

3.3.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five year :2019-20

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
1	Ahire S.C.	Socio-Economic Geography of Maharashtra(SYBsc)	Geography				2020	978-93-89944-20-4		Nirali PublicationLatur
2	Ahire S.C.	Human Geography (SYBSc)	Geography				2020	978-93-89944-28-0		Nirali Publication, Latur
3	Ahire S.C.	Pradeshik Niyojan Aani Vikas (Marathi)(SYBA)	Geography				2019	978- 93-88544-75-7		Atharv Publication Jalgaon
4	Bhoi S.S.	Biochemical Alteration in freshwater fish, Channamarulius (Ham Buch) exposed to 1/4th sub lethal concentrations of Cypermethrin and Fenvalerate	Zoology	International Journal of Life Sciences vol10 issue 0, 2320-964X(0)			2019	ISSN:2320-964	www.receiventscientific.com	International Peer Reviewed Open Access Journal
5	Bhoi S.S.	Biochemical changes of fresh water fish, channamarulius exposed to 3/4 sub lethal conc. Of cypermethrin and fenvalerate	Zoology	International journal of life sciences			2019	ISSN:2320-7817		open access
6	Desale S. B.	रवींद्र शोभणे यांचे कादंबरी लेखन	Marathi	मराठी कादंबरी परंपरा आणि चिकित्सा			2019	978-93-87042-83-4		



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7	Ahirrao R.B	Photoconductivity Study of Spray Pyrolyzed STO Thin Films	Physics	International Journal for Research in Applied Science & Engineering		2019	ISSN: 2321-9653		Peer reviewed
8	Ahirrao R.B.	Electricity And Electrostatics for F.Y.B.Sc.	Physics			2019	978-93-88441-40-7		
9	Patil J.U.	Physical and Inorganic Chemistry CH-401	Chemistry			2019	978-93-89492-60-6		Prashant Prakshan
10	Patil V.S.	Plant embryology BOT-401	Botany				ISBN:978-93-89825-96-1		Nirali Prakshan 2019
11	Korde Y. J.	MAHATMA GANDHI AANI GRAMIN VIKAS	History	CURRENT GLOBAL REVIEWER INTERNATIONAL MULTIDISCIPLINARY RESEARCH JOURNAL PEER REFEREED & RESEARCH	(SOECIAL ISSUE-28, VOL. 2, MARCH-2020, IMPACT FACTER-7.139) From 74	2020	ISSN-2319-86948		SHAURYA PUBLICATION LATUR
12	Borse M. S.	Industrial Chemistry for T.Y.B.Sc.[CH-355]	Chemistry			2019	978-93-89406-17-7		Nirali Prakshan
13	Borse M. S.	Industrial Chemistryfor T.Y.B.Sc.CH-365	Chemistry			2019	978-93-88706-85-8		Nirali Prakshan
6									
7									



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S.Y. B.Sc. : Semester-IV

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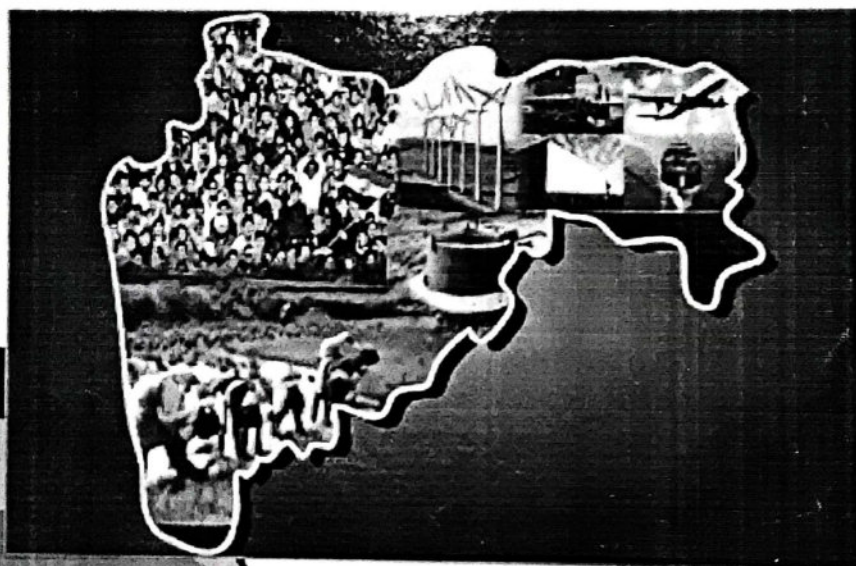
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SOCIO-ECONOMIC GEOGRAPHY OF MAHARASHTRA

(GEOGRAPHY-PAPER-II : Gg-402)

Dr. SURESH C. AHIRE
Dr. SATISH PATIL

Dr. PRASHANT R. TORAWANE
Dr. AMOL R. BHUYAR



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S.Y.B.Sc. Geography (P-II) : Sem-IV

First Edition : February 2020

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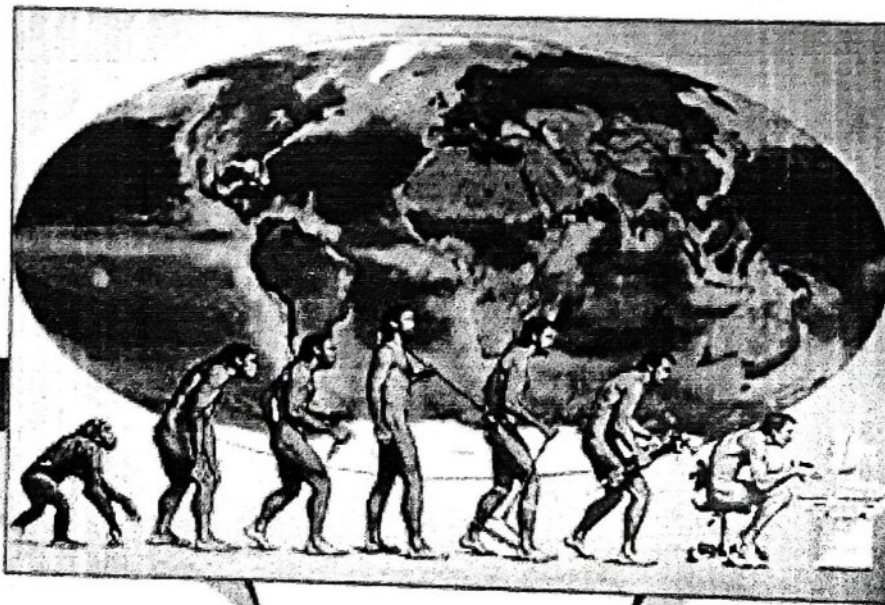
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HUMAN GEOGRAPHY

(GEOGRAPHY-PAPER-I : Gg-401)

Dr. SURESH C. AHIRE
Dr. SHIVAJI B. PATIL

Dr. SURESH C. GORANE
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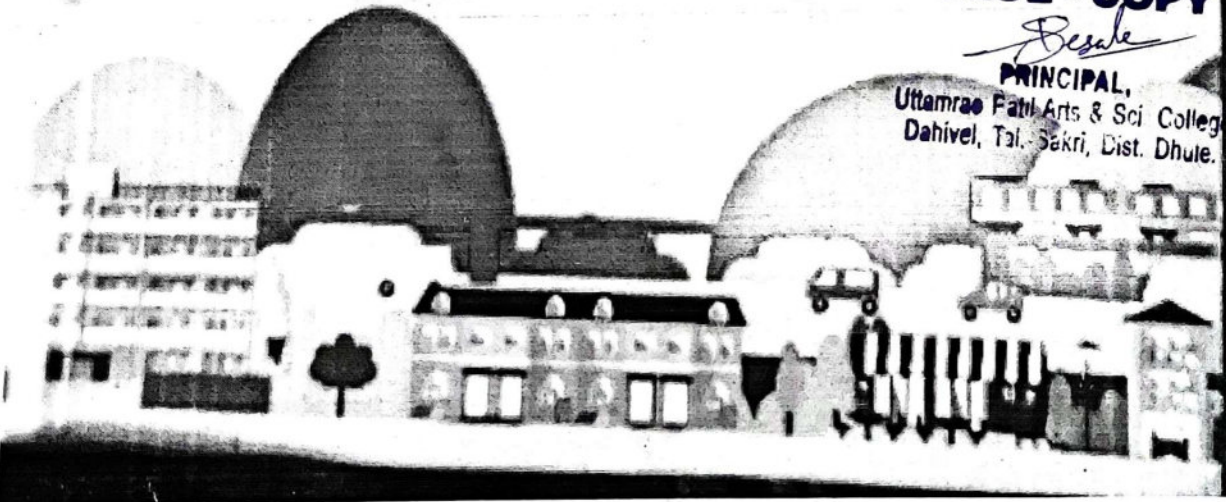
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Research Article

BIOCHEMICAL ALTERATION IN FRESHWATER FISH, *CHANNA MARULIUS* (HAM BUCH) EXPOSED TO 1/4th SUB LETHAL CONCENTRATIONS OF CYPERMETHRIN AND FENVALERATE

Bhoi, S. S¹ and Patole, S. S²

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Key Words:

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ABSTRACT

The present study designed to assess the effect of 1/4th sub lethal concentration of Cypermethrin and Fenvalerate on biochemical parameters of fresh water fish *Channa marulius*. The test fish were exposed for 96 h study the biochemical parameters such as Glucose, Protein and Cholesterol. The results of sub lethal toxicity tests and comparison of control with experimental groups. The biochemical parameters like glucose and cholesterol was increased whereas protein was decreased significantly in muscle of treated fish as compared to control.

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INTRODUCTION

The extensive use of pesticides viz; insecticides, herbicides and fungicide are being promoted by Government of India to enhance the crop production to fulfill the need of growing population. The rationale behind it is the eradication of undesirable insects, pests, weed and herbs and to increase yield, but on the other hand it lead to increase mortality of one of the most important aquatic fauna the fishes which forming staple food to the mankind. Studies on changes in biochemical composition in fishes have been made variously to body size, sex, season and pollution (Kumar and Fatah, 2017). Misra and Trivedi, 2017 reported that the protein contents in fish body do not remain constant rather they are subjected to change under different ecophysiological conditions. The information regarding the changes in protein content due to pollutant in fishes are scanty (Kumari and Yasmin, 2017; Razauddin et al., 2017; Pushpakumari, 2017 and Ahmad and Razauddin, 2018). Alaa GM Osman et al (2018) found that the levels of glucose and cholesterol were higher in Nile tilapia, *Oreochromis niloticus* and African fish *Clarias gariepinus* when evaluate water quality of the River Nile. Al-Otaibi et al (2019) reported elevated level of glucose which may be due to the mobilization of glycogen in glucose when cat fish, *Clarias gariepinus*

exposed to diazinon.

The present study showed the effect of Cypermethrin and Fenvalerate on glucose, cholesterol and protein contents of the freshwater fish, *Channa marulius* (Ham Buch).

MATERIAL AND METHODS

The fresh water fish *Channa marulius* weighing (15±5 g) and length (10±3 cm) were collected from Kan and Paurara river of Sakri Taluka (Dhule). Live fishes were brought to the laboratory and thoroughly washed under tap water and acclimatized in laboratory conditions for 15 days. They were fed with standard fish diet (Tokyu grow certified company). Water in the tank was changes after 2 days of interval. Technical grade Cypermethrin (25%) and Fenvalerate (ISAGRO ASIA), 20% (EC) were purchased from Sushil Agricultural pesticide and fertilizer Agency, Sakri for present study.

The fishes were divided into a 4 group, each group of ten healthy fishes were transferred to plastic tough having capacity of 10 litres and they exposed to 1/4th sub lethal concentrations of Cypermethrin (0.06 ppm) and Fenvalerate (0.085 ppm). One group was kept as control. At the end of 96 h exposure, the fish

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Original Article

Biochemical changes of fresh water fish, *Channa marulius* (Ham Buch) exposed to 3/4th Sub lethal Concentration of Cypermethrin and Fenvalerate.

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ABSTRACT

The present study is aimed to evaluate the changes in total protein, total cholesterol content and the glucose in muscle of *Channa marulius* after exposure to 3/4th sub lethal concentration of Cypermethrin and Fenvalerate. It was found that as compared to control the total proteins were reduced on other hand total cholesterol and glucose was increased with increased period of exposure to both pesticides. This study will reflect the role of these biochemical parameters for assessment of aquatic pollution as far as the natural pesticides are concerned.

Keywords: *Channa marulius*, Cypermethrin, Fenvalerate, Biochemical, Protein.

INTRODUCTION

Cypermethrin and Fenvalerate are widely used as pesticide all over the world to increase the production of food grains and other agricultural products (Bhoi *et al.*, 2016) and there is increased risk of food being contaminated with the insecticide, which may harm humans and domesticated animals. Cypermethrin and Fenvalerate produce drastic effects in fishes (Patole *et al.*, 2016). Biochemical and physiological biomarkers are frequently used for detecting or diagnosing sub lethal effects in fish exposed to different toxic substances (Monali and Deepronil, 2017). The pesticides can severely affect the physiological and health status of the fish (Bhoi and Patole, 2018). The most toxicants exert their effects at basic level of the organism by reacting with enzymes or metabolites and other functional components of the cell. The present study aimed to determine the sub lethal effects of Cypermethrin and Fenvalerate on some selected biochemical parameters of *Channa marulius*.

MATERIAL AND METHODS

The fresh water fish *Channa marulius* weighing (15.5 g) and length (10.2 cm) were collected from Kan and Panzara river of Sakri Taluka (Dhule) Dist. Fishes were brought to the laboratory and thoroughly washed under tap water and acclimatized in laboratory conditions.

विद्यया

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डॉ. सुनील देसले

साहित्यिक आणि त्याची साहित्यकृती यांचा अतूट संबंध असतो. एक प्रकारे ते लेखकाचे अपत्यच असते. त्या साहित्यिकाच्या साहित्यात त्याच्या जीवनानुभवांची गुंफण अपरिहार्य असते, म्हणून एखादी साहित्यकृती अभ्यासताना, तिचे मूल्यमापन करताना लेखकाचा जीवनानुभव तपासणे महत्त्वाचे ठरते. त्यामधून मानवीजीवनाचा अन्वयार्थ शोधता येतो. विशेषतः कादंबरी या वाङ्मयप्रकारात याचा प्रत्यय अधिक येतो. लेखकाच्या या लिखाणाच्या प्रक्रियेत विशेषतः कादंबरी वाङ्मयप्रकारातून व्यक्त होणाऱ्या जीवनानुभवाविषयी रवींद्र शोभणे म्हणतात, "संपूर्ण जीवनाचा अन्वयार्थ शोधण्याचा, जीवनाचे आपल्या जगण्याशी काय नातं आहे ते शोधण्याचा प्रयत्न आपण कादंबरी या वाङ्मयप्रकारातून करतो." शोभणेच्या बरील वक्तव्यावरून सांगता येईल की, लेखकाला इतर वाङ्मयप्रकारापेक्षा कादंबरी हा वाङ्मयप्रकार मानवीजीवनाच्या समग्र पैलूंना सामावणारा वाटतो, म्हणूनच जीवनाचे सर्वांगीण दर्शन घडविणाऱ्या या वाङ्मयप्रकारात आपले जीवनानुभव मांडण्यासाठी लेखकाला कादंबरी अधिक जवळची वाटते. तसेच कादंबरी या वाङ्मयप्रकाराला असलेले स्वातंत्र्य लक्षात घेऊन लेखक आपले जीवनानुभव प्रभावीपणे व्यक्त करू शकतो. त्यामुळेच आज असे म्हणावेसे वाटते की, रवींद्र शोभणे यांनी कादंबरी वाङ्मयाचा जो प्रपंच मांडला आहे त्यात दिवसेंदिवस होत जाणारा विकास आणि समाजात त्याची रुजलेली बीजे त्यातून येणारे अंकुर शोभणेच्या कादंबरीचे यश आहे. म्हणूनच त्यांच्या कादंबरीने यशस्वीतेचा

रवींद्र शोभणे यांचे कादंबरीविश्व □ २४५



Photoconductivity Study of Spray Pyrolyzed STO Thin Films

R.B. Ahirrao¹, M.S. Wagh²

^{1,2}Material Science Laboratory, Department of Physics, Pratap College, Amalner-425401, Maharashtra, India.

Abstract: The Strontium Titanate (STO) thin films are prepared by using spray pyrolysis technique with optimised parameters. The 0.1M films are prepared by spraying the aqueous solution of strontium chlorite hexahydrate [Sr (Cl₂) 6H₂O] and Titanium trichloride [TiCl₃] for 9:1, 1:1, and 1:9 volumetric ratios at 350°C temperature on to the preheated glass substrate. The films were characterized by XRD, FE-SEM, and UV-Vis. The films are used to measure the dark and photocurrent. Initially film was kept unexposed to light i.e. AC voltage of 100W tungsten filament bulb (which is source of radiation) at zero volt; now applied voltage is increased with step of 25V and corresponding dark current (I_d) measured up to 150V. Thereafter the same film is exposed to light by increase of AC voltage thereby increase intensity of light and corresponding photocurrents (I_p) are recorded. It was observed that Dark current (I_d) was greater than photocurrent (I_p). The dark current is more than that of photocurrent therefore negative photoconductivity exhibited by the material film. The cause of negative photoconductivity is described.

Keyword: STO films, Spray pyrolysis, DC conductivity, XRD, FE-SEM, UV, Negative Photoconductivity

I. INTRODUCTION

As silicon is the basis of conventional electronic and photovoltaic applications, strontium titanate (STO) is the workhorse in the emerging technologies based on complex oxides [1-3] besides being a popular substrate for growing other perovskites [4]. Although the pure STO is a transparent band insulator with a band gap of 3.2 eV, electron doping can be achieved by either thermal reduction in vacuum or ion irradiation.

As the name implies, photoconductivity is the effect whereby the electrical conductivity of a solid changes under the action of light. This effect, which was first observed in 1873 on selenium and which subsequently found application in the well known selenium cells. When the dark current is greater than photocurrent, the resultant conductivity is known as negative photoconductivity. This property has been used advantageously in several branches of science and technology. Photoconductivity studies on the films give information about the charge transport mechanism. It is important to determine the charge transport mechanism in order to improve the material properties for photo refractive applications. Photoconductivity is an elementary processing solid, and as the name suggests, it involves the generation and recombination of charge carriers and their transport to the electrodes.

Recent interesting findings in STO have triggered many attempts to search for new physics in these material and related perovskite oxides. Current thinking is that the nature of its oxygen vacancy is closely related to the physical properties of STO. Although many experimental and theoretical efforts have been made, the role of this oxygen vacancy is not yet well understood. However, new insights into the atomistic and electronic structure of the oxygen vacancy in STO have been obtained through first-principle calculations. The researchers, based at Kyoto University in Japan, found that the oxygen vacancy induces a local antiferrodistortive-like oxygen octahedron rotation, even in the cubic phase [5-6]. This feature leads to in-gap localized electronic states, giving a convincing explanation for the thermal ionization and optical transition that are observed experimentally. The oxygen-octahedron rotation around the oxygen vacancy thus plays a key role in the physical properties of STO.

II. SYNTHESIS OF STO THIN FILMS

The thin films were prepared by spraying aqueous solution as mixture of 0.1M Strontium chlorite hexahydrate [Sr (Cl₂) 6H₂O] and 0.1M Titanium trichloride [TiCl₃]. All solvents were completely miscible, in a volume ratio of 9:1, 1:1, and 1:9. This solution was prepared by dissolving appropriate amount of [Sr (Cl₂) 6H₂O], powder of white colour with molecular weight of 266.62 g/mol, in d-ionized water and appropriate amount of TiCl₃ liquid of violet in color with molecular weight of 154.23 g/mol in d-ionized water too. Mixing the solutions was carried out by using magnetic stirrer and leaving the solution for 30 minutes to make sure that no residues were left and to ensure the homogeneity of the resultant solution. The resultant solution was sprayed on glass substrate kept at 350°C ± 50°C. When the solution was sprayed, the reaction takes place at the surface of the heated substrate. The resultant films were stable and have good adhesive properties. Film thickness was estimated by employing the weight loss method.

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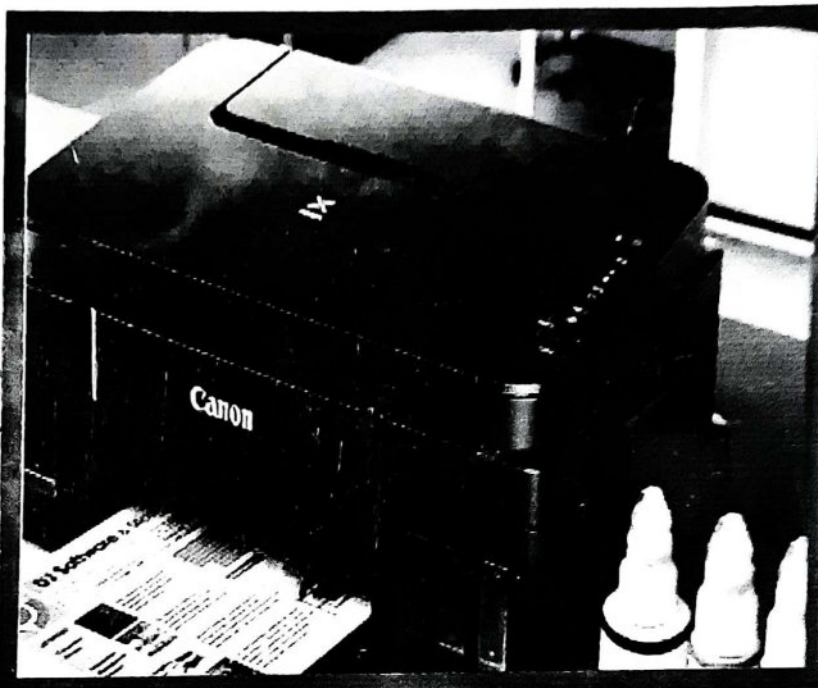
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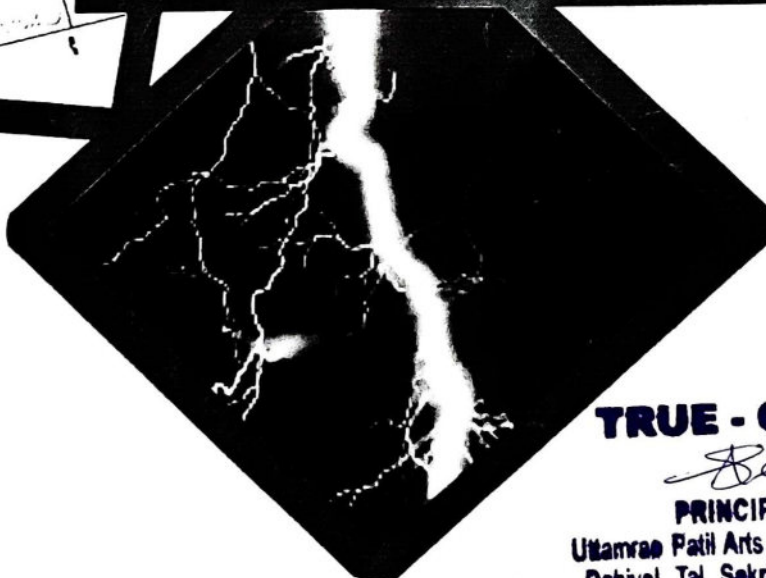
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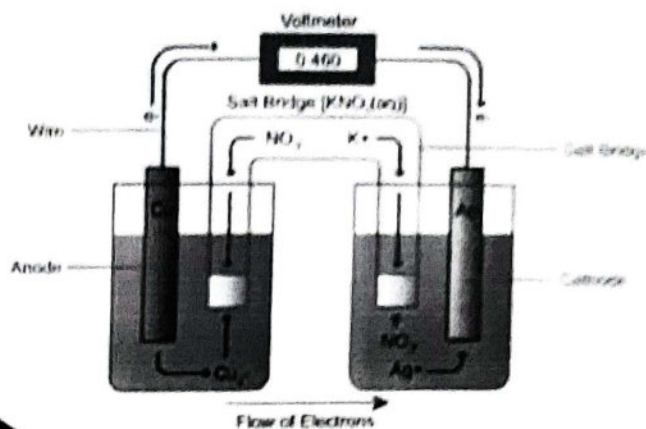
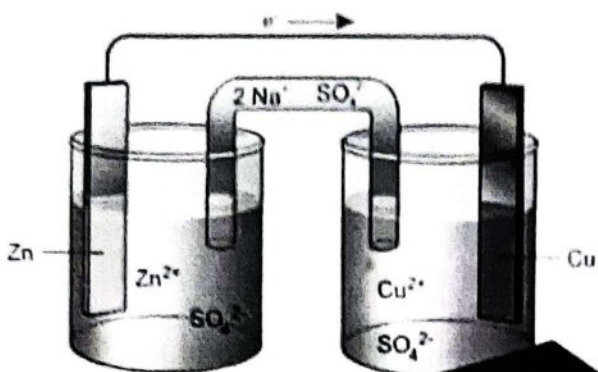
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(इतिहास विभाग), उत्तमराव पाटील महाविद्यालय, दाहिवेल, ता. साक्री, जि. धुळे.

प्रस्तावना :

भारताच्याच इतिहासात नव्हे तर जगाच्या इतिहासात गांधीजींच्या विचारांना आज अतिशय महत्त्वपूर्ण स्थान दिले आहे. गांधीजींनी संपूर्ण आयुष्यभर सत्य, अहिंसा यांना आपल्या आचारात व विचारात महत्त्वपूर्ण स्थान दिले तर भारताच्या स्वतंत्र चळवळीच्या इतिहासात या विचारांना कुणोतून जोड दिली. गांधीजींनी आपल्या चळवळीत खेडे हा अतिशय महत्त्वपूर्ण घटक घेतला. भारतातील खेडी स्वतंत्र पूर्ण काळाने स्वयंपूर्ण होती. ह्या खेड्याचा सर्वंक वारंभार स्वतंत्रित्या चालू होता. गांधीजींनी सर्वोत्तम प्रथम ग्रामीण विकासविषयी मत मांडले. गांधीजींच्या ग्रामसंरक्षणात प्रत्येक गाव स्वावलंबी असेल, सहकार हा त्याचा आधार असेल. ग्रामराज्यात राजकीय सत्तेचे व शक्तिचे विकेंद्रीकरण करण्यात येईल. त्यासाठी गावाचे प्रशासन पंचायतीकडे सोपविण्यात येईल. ग्रामपंचायतीकडे कायदे विषयक, न्यायविषयक व शासनाधिकार सत्ता असेल. प्रत्येक ग्राम हे आपल्या प्राथमिक गरजा भागविण्यास सक्षम असेल. आपल्या सर्व गरजांच्या पूर्ततेची साधने ग्रामपंचायतीतच उपलब्ध असतील अशा खेड्यांच्या अस्तित्वात व जास्ततः जास्त सत्ता ही ग्रामपंचायतीकडे असेल. अशा पंचायतीमाफत सामाजिक, आर्थिक तसेच राजकीय प्रश्न सोडविण्याचा प्रयत्न केला जाईल. त्यासाठी गांधीजी खेड्यांना सामाजिक, आर्थिक तसेच राजकीयदृष्ट्या स्वयंपूर्ण बनवू पाहत होते. गांधीजींच्या आदर्श व ग्राम समाज हा परिमंडसारखा व राहता गोलाकार असेल. व्यक्ति हा त्याचा केंद्रबिंदू असेल. प्रत्येक व्यक्ति स्वतःच स्वतःच नियंत्रण ठेवेल. तसेच प्रत्येक व्यक्ति गावाच्या प्रशासनात भाग घेईल. गावातील लोक शांतीपूर्ण व गौरवशाली जीवन व्यतीत करतील. दुसऱ्यांच्या विकासात अडथळे निर्माण करणार नाहीत. अशा समाजात समानता असेल, व्यक्ति गावासाठी व गाव देशासाठी बलीदान करेल. अशा पद्धतीने स्वयंपूर्ण व सुखी ग्रामराज्य अस्तित्वात आले तर देशात मध्यवर्ती शासनाची, तसेच संपूर्ण समाज जर अहिंसामय व समतामय समाज बनला तर राज्याच्या दृष्टीकडे आवश्यकता भासणार नाही असे गांधीजींचे मत होते.

गृहितकृत्ये : 'गुड आर्गन हंट' यानी गृहितकृत्याच्या संदर्भात म्हटले आहे की, "गृहितकृत्य म्हणजे असे विधान आहे की, ज्याची सप्रमाणता उरविण्यासाठी परीक्षण केले जाते आणि ते पुढील संशोधनासाठी उपयुक्त असते." म्हणून संशोधकाने संकलित प्राथमिक माहितीच्या आधारे शोधनिबंधाचे गृहितकृत्ये पुढील प्रमाणे सांगितले आहे. - १) ग्रामीण विकासासाठी महात्मा गांधीजी स्वयंशासनाला महत्त्व देत होते. २) खेडी स्वयंपूर्ण असावेत तरच ग्रामीण विकास होईल. ३) आरोग्य, ग्राम सफाई याशिवाय ग्राम नगररचना नाही. ४) सद्यकाळात ग्रामीण विकासात गर्तीशक्ती दिसून येते. ५) ग्रामीण भागात विकासाबरोबर दारिद्र्याचे प्रमाण अधिक दिसून येते. ६) ग्रामीण भागात विविध योजनांची प्रत्यक्ष अंमलबजावणी व पारदर्शकतेचा अभाव दिसून येतो.

उद्देश : शोधनिबंधातील संशोधनाला निश्चित दिशा मिळावी, संशोधन निश्चित हेतुपूर्ती करणारे असावे. याकरिता पुढील उद्देश निर्धारित केलेले आहेत. - १) ग्रामीण विकासाची संकल्पना स्पष्ट करणे. २) महात्मा गांधीजींचे ग्रामीण विकासासंबंधीचे विचार स्पष्ट करणे. ३) महात्मा गांधीजींच्या विचारांची प्रासंगिकता शोधणे. ४) आर्थिक विकास करून लोकांचे जीवनमान उंचावणे. ५) सहकारी तत्त्वाची अंमलबजावणी उदा. सहकारी शेत. व्यापार, खरेदी - विक्री इत्यादी. ६) लोकशासन निर्माण करून शासनाचे विकेंद्रीकरण करणे. ७) ग्रामीण जीवनात आर्थिक व सामाजिक समता प्रस्थापित करणे. ८) लोकांना सुखी, समाधानी व आत्मनिर्भर बनविणे इत्यादी बरील प्रमाणे महात्मा गांधीजींच्या ग्रामीण विकासाचा उद्देश स्पष्ट होतो.

संशोधन पध्दती : सदर शोधनिबंध हा पूर्णतः दुय्यम तथ्यांवर आधारित आहे. दुय्यम तथ्य संकलनासाठी विविध संदर्भग्रंथ, मासिके, इटनेट अशा स्रोतांचा वापर करण्यात आलेला आहे. या स्रोतांद्वारे प्राप्त माहितीचे विश्लेषण पुढील प्रमाणे करण्यात आले आहे.

ग्रामीण विकासाचा अर्थ : ग्रामीण विकास ही एक व्यापक संकल्पना असून यामध्ये ग्रामीण समाजाचा संपूर्ण विकास अपेक्षित आहे. मानवी जीवनाच्या आर्थिक, सामाजिक, सांस्कृतिक, राजकीय आणि तांत्रिक अशा विविध पैलूंमध्ये गुणात्मक परिवर्तन होणे म्हणजे विकास होय. ग्रामीण विकासामध्ये ग्रामीण लोकांच्या जीवनात पूर्णपणे सुधारणा घडवून आणणे अपेक्षित आहे. ग्रामीण विकासाचा अर्थ स्पष्ट होण्यासाठी पुढील व्याख्या उपयुक्त ठरते. - १) भारतीय विचारवंत जी. पार्थ सारथी यांच्या मते, ग्रामीण विकास म्हणजे ग्रामीण लोकांच्या जीवनमानात सुधारणा घडवून आणणे होय. ग्रामीण विकासात चार महत्त्वपूर्ण तत्त्व असतात - ग्रामीण लोकांचा सक्रिय सहभाग, मानवी संसाधनाचा पूर्णपणे उपयोग, पाहिलेले संयोजन, तांत्रिक ज्ञानाचा उपयोग. या चार तत्त्वांनुसार ग्रामीण विकास करणे. या व्याख्येवरून असे स्पष्ट होते की, ग्रामीण विकास ही एक अशा व्यूहरचना आहे की, ज्यानुसार ग्रामीण लोकांच्या जीवनमानात सुधारणा घडवून आणली जाते शिवाय त्यांच्या उत्पादनात वाढ करून त्यांना आर्थिकदृष्ट्या राजगाराच्या संधी उपलब्ध करून देण्यावर भर दिला जातो.

महात्मा गांधीजींची ग्रामीण विकासाची संकल्पना : महात्मा गांधी हे फक्त राजकीय विचारवंतच नव्हेत तर ते महान सामाजिक व धार्मिक सुधारक देखील होते. भारतीय खेड्यातील समाज हा त्यांनी आपल्या केंद्रस्थानी मानला व भारतीय समाज हा निर्भयी व स्वावलंबी व्हावा यासाठी त्यांनी आयुष्यभर काम केले. यातूनच त्यांनी ग्रामीण विकासविषयी मत मांडून यातूनच राष्ट्राचा विकास शक्य आहे असे मत प्रतिपादिले. यासाठी त्यांनी ग्रामसंरक्षणाचा पुरस्कार केला. हे करत असताना गांधीजींनी सामाजिक, आर्थिक व धार्मिक व्यवस्थेत दोष निर्माण न होवू देता आधुनिकीकरण घडवून आणण्यात आपले योगदान दिले. ग्रामसंरक्षणातून ग्रामीण विकास निर्माण करणारे महात्मा गांधी ग्रामीण समाजाचे होणारे शोषण, खेड्यातील अज्ञान - अंधश्रद्धा, दारिद्र्य व अस्मृशयता हे इतर समाजातील समस्यांशी अवगत होते. गांधीजींच्या विचारांचे

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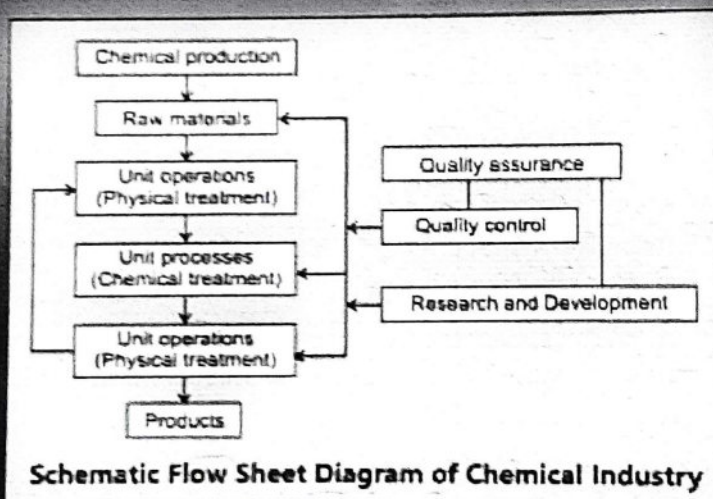
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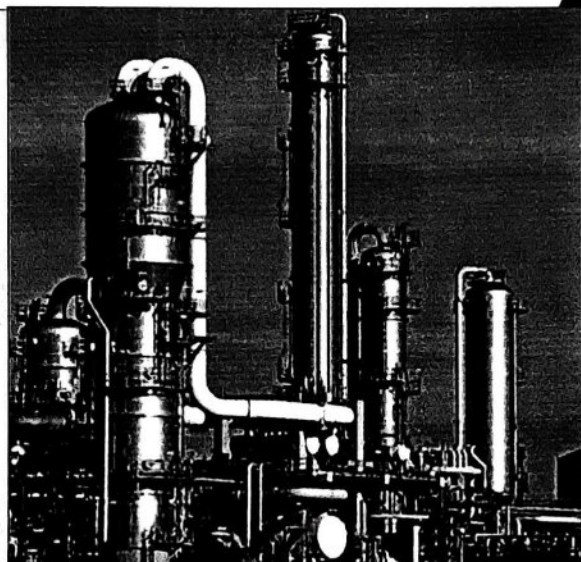
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