2.2: A subset A is a topological space (X,τ) is **pre-open [7]** (resp. α-open[8]) if $A \subseteq int(cl(A))$ (resp. $A \subseteq int(cl(int(A)))$).

Definition 2.3: If A of a subset of a space X, the **semi-interior** of A is defined as the union of all semi-open sets of X contained in A. It is denoted by **sInt(A)**

Definition 2.4: A subset A of a space X is **generalized-closed** (briefly g-closed)[9] if $Cl(A) \subseteq U$ whenever $A \subseteq U$ and U is open in X.

Definition 2.5: If A is a subset A of a space X, the **generalized-closure** [3] of A is defined as the intersection of all g-closed sets in X containing A and is denoted by Cl*(A).

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NEW NOTIONS IN IDEAL TOPOLOGICAL SPACES

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Abstract:- The aim of this paper is to introduce the notion of Fg closed sets in Ideal Topological Spaces. Several properties and characterizations of Fg closed sets in Ideal topological spaces are discussed.

Keywords— Feebly closed set, Semi closed set , I-closed set , Feebly I-closed set , Semi I closed set, Fg I closed sets.

I.INTRODUCTION

The concept of ideal topology in the classic text was introduced by Kuratowski [6]. D.Jankovie and R Hamlelt [2] introduced the concept of I open set in Ideal Topological Space. After that M.E.Abdel, E.Monsef, F.Iashien and A.A.Nasef [7] introduced a new study about the I open set. S. N. Maheshwari and P. C. Jain [9] introduced the concept of feebly open set and feebly closed set in topological spaces, after that many Authors used the concept of feebly open set and feebly closed sets to study another concepts in Topological Spaces.

N.Ievin [8] introduced the concept of semi open sets and semi closed sets. After that Hatir defined semi open set in Ideal Topological Spaces [3]. Then K. Yiezi Al Talkany and H. Suadud Al Ismael [12] were defined the feebly open set in ideal topological space. In this paper we introduced new notion of closed sets in ideal topological spaces called F_gI closed set. Further we investigated its properties and its characterizations. Throughout this paper (X, τ) or simply X denote topological space on which no separation axioms are assumed unless otherwise explicitly stated.

II. PRELIMINARIES

Definition 2.1[5]

An ideal I on a topological space $(\boldsymbol{X}, \boldsymbol{\tau})$ is a nonempty collection of subsets of X, which satisfies the following two conditions:

(i) If $A \in I$ and $B \subseteq A$ implies $B \in I$

(ii) If $A \in I$ and $B \in I$, then $A \cup B \in I$

Definition 2.2[5]

An ideal topological space is a topological space $(\boldsymbol{X}, \boldsymbol{\tau})$ with an ideal I on X and it is denoted by $(\boldsymbol{X}, \boldsymbol{\tau}, \boldsymbol{I})$. Given a topological space $(\boldsymbol{X}, \boldsymbol{\tau})$ with an ideal I on X and if $\boldsymbol{\rho}(\boldsymbol{X})$ is the set of all subsets of X, a set operator $(*) : \boldsymbol{\rho}(\boldsymbol{X}) \rightarrow \boldsymbol{\rho}(\boldsymbol{X})$, called a local function of A with respect to τ and I, is defined as follows: for $\boldsymbol{A \subseteq X}$, $\boldsymbol{A^*(I, \tau) = \{x \in X / U \cap A \notin I}$ for every $\boldsymbol{U \in \tau(x)\}}$ where $\boldsymbol{\tau(x) = \{U \in \tau / x \in U\}}$. We simply write A^* instead of $\boldsymbol{A^*(I, \tau)}$.

Definition 2.3

For every Ideal topological space (X, τ, I), there exists a topology $\tau*(I)$, finer than τ, generated by $\beta(I,\tau) = \{U\text{-}i/U \in \tau \ \& \ i \in I\}$. But in general (I, τ) is not always a topology. Additionally $cl^*(A) = A \cup A^*$ defines a kuratowski closure operator for $\tau^*(I)$. If $A \subseteq X$, $cl(A)$ and int(A) will, respectively, denote the closure and interior of A in (X, τ) and $int^*(A)$ denote the interior of A in $(X, \tau*)$. A subset A of an ideal space (X, τ, I) is *-closed (resp. *-dense in itself) if $A^* \subseteq A$ (resp. $A \subseteq A^*$).

Definition 2.4 [7]

Given a space (X, τ, I) and $A \subseteq X$, A is said to be I open if $A \subseteq intA^*$. We denoted by $IO(X, \tau) = \{A \subseteq X, A \subseteq int(A^*)\}$ or simply write I.O for IO(X,T) when there is no chance for confusion.

Proposition 2.5[5]

Let (X, τ, I) be an ideal topological space then every closed I open subset A of X is open set.