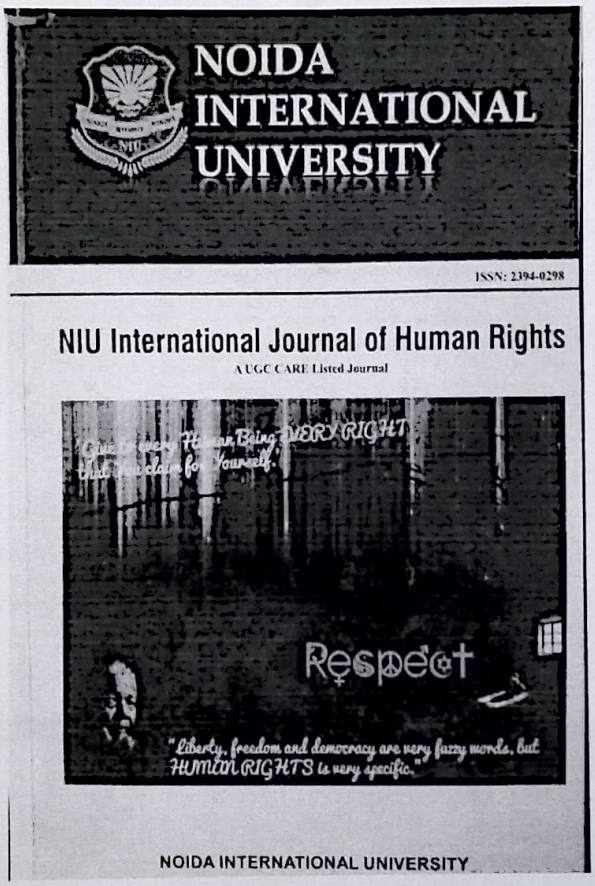
6.2.1 The Institutional Strategic / perspective plan has been clearly articulatedand implemented.

S.NO	DEPARTMENT	ISSN
1	Mathematics	5
2	Commerce cs	3



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NEIGHBORHOOD PRIME LABELING IN PRODUCT DIGRAPHS

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Abstract

Let $D(p, q)$ be a digraph. A function $f : V \to \{1, 2, \ldots, n\}$ is said to a neighborhood prime labeling of D if it is both in and out degree neighborhood prime labeling. In this paper, we investigate the existence of neighborhood prime labeling in product digraphs.

1. Introduction

A graph labeling is an assignment of integers to the vertices or edges or both subject to certain conditions. The concept of graph labeling was introduced by Rosa in 1967 [8]. A useful survey on graph labeling by J. A.

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Neighborhood Prime Labeling in Some Product And Power Digraphs

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Gallian (2014) can be found in [1]. S. K. Patel and N. P. Shrimali [5] have introduced the neighborhood prime labeling of graphs. A directed graph or digraph D consists of a finite set V of vertices and a collection of ordered pairs of distinct vertices. K. Palani et al. introduced the concept of neighborhood prime digraphs in [7]. In this paper, we investigate some product of digraphs for neighborhood prime labeling.

2. Preliminaries

The following definitions are from [3, 4, 6 and 7].

2.1. Definition. Let $D(p, q)$ be a digraph. A function $f : V(D) \to \{1, 2, \ldots, n\}$ is said to a *neighborhood prime labeling of D* if it is both in and out degree neighborhood prime labeling.

2.2. Observations.

1. If D is a digraph such that $N^+(u)$ or $N^-(u)$ are either $\emptyset$ or singleton set, then D admits neighborhood prime labeling.

2. A neighborhood prime digraph D in which every vertex of in-degree or out-degree at most 1, is neighborhood prime.

2.3. Definition. The *Cartesian product* of a family of digraphs $D_1, D_2, \ldots, D_n$ denoted by $D_1 \times D_2 \times \ldots \times D_n$ or $\prod_{i=1}^{n} D_i$ where $n \geq 2$ is the digraph D having $V(D) = V(D_1) \times V(D_2) \times \ldots \times V(D_n) = \{(W_1, W_2, \ldots, W_n) : W_i \in V(D_i), i = 1, 2, \ldots, n\}$ and a vertex $(u_1, u_2, \ldots, u_n)$ dominates a vertex $(v_1, v_2, \ldots, v_n)$ of D if and only if there exists an $r \in \{1, 2, \ldots, n\}$ such that $u_r v_r \in A(D_r)$ and $u_i = v_i$ for all $i \in \{1, 2, \ldots, n\} - \{r\}$.

2.4. Definition. Let D and F be digraphs. The product of digraphs D and F have similarly as in graphs, their set of vertices equal to $V(D) \times V(F)$. In the *strong product* $D \boxtimes F$ we have $((d, f), (d', f')) \in A(D \boxtimes F)$ if $((d, d') \in A(D)$ and $f = f')$ or $(d = d'$ and $(f, f') \in A(F))$ or $((d, d') \in AD$ and $(f, f') \in A(F))$.

2.5. Definition. A comb graph $P_n \odot K_1$ in which the path edges are

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Neighborhood Prime Labeling in Some Product and Power Digraphs

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Abstract: Let (p, q) be a digraph. A function $f: V \to \{1, 2, \ldots, n\}$ is said to a neighborhood prime labeling of D if it is both in and out degree neighborhood prime labeling. In this paper, we introduce the concept of neighborhood prime labeling in digraphs and also investigate the existence of neighborhood prime labeling in some digraphs.

Keywords: Neighborhood prime labeling, Cartesian Product, Power Digraphs
***AMS Subject Classification*:** 05C78.

1. Introduction:

A graph labeling is an assignment of integers to the vertices or edges or both subject to certain conditions. The concept of graph labeling was introduced by Rosa in 1967 [5]. A useful survey on graph labeling by J.A. Gallian (2014) can be found in [1]. Patel S K and Shrimali N P [4] have introduced the neighborhood prime labeling of graphs. A directed graph or digraph D consists of a finite set V of vertices and a collection of ordered pairs of distinct vertices. Any such pair (u, v) is called an arc or directed line and will usually be denoted by $\overrightarrow{uv}$. The arc $\overrightarrow{uv}$ goes from u to v and incident with u and v. A digraph D with p vertices and q arcs is denoted by $D(p, q)$. The in-degree $d^-(v)$ of a vertex v in a digraph D is the number of arcs having v as its terminal vertex. The out-degree $d^+(v)$ of v is the number of arcs having v as its initial vertex [2]. In this paper, we introduce the concept of neighborhood prime labeling in digraphs and investigate some digraphs for neighborhood prime labeling.

The following definitions and remark are from [3] and [4].

1.1 Definition: Let $G = (V, E)$ be a graph with n vertices. A bijective function $f: V(G) \to \{1, 2, \ldots, n\}$ is said to be a neighborhood-prime labeling, if for every vertex $v \in V(G)$ with $\deg(v) > 1, \gcd\{f(u): u \in N(v)\} = 1$. A graph which admits neighborhood prime labeling is called a neighborhood-prime graph.

1.2 Remark: If in a graph G, every vertex is of degree at most 1, then such a graph is neighborhood-prime vacuously.

1.3 Definition: Let $D = (V, A)$ be a digraph. For a vertex v in D, we use the following notation: define $N^+(v) = \{u \in V - v : vu \in A\}$ and $N^-(v) = \{w \in V - v : wv \in A\}$. The sets $N^+(v)$, $N^-(v)$ and $N(v) = N^+(v) \cup N^-(v)$ are called the out-neighborhood, in-neighborhood and neighborhood of v. We call the vertices in $N^+(v)$, $N^-(v)$ and $N(v)$ the out-neighbors, in-neighbors and neighbors of v.

1.4 Definition: The Cartesian product of a family of digraphs $D_1, D_2, \ldots, D_n$ denoted by $D_1 \times D_2 \times \ldots \times D_n$ or $\prod_{i=1}^{n} D_i$ where $n \geq 2$ is the digraph D having $V(D) = V(D_1) \times V(D_2) \times \ldots \times V(D_n) =$

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$\{(w_1, w_2, \ldots, w_n): w_i \in V(D_i), i = 1, 2, \ldots, n\}$ and a vertex $(u_1, u_2, \ldots, u_n)$ dominates a vertex $(v_1, v_2, \ldots, v_n)$ of D if and only if there exists an $r \in \{1, 2, \ldots, n\}$ such that $u_r v_r \in A(D_r)$ and $u_i = v_i$ for all $i \in \{1, 2, \ldots, n\} - \{r\}$.

1.5 Definition: For a positive integer p and a digraph D, the p^{th} power D^p of D is defined as follows: $V(D^p) = V(D)$, $x \to y$ in D^p if $x \neq y$ and there are $k \leq p-1$ vertices $z_1, z_2, \ldots, z_k$ such that $x \to z_1 \to z_2 \to \cdots \to z_k \to y$ in D.

2 Main Results:

In this section, we introduce the concept of neighborhood prime labeling in digraphs.

2.1 Definition: Let $D(p, q)$ be a digraph. A function $f: V(D) \to \{1, 2, \ldots, n\}$ is said to be an ***in-degree neighborhood prime labeling***, if for every vertex $v \in V(D)$ with $d^-(v) > 1$, $\gcd\{f(u) : u \in N^-(v)\} = 1$ where $N^-(v) = \{u \in V(D): \overline{uv} \in A(D)\}$.

2.2 Definition: Let $D(p, q)$ be a digraph. A function $f: V(D) \to \{1, 2, \ldots, n\}$ is said to be an ***out-degree neighborhood prime labeling***, if for every vertex $v \in V(D)$ with $d^+(v) > 1$, $\gcd\{f(u) : u \in N^+(v)\} = 1$ where $N^+(v) = \{u \in V(D): \overline{vu} \in A(D)\}$.

2.3 Definition: Let $D(p, q)$ be a digraph. A function $f: V \to \{1, 2, \ldots, n\}$ is said to a ***neighborhood prime labeling of D*** if it is both in and out degree neighborhood prime labeling.

2.4 Observations:

1. If D is a digraph such that $N^+(u)$ or $N^-(u)$ are either $\emptyset$ or singleton set, then D admits neighborhood prime labeling.

2. A neighborhood prime digraph D in which every vertex of in-degree or out-degree at most 1, is neighborhood prime.

2.5 Theorem: $\overrightarrow{P_2} \times \overrightarrow{P_n}$ admits a neighborhood prime labeling for all n.

Proof: Let u_1, u_2 be the vertices of the directed path $\overrightarrow{P_2}$ and let $v_1, v_2, \ldots, v_n$ be the vertices of the directed path $\overrightarrow{P_n}$.

Let $V(\overrightarrow{P_2} \times \overrightarrow{P_n}) = \{(u_1, v_i) \cup (u_2, v_i) \mid 1 \leq i \leq n\}$.

Choose $w_i = (u_1, v_i)$ and $x_i = (u_2, v_i) \quad \forall\, i = 1, 2, \ldots, n$.

$\therefore\ V(\overrightarrow{P_2} \times \overrightarrow{P_n}) = \{w_i \mid 1 \leq i \leq n\} \cup \{x_i \mid 1 \leq i \leq n\}$ and

$A(\overrightarrow{P_2} \times \overrightarrow{P_n}) = \{\overrightarrow{w_i x_i} \mid 1 \leq i \leq n\} \cup \{\overrightarrow{w_i w_{i+1}} \mid 1 \leq i \leq n-1\} \cup \{\overrightarrow{x_i x_{i+1}} \mid 1 \leq i \leq n-1\}$

Define $f: V(\overrightarrow{P_2} \times \overrightarrow{P_n}) \to \{1, 2, \ldots, 2n\}$ by

$f(w_i) = 2i - 1, \quad 1 \leq i \leq n$

$f(x_i) = 2i, \qquad 1 \leq i \leq n$

The labeling of a directed graph $\overrightarrow{P_2} \times \overrightarrow{P_n}$ is as follows

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SOME RESULTS OF SEMICOMPATIBLE MAPPING USING TYPES OF COMPATIBLE MAPS AND COMMON FIXED POINTS IN L FUZZY METRIC SPACES

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ABSTRACT

In this paper is to establish some results of semi compatible mapping using types of compatible .Also we prove a common fixed point theorem for semicompatible mapping in L fuzzy metric space.

Keywords: semi compatible, compatible, common fixed point, L fuzzy metric space

AMS Subject Classification: 54H25, 47H10

1. INTRODUCTION

The introduction of the concept of fuzzy set by Zadeh[12] in 1965,many authors have introduced the concept of fuzzy metric space in different ways.George and Veeramani [10,11] modified the concept of fuzzy metric space introduced by Kromosil and Michalek[9] and defined a Hausdorff topology on this fuzzy metric space. Using to idea of L- fuzzy sets[8], Saadati et al[10,11],introduced the notion of L-fuzzy metric space with the help of continuous t-norms as a generalization of fuzzy metric space due to George and Veeramani [10].
In this paper, we prove some results of semicompatible of L-fuzzy metric space using the compatible of type(A) and type(P).Also we prove a common fixed point theorem using the notion of semi compatibility using the property of (C).

2. PRELIMINARIES

Definition 2.1 A partially ordered $(L, \leq)$set in which all subsets have both supremum (join) and infimum(meet) is known as complete lattice.

Definition 2.2 [7] Let $\mathcal{L} = (L, \leq_L)$ be a complete lattice and U be a non empty set is called universe .An $\mathcal{L}$ - fuzzy set$\mathcal{A}$ on U is defined as a mapping $\mathcal{A}$:U→L.For each u in U, $\mathcal{A}(u)$ represents the degree to which u satisfies $\mathcal{A}$.

Lemma 2.3 [4] Consider the set $L^*$and operation $\leq_{L^*}$ defined by $L^* = \{(x_1, x_2): (x_1, x_2) \in [0,1]^2 \text{ and } x_1 + x_2 \leq 1\}.(x_1, x_2) \leq_{L^*} (y_1, y_2) \Leftrightarrow x_1 \leq y_1 and x_2 \geq y_2$ for every $(x_1, x_2), (y_1, y_2) \in L^*$.Then $(L^*, \leq_{L^*})$is a complete lattice.

Definition 2.4 [1] An **intuitionistic fuzzy set**$\mathcal{A}_{\zeta,\eta}$ on a universe U is an object

$\mathcal{A}_{\zeta,\eta} = \{(\zeta_{\mathcal{A}}(u), \eta_{\mathcal{A}}(u)): u \in U\}$ where for all$u \in U, \zeta_{\mathcal{A}}(u) \in [0,1]$ and

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A COMMON FIXED POINT THEOREM FOR COMPATIBLE MAPS OF TYPE (E) IN L-FUZZY METRIC SPACE

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Abstract

In this paper, we introduce the notion of compatible of type (E) in L-fuzzy metric space and prove a common fixed point theorem of self maps with the property of (C) in the complete L-fuzzy metric space.

1. Introduction

In 1986, the concept of fuzzy set was introduced by Zadeh [20]. Then fuzzy metric space was initiated by Kramosil and Michalek [9]. George and Veeramani [7] modified the notion of fuzzy metric space with the help of continuous t-norm. Using to idea of L-fuzzy set [8] Saadatietal, introduced the notion of L fuzzy metric spaces with the help of continuous t-norms as a generalization of fuzzy metric space due to George and Veeramani. In 2007,

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A Study on Issued Faced by Media Advertisement in Tirunelveli District

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Media advertisement faced lot of issues in advertise a product. In recent days social media advertisement were introduce in their social media faced lot of problems when the product familiarize because fake products were also announce. So the Government announce the lot of rules and regulation to advertise their own products in social media. The article focuses the issues faced by media advertisement in Tirunelveli district. Throughout this study 184 respondents are taken. Statistical analysis tools like percentage analysis, chi-square test, ANOVA. The result indicates that issues faced by media advertisements are different when compared to age wise classification.

Keywords: Media advertisement, Issues, Government, Social media, Products.

INTRODUCTION

Promotional is amazing which we are bare to from a young age and which can contain us in many changed ways. Publicize is a promotional measure for marketing a merchandise. In a current day world of frame manufacture and supply, publicity attends as influential tool in the marketing machinery. Different producers creation alike kinds of properties. They face hardstruggle in the marketplace. Each producer is annoying to generate demand for his merchandise. Promotion supports the producer to raise his sales or maintaining his market. It is only finished appropriate advertising a new invention can be presented in the market.

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Design and Fabrication of Pt Free FeNi2S4/rGO Hybrid Composite Thin Films Counter Electrode for High Performance Dye Sensitized Solar Cells

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Research Article

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Abstract

In this report, for the first time synthesized $FeNi_2S_4$/rGO composite as Pt free counter electrode (CE) by facile hydrothermal method without employing template or surfactant. Complete investigations of phase evolutions by XRD patterns and TEM indicate that spinel structure with nanosheets and nanospherical morphologies. The individual spherical shaped nanoparticles (30-35 nm) of $FeNi_2S_4$ were exploited on the 2D ultrathin rGO nanosheets surface. This is useful for the provision of further electrolyte adsorptions and responsive electrocatalytic sites. The DSSC constructed with $FeNi_2S_4$/rGO hybrid composite CE showed a conversion efficiency of 9.98%, better than that by $FeNi_2S_4$ CE (4.87%) and also commercial Pt (6.21%). The outstanding efficiency of the $FeNi_2S_4$/rGO hybrid composite CE even better than commercial Pt is effective alternative to Pt CE in the DSSCs.

1. Introduction

While dye-sensitized solar cells (DSSCs) are one kind of safe, economic and conveniently engineered cells have formed in laboratories in the decades and further developments are also required for their consumerism [1, 2]. CE plays an important role as a key component of the DSSC efficiency in that it gathers electrons from the exterior circuit and completes the flow of energy from the CE interaction to the electrolyte by electrocatalyzing the I_3^- decline. Over the past two years, it has been seen that platinum (Pt) is indeed an impressive material for counter electrode (CE) for extremely effective dye-sensitized solar cells (DSSCs), a requirement that seems to be in the field of improving CE fabrics [3–5]. As a noble metal, indeed, the surplus of the massive manufacturing of DSSCs is severely impeded by Pt. Seeking more plentiful and affordable resources, however, reinstate Pt is a major research field for DSSCs. To response to these chalanges, substitute of low-cost and productive components of metal oxides, chalcogenides, polymers and carbon based materials are suggested by the researchers [6–11].

Fe-Ni-based nanomaterials have recently been recognized under alkaline conditions as successful electrocatalysts in the reduction of I^-/I_3^-, which have experienced major recent advances. The alloying impact between Fe and Ni is fundamental to their extremely high conversion efficiency [12–18], of which the Fe/Ni quality ratio is of special importance. In contrast to the oxides/hydroxide equivalents based on Fe-Ni, the metallic sulphides dependent on Fe-Ni have improved conductivity. Consequently, $FeNi_2S_4$, which is not only has good electrical conductivity but also has an optimal material ratio of Fe/Ni, which results in effective electrocatalytic accomplishment. Even though, most of the literatures focus on the supercapacitors and lithium ion batteries of these compounds. There is no report about photovoltaic activity of $FeNi_2S_4$ based electrodes. For example, P. Guo et al [19] synthesized FeNi2S4 QDs@C composites and used as anode materials for lithium ion battery, which provide a areal high capacity of 920 $mAhg^{-1}$ at 0.1 Ag^{-1} could be achieved. Y. Huang et al [20] synthesized $FeCo_2S_4$@$FeNi_2S_4$ core/shell electrodes by facile hydrothermal method. The fabricated electrodes supply an exceptional specific capacitance of 2393 Fg^{-1} at 1Ag^{-1} and long cycle lifetime. J. Shen et al [21] also reported that high performance electrochemical based supercapacitor electrodes of $FeNi_2S_4$/TMDs-based ternary

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A STUDY ON IMPACT OF TELEVISION ADVERTISING ON JUNK FOOD IN SCHOOL CHILDREN AT TIRUNELVELI CITY

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INTRODUCTION

Healthy nutritious foods have been replaced by the new food mantra – junk food. In the context of world economy, junk food is a global phenomenon. The availability of junk food and snacks at low prices and marketing strategies adapted by manufacturers of such foods has triggered an evolution wherein, consumption of foods that require neither the structure nor the preparation of a formal meal. It seems to have engulfed every age; every race and the newest entrants on stage are children, school going in particular.Kids represent an important demographic to marketers because they have more autonomy and decision-making power within the family than in previous generations, they have their own purchasing power, they influence their parents' buying decisions through 'Pester power' and they're the adult consumers of the future. Fast food advertising has a host of techniques at their disposal. Marketing venues include television, radio, comic books and magazines. Fast food company logos appear on toys, in movies, on clothing and in video games. With the help of well-paid researchers and psychologists, advertisers now have access to in-depth knowledge about children's developmental, emotional and social needs at different ages. Using research that analyzes children's behavior, fantasy lives, art work, even their dreams, companies are able to craft sophisticated marketing strategies to reach young people.

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REVIEW OF PREVIOUS STUDIES

Hare-Bruun et al., (2011) revealed that a long time spent watching television in school children leads to a lesser number and irregular consumption of meals. The meals or foods they eat are not nutritious and do not fulfill the requirements of their body growth and development. They mentioned that television watching is strongly linked with the consumption and preferences of unhealthy food and habits.

Karthikeyan and Sivakami (2013) in the research paper explored both the beneficial and harmful effects to television media on children's mental and physical health and identified how the advertising industry can be regulated by formulation unified laws to prevent the over exposure of children to the world of television advertisements.

Divyang (2015) in his study revealed that children's comprehension of television advertising and ita persuasive intent increase with age because of greater cognitive maturity and increased experience with the medium. A maturity of five to eight years old have only a low awareness of what a commercial really is and three quarters of nine to twelve years old children demonstrate a medium level of awareness.

OBJECTIVES OF THE STUDY

1. To examine the awareness and attitudes of the children in buying junk food products.
2. To analyze the impact of television advertisement in buying junk food.
3. To analyze the impact on health of the children buying junk food.

HYPOTHESIS

1. There is no significance between the age of child and habit of eating snacks and meals while watching tv.
2. There is no significant between buying junk food and the health affect the children.

Sources of Data

Primary data has been collected from children studying in primary school through interview schedule. Secondary data has been collected from published records, journals, Magazines and Books.

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