2354-3853 Fax: (033) 2350-5687



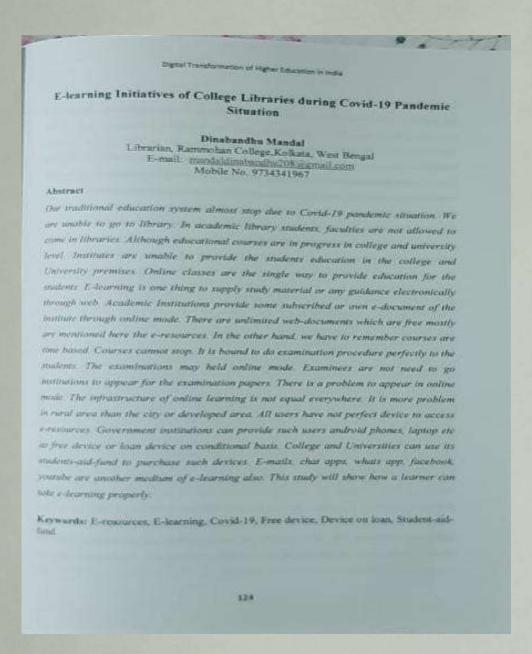
RAMMOHAN COLLEGE

(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Ref	Date	20

Year: 2021

Name of the teacher: Mr. Dinabandhu Mandal Title of book/chapter/paper: E-learning Initiatives of College Libraries during Covid-19 pandemic Situation



5 Sanyal

Fax: (033) 2350-5687

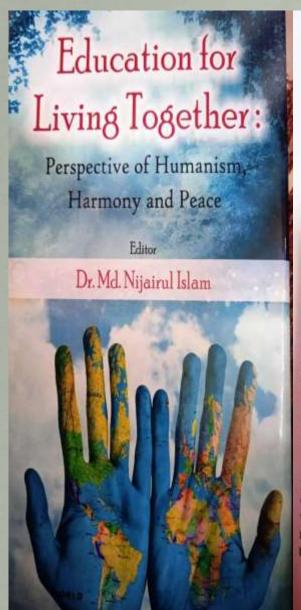


RAMMOHAN COLLEGE

(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Year: 2021

Name of the teacher:Dr. Mahfuz Alam
Title of book/chapter/paper: The Role of Mass Media in Social
Harmony in India



THE ROLE OF MASS MEDIA IN SOCIAL HARMONY IN INDIA

Dr. Mahfuz Alam
Assistant Professor,
Department of Education,
Rammohan College, Kolkata, West Bengal,
mahfuzalamofficial2014@gmail.com

"Peace does not mean an absence of conflicts; differences will always be there. Peace means solving these differences through peaceful means; through dialogue, education, knowledge, and through humane ways."—Dalai Lama XIV

Introduction

The word 'Media' connects its route with Latin 'medium' which means 'in the middle'. It can be broadly defined as certain mode of communication which happens through some medium. It possesses technical and institutional methods of production and distribution. Media has several types, based on accessibility, reach and audience. It plays an important role in the democratic system. Media helps for safekeeping the democratic values.

In present era, media plays an important role in social progress. It helps to increase and modify public awareness by collecting information and common people's attitude towards various issues. Whenever the common people read the newspaper, watch television, listen to the radio or gossip in the social media, they actually collect & process information

5 Sanyal

2354-3853

Fax: (033) 2350-5687



RAMMOHAN COLLEGE

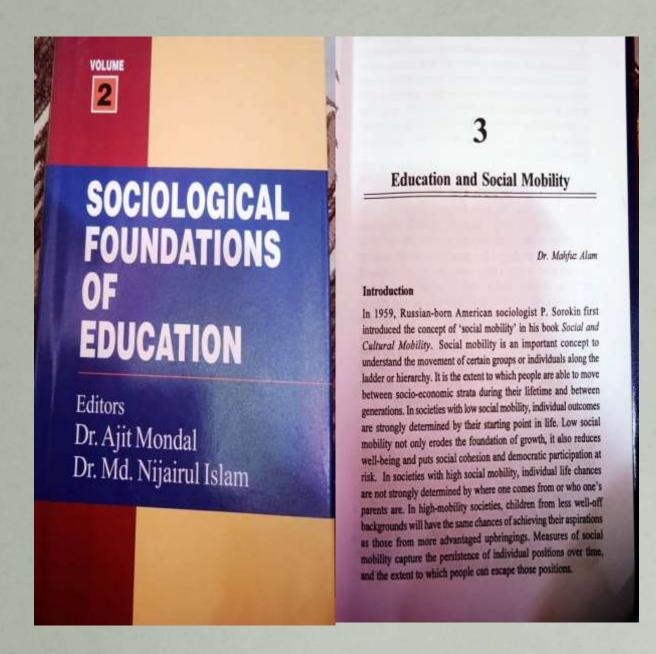
(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Ref	Date

Year: 2021

Name of the teacher: Dr. Mahfuz Alam

Title of book/chapter/paper: Education and Social Mobility



5 Sanyal

2354-3853

Fax: (033) 2350-5687



RAMMOHAN COLLEGE

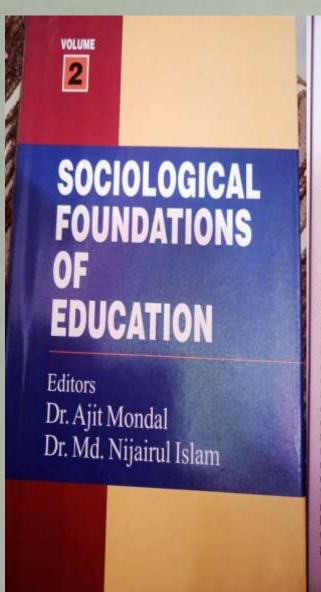
(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Year: 2021

Name of the teacher: Dr. Mahfuz Alam

Title of book/chapter/paper:Sociological Foundations of

Education



10

Education and Social Issues

Dr. Mahfuz Alam

Introduction

Experience shows that social issues yield much effect on the social and cultural fabric of a country. Social issues are not caused by a ingle person; it is the result of various happenings that are beyond a person's control. No country in the world exists without social issues. Cetain social issues can change the course of history of a country tracommunity. Generally, a social issue arises due to diverse opinions of individuals, based on what is perceived as right. Social issue does not necessarily refer to an ill to be solved, but it may be a topic to be discussed. These can be different for different groups, societies, mustries and the world. Different individuals and different societies may have different perceptions about a problem, giving rise to a Reial issue. Social issues arise due to inequalities in society and Section issues arise due to inequality. In the course of history, once India had been plagued with the social issues like 'system, child marriage, 'sati', untouchability, dowry system and so on. It took a lot of efforts for some of these social issues to maned completely, and some are still much alive in our society, aced to be addressed. Some of the burning social issues in the ent era India are child abuse, illiteracy, drug abuse, child

5 Sanyal

2354-3853 Fax: (033) 2350-5687



RAMMOHAN COLLEGE

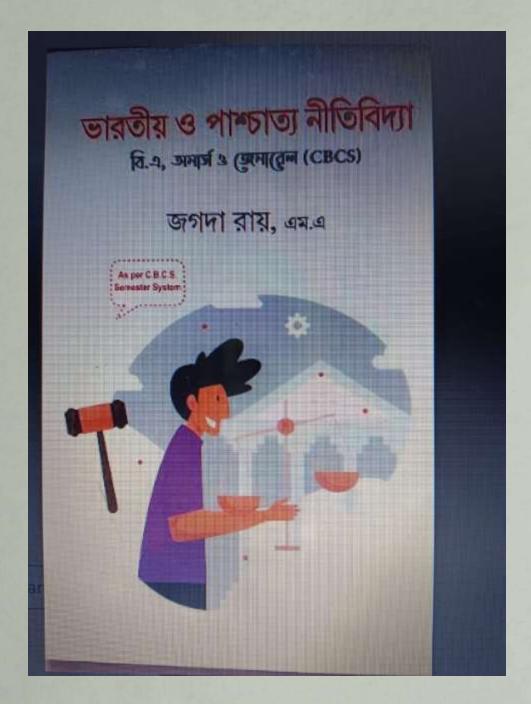
(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Ref		Date	20
	Year: 2022		

THE PARTY OF THE P

Name of the teacher: Mr. JAGODA ROY

Title of book/chapter/paper: ভারতীয় ও পাশ্চাত্য নীতিবিদ্যা



5 Sanyal

Fax: (033) 2350-5687



RAMMOHAN COLLEGE

(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Ref.

Year: 2022

Name of the teacher: DR. SAMIRAN MONDAL

Title of book/chapter/paper: Application of Quantum Dots in

Biology and Medicine: Recent Advances

Puspendu Barik Samiran Mondal *Editors*

Application of Quantum Dots in Biology and Medicine

Recent Advances



2354-3853 Fax: (033) 2350-5687



RAMMOHAN COLLEGE

(Formerly City College W. Dept.) 102/1, Raja Rammohan Sarani, Kolkata - 700 009 E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com Accredited B++ Grade by NAAC

Ref	Date	. 20

Year: 2022

Name of the teacher: DR. SAMIRAN MONDAL Title of book/chapter/paper: Introduction to Quantum Dots

Introduction to Quantum Dots



Samiran Mondal

Abstract Quantum dots (QDs) or luminescent semiconductor nanocrystals possess size-tunable elegant electro-optical properties, broad absorption spectra, and narrow emission ranging from UV to NIR region, high fluorescent quantum yields, fluorescence intermittency, resistance to photobleaching, and significant Stoke shift, which are the prerequisites for the application in vitro and in vivo bioimaging, biomarker, molecular pathology, drug delivery, and many more. The suitable applicability of QDs in the biomedical field needs to understand the science behind the QDs and their fundamental properties, which are most relevant to biology and medicine. In recent years, QDs have shown a wide variety of possibilities in the biomedical field due to their recent development of synthetic procedures and biocompatibility. The chapters will focus on the fundamentals of QDs. The chapter also includes a brief description of chapters in the book, which may help readers understand the topics

Keywords Quantum dots (QDs) · Fundamentals and applications of QDs · Biomedical field

QDs are nanometer-scale (typically 2-10 nm in diameter) semiconductor nanocrytals composed of Groups II (e.g., Zn, Cd),-VI (e.g., Se, S) or III (e.g., Ga, I),-V (e.g., N, P) or IV (e.g., Pb)-VI (e.g., Se, S) elements of Mendeleev periodic table that exhibit size-dependent optical properties, including absorbance and photoluminescence [1, 2]. Unique optoelectronic, catalytic, and semiconductor properties of QDs are arising due to their three-dimensional quantum confinement regime, i.e., the size of the QDs in the range of exciton Bohr radius [3, 4]. Valence and conduction bands are separated by a band gap in the semiconductor material. On photon absorption, electrons from the lower electronic energy state (valence band) are promoted to the higher electronic energy state (conduction band), producing a hole in the valence band. Bandgap energy becomes higher for the smaller QDs, and

S. Arondai (23) Department of Chemistry, Rammohan College, 102/1-Raja Rammohan Sarani, Kolkata, West Bengal 700009, India

e-mail: samiran1985@gmail.com; samiran@rammohancollege.ac.in

© The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2022 P. Barik and S. Mondal (eds.), Application of Quantum Dots in Biology and Medicine, https://doi.org/10.1007/978-981-19-3144-4_1

5 Sanyal

Fax: (033) 2350-5687



RAMMOHAN COLLEGE

(Formerly City College W. Dept.) 102/1, Raja Rammohan Sarani, Kolkata - 700 009 E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com Accredited B++ Grade by NAAC

Ref. 20

Year: 2022

Name of the teacher: DR. SAMIRAN MONDAL Title of book/chapter/paper: The Underlying Mechanism of Quantum Dot-Induced Apoptosis: Potential Application in Cancer Therapy

The Underlying Mechanism of Quantum **Dot-Induced Apoptosis: Potential** Application in Cancer Therapy



Jishu Mandal, Mriganka Mandal, Tamanna Mallick, and Samiran Mondal

Abstract Quantum dots (QDs) are a popular agent to use in a wide range of scientific and industrial applications because the molecules consist of an excellent biophysical and optical property, later varies with the compositions from a wide range of visible to infrared wavelength. Being an established fluorescent probe QDs are useful in the long-term, multiplexed and quantitative imaging and detection is governed wonderfully by QDs. Here we represent the present trends of the multidimensional use or applications of QDs in the field of biological science to achieve disease diagnostics, control over it and in particular cancer treatments and cellular mechanisms induced by QDs. The QDs are small in size with a high surface ratio, capable of potentially changing the therapeutic and pharmacological efficacy towards a good dimension of disease management. These are unique anti-cancer activities like apoptotic cell death and autophagy cell death, different types of molecular path-ways and mechanism of apoptosis has been focused hereafter application of quantum dots in various cell lines of malignant cells of mice and humans

Keywords Quantum dots · Apoptosis · Cancer therapy

Jishu Mandal, Mriganka Mandal-Both the authors have equal contributions

J. Mandal

7. Namena CIF Division Biophysical Laboratory, CSIR-Indian Institute of Chemical Biology, 4, Raja S. C. Mullick Road, Kolkata, West Bengal 700032, India

M. Mandal

Department of Botany, Dr. Kanailal Bhattacharyya College, 15, Kona Road, Santragachi, Howrah, West Bengal 711104, India

T. Mallick

Department of Chemistry, Viswa Bharat University, Santiniketan, West Bengal 731235, India

S. Mondai (63) Department of Chemistry, Rammohan College, 102/1-Raja RammohanSarani, Kolkata, West Bengal 700009, India e-mail: samiran1985@gmail.com; samiran@rammohancollege.ac.in

© The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2022 P. Barik and S. Mondal (eds.), Application of Quantum Dots in Biology and Medicine, https://doi.org/10.1007/978-981-19-3144-4_7

125

5 Sanyal

2354-3853

Fax: (033) 2350-5687



RAMMOHAN COLLEGE

(Formerly City College W. Dept.) 102/1, Raja Rammohan Sarani, Kolkata - 700 009 E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com Accredited B++ Grade by NAAC

Ref. Date 20

Year: 2022

Name of the teacher: DR. SAMIRAN MONDAL

Title of book/chapter/paper: Present Status and Future

Perspective

Present Status and Future Perspective



Samiran Mondal

Abstract The present chapter illustrates an overview of the application of quantum dots (QDs) and enlightens the future perspective on their potentiality in biology and medicine. The chapter highlights the critical aspects of QDs and the present state-of-the-art applications, both in vitro and in vivo.

Keywords Quantum dots (QDs) · Present status · Future perspective

The concept of artificial atoms or quantum dots (QDs) comes from the reduced dimensionality of semiconducting crystals, i.e., the size of semiconductor particles controls optical and electronic properties called the quantum size effect. QD synthesis, characterization, and applications are still highly active fields of interest to researchers despite being part of mature technologies. During the last three decades, researchers have synthesized QDs by improving monodispersity and size tunability to amelio-rate the overall optical properties by exploring different reaction conditions such as solvents, salts, pH, and temperature. The size-dependent tunable emission is attractive for biomedical research since luminescence is commonly used in cell, tissue, and animal experiments, supporting biomedical researchers with many precursors for building tools to address important questions and diagnose and treat diseases. Many researchers convincingly described many optical advantages of QDs over organic fluorophores or dye molecules for biomedical research, owing to their high quantum yield, broad absorption spectra, large Stoke shift, and highly stable. The widely increased interest in QDs has been established as a technological revolution by the tremendous efforts of scientists in chemistry, physics, biology, medical engineering, and pharmaceutical sciences.

QDs present a versatile tool to obtain a series of remarkable results in the fields of cell labeling, cell migration tracking, multiplexed imaging, flow cytometry, fluorescence in situ hybridization, targeted tracing in living cells and animals, real-time in vivo and cellular process imaging, genomic and proteomic detection, pathogen

Department of Chemistry, Rammohan College, 102/1-Raja Rammohan Sarani, Kolkata, West Bengal 700009, India

scollege.ac.in; samiran1985@gmail.com

© The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd. 2022 P. Barik and S. Mondal (eds.), Application of Quantum Dots in Biology and Medicine, https://doi.org/10.1007/978-981-19-3144-4_13

5 Sanyal

S. Mondal (185)

2354-3853

Fax: (033) 2350-5687

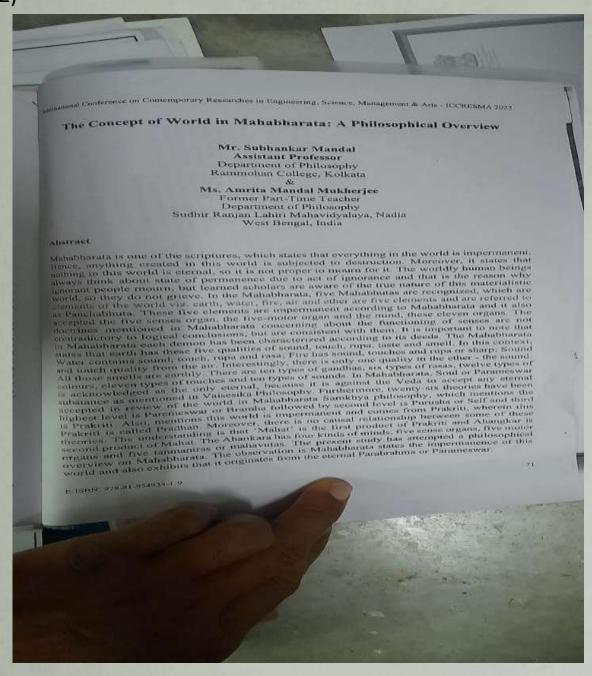


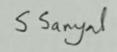
RAMMOHAN COLLEGE

(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Name of the teacher: Dr.Subhankar Mandal

Title of book/chapter/paper: The Concept of World in Mahabharata: A Philosophical Overview (pp. 71 & January 2022)





2354-3853

Fax: (033) 2350-5687

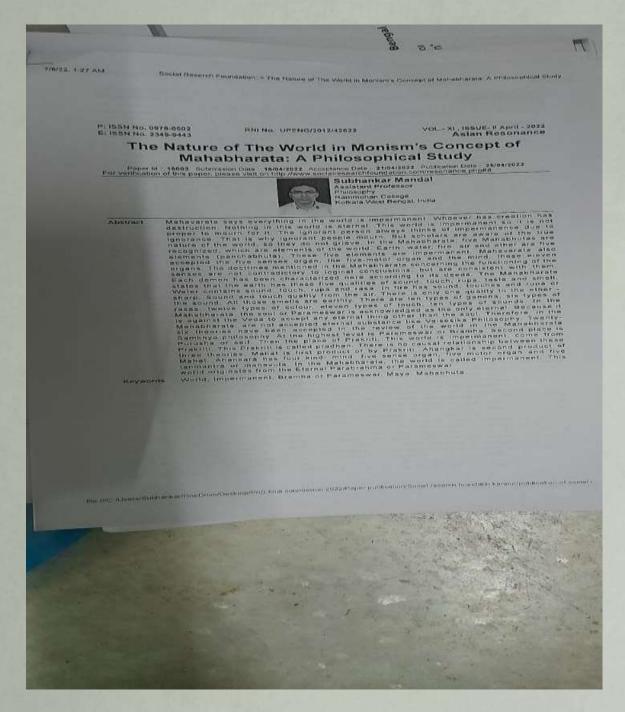


RAMMOHAN COLLEGE

(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Ref	Year: 2022	Date	. 20
	Year: 2022	Date	- 1

Name of the teacher: Dr.Subhankar Mandal
Title of book/chapter/paper: The Nature of The World in
Monism's concept of Mahabharata: A Philosophical Study (1-7)



5 Sanyal

Fax: (033) 2350-5687



RAMMOHAN COLLEGE

(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

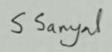
Ref		Date	20
	Year: 2022		

THE PARTY OF THE P

Name of the teacher: Tanushree Murmu

Title of book/chapter/paper: A non-linear model of a fishery resource for analyzing the effects of toxic substances

7:14 PM 🖯 🛐	8 and 8 and 23
A Non-linear Model of link.springer.com	fa F < ∶
Home > Nonlinear Dynamics paper	> Conference
A Non-linear Model	of a
Fishery Resource for	Analyzing
the Effects of Toxic S	
Sudipta Sarkar ⊠, Tanushree Mu	rmu
	v authors
Conference paper First Online:	06 October 2022
646 Accesses	
Part of the Springer Proces	edings in
Complexity book series (SI	PCOM)
Abstract	
The goal of the proposed	model is to
investigate and analyze tl	he qualitative
behaviour of predator-pre	ey fishery
resource in an aquatic ec	osystem by a
non-linear mathematical	model in
which prey and predator s	species are
	→
	230



Fax: (033) 2350-5687



RAMMOHAN COLLEGE

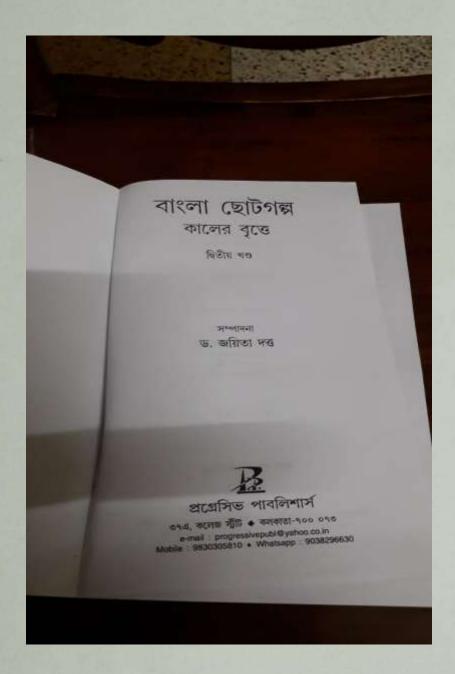
(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Ref	Vaar: 2022	Date	20
	vaar. ////		

Name of the teacher: Dr. Sumita Das Majumdar

Title of book/chapter/paper: বাংলা ছোটগল্প কালের বৃত্তে :

দ্বিতীয় খন্ড(পয়লানম্বর)



5 Sanyal

Fax: (033) 2350-5687



RAMMOHAN COLLEGE

(Formerly City College W. Dept.)
102/1, Raja Rammohan Sarani, Kolkata - 700 009
E-mail: rmc.tic85b@yahoo.in, rmc.principal@gmail.com
Accredited B++ Grade by NAAC

Ref.

Year: 2022

Name of the teacher: Dr. Samarendra Nath Banerjee Title of book/chapter/paper: Text Book on Biology (Editions: 2018-22)



5 Sanyal