

**ANNUAL REPORT**

**2018-19**

**DBT STAR COLLEGE SCHEME**

**SUPPORTED**

**BY**

**DEPARTMENT OF BIOTECHNOLOGY**

Ministry of Science and Technology

Government of India



**Guru Nanak College (Autonomous)**

**Guru Nanak Salai, Velachery, Chennai – 600042**

## Projects undertaken by Students

### Department of Physics

S.No.	Title of the project	Name of Student	Class
1	Water Alarm	Pakiram Padmini	I B.Sc
2	Refraction of light	Karthik Bharath Sathish Vasanth	II B.Sc
3	Vacuum Cleaner using waste water bottle	Shresta Sasikala Premavathi	II B.Sc
4	Free energy using magnets	Jayashree Subashree Geetha Gurinder	II B.Sc
5	Hearing aid	Vijay Vignesh Bharathan Ajay	II B.Sc
6	Smoke Sensor	Vaideeshwaran	II B.Sc
7	Free energy using fins and magnets	Jessica Rajammal Gnanasoundari Sivashini	II B.Sc
8	Generator using motor	Chandraleka Pooja Sneha	II B.Sc
9	Network Analysis- Threvenin's	Tamilselvan Pavithran Madhavamoorthy Dinesh CHandrabose	III B.Sc
10	Surface tension activities	Naveen Sanjay Manojkumar Poovarasana Rishi	III B.Sc
11	Rocket Propulsion- Principle of momentum	Ramakrishnan Karthik raja Jagan Sriram	III B.Sc
12	Sterling Machine	Ajit kumar SAravanan	III B.Sc

		Prashanth	
13	IR Approximator-Automatic door opening	Madhumitha Paramjot Kaur	III B.Sc

### Department of Chemistry

S.No.	Title	Name of Student	Class
1	Estimation of Elemental Nitrogen in Organo nitrogen compounds by Conductometric titration method.	V.Vinoth G.Hariharasudan Y.Shanmugam Sangeetha Muttil	III B.Sc
2	Biopolymers from food waste.	J.Diana S.Roshini	I B.Sc
3	A comparative study on the Saponification values of Edible Oils.	G.Anu P.Akalya Devi	III B.Sc
4	A preliminary study on biodegradable nanogels of gelatin cross-linked with functionalized Saponin.	N.Shanmugapriya K.G.Yugendiran	III B.Sc
5	A preliminary study on formulation of Neem oil nanoemulsion and evaluation of its antimicrobial and preservative efficacy.	V.Abilash V.Parthasarathy	III B.Sc

### Department of Plant Biology and Biotechnology

S.No.	Title	Name of Student	Class
1	Green Audit in GNC campus- EVS Project	II B.Sc Students	II B.Sc

### Department of Advanced Zoology and Biotechnology

S.No.	Title	Name of Student	Class
1	Enumeration of bacteria from air	Madheswaran, Akash Arun Kumar	III B.Sc
2	Isolation of lipase producing Bacteria	Krithika, Ayushi Afsana Parveen	III B.Sc
3	Screening for Siderophore and IAA producing bacteria:	Vasanth Nimal Mani Manoj	II B.Sc

### Industrial visits

S.No.	Place of Visit	No. of Beneficiaries	Class	Department
1	Vainu Bappu Observatory, Kavalur, Vellore, Tamil Nadu.	62	III B.Sc	Mathematics
2	Solitude Farm, Auroville, Pondicherry	73	II B.Sc	Mathematics
3	Retort Pharmaceuticals Pvt. Ltd, Madhavaram, Chennai	53	III B.Sc	Chemistry
4	Plant quarantine Station, Chennai.	40	III B.Sc	Plant Biology and Biotechnology
5	Advanced institute for wildlife conservation (AIWC), Kelambakkam,	10	III B.Sc	Plant Biology and Biotechnology
6	FRLHT- Trans-disciplinary University, Bengaluru	46	III B.Sc	Plant Biology and Biotechnology
7	IMPCOPS, Chennai	16	B.Sc	Plant Biology and Biotechnology
8	Central Marine Fisheries Research Institute (CMFRI), Rameshwaram	50	I B.Sc	Advanced Zoology and Biotechnology
9	Study tour to Delhi-Rishikesh- Haridwar	50	III B.Sc	Advanced Zoology and Biotechnology

### Training Programs participated by students

#### Department of Mathematics

S.No.	Programme	Participants	Venue
1	MiniMTTS (Mathematical Training & Talent Search) Programme – 2018	B. Vignesh	Sri Vasavi College, Erode

#### Department of Chemistry

S.No.	Programme	Participants	Venue
1	FDP programme on 'Quantum mechanics and its applications to chemistry	M.Gurumoorthy V.Indhumathi U.Nareshkumar	Women's Christian College, Chennai.
2	One day workshop on	S.Sathish Kumar C.Sudharsan	Department of Plant Biology and Plant Biotechnology, Guru

	Mushroom Cultivation	N.Yoganandhan J.Pugazhendi P.Vinod Kumar C.Akash S.P.Gowthaman P. Goverdan A.Dhanalakshmi V. Keerthana G.R.Bharathi, J. Diana V. Prabhu A.Siva prasanth R.Bharaathi S.Roshni M.Kulothungan	Nanak College.
3	National workshop on Mathematics in Sciences	J.Diana, V.Keerthana C.Sudharsan A.Dhanalakshmi S. Roshni N.Yoganandhan	Dept. of Mathematics, Guru Nanak college.
4	Spectroscopic Techniques in Chemistry-Dr.Kalsi	G.Anu S.Padmapriya B.Kumaran V.Vinoth	Dept. of Chemistry, Women's Christian College, Chennai.

**Department of Advanced Zoology and Biotechnology**

S.No.	Programme	Participants	Venue
1	One day workshop on Mushroom cultivation	Udhay Moharraj Gokul ManojVenillvan Prasanth Vijay Surender	Department of Plant Biology and Plant Biotechnology, Guru Nanak College
2	One day Workshop on Food Adulterants	Mr.Vigneshwaran Priyadharshini Vaibhav Swararaman Ramya Haripriya S.Rupasrilekha T.Vijitha Adhithyan	Department of Chemistry, Guru Nanak College

		Rishab Sriganapathy	
3	National workshop on Mathematics in Science	Ayushi Afsana Parveen Swati	Department of Mathematics, Guru Nanak College

### Training program attended by faculty members

#### Department of Mathematics

S.No.	Name of Faculty	Program	Venue	Duration
1	Mr.K. Muthuvel	Workshop on Pedagogical Knowledge of Mathematics (Teaching of Linear Algebra)	KSCSTE – Kerala School of Mathematics	24.03.2018- 26.03.2018
2	Mr.K. Muthuvel	Teachers Enrichment Workshop – “Galois theory & complex Analysis”	St. Berchmans College, Changanacherry, Kerala.	30.04.2018- 05.05.2018
3	Ms.J. Vaishnavi	Teachers Enrichment Workshop – “Galois theory & complex Analysis”	St. Berchmans College, Changanacherry, Kerala	30.04.2018- 05.05.2018
4	Ms.J. Vaishnavi	Teachers Enrichment Workshop on Algebra, Analysis and Topology of p-adic numbers	Institute of Mathematical Sciences, Chennai	21.05.2018- 26.05.2018
5	Mr. K. Muthuvel	Winter School – Refresher course in Mathematics – Batch XXXII	University of Madras	07.11.2017- 27.11.2017
6	Ms.J. Vaishnavi	Faculty Development Program on “Technical writing using LaTex”	Women’s Christian college, Chennai	18.02.2017

#### Department of Chemistry

7	Dr.R.M.Ezhilarasi	FDP on ‘Quantum mechanics and its applications to chemistry’	Dept. of Chemistry, Women’s Christian College, Chennai.	20.07.2018 & 21.07.2018
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8	Dr.P.Balu	FDP on 'Quantum mechanics and its applications to chemistry'	Dept. of Chemistry, Women's Christian College, Chennai.	20.07.2018 & 21.07.2018
9	Ms.T.Saroja	Workshop on 'Computational Chemistry and its applications'	DST-FIST in collaboration with Dept. of Chemistry, Stella Maris College, Chennai.	23.07.2018 & 24.07.2018
10	Ms.E.Prathibha	Workshop on 'Computational Chemistry and its applications'	DST-FIST in collaboration with Dept. of Chemistry, Stella Maris College, Chennai.	23.07.2018 & 24.07.2018
11	Dr.R.Rangasamy	Materials Characterization Workshop (MCW-2018)	Dept. of Chemistry, SRM Institute of Science & Technology, Kattankolathur.	26.07.2018 & 27.07.2018
12	Dr.R.Chitra	Refresher Course in Chemistry	University of Madras, Chennai.	23.08.2018 -12.09.2018
13	Dr.S.E.Noorjahan	Refresher Course in Chemistry	University of Madras, Chennai.	23.08.2018 -12.09.2018
<b><u>Department of Advanced Zoology and Biotechnology</u></b>				
14	Dr.M.G.Ragunathan	Awareness program about SALT	IIT, chennai	11.08.18
15	Dr.J.Jayanthi	Workshop on Fermentation and Bioprocess Technology	Department of Biotechnology, IIT, chennai	12.11.18
16	Faculty from all science departments	FDP	Layam Talent Academy Foundation, Chennai	01.06.2018 & 02.06.18

**List of Exhibitions / Seminars/ Training course conducted by the college**

S.No.	Exhibitions/seminars/training course	Department	Date	Beneficiaries
1	National Workshop on “Mathematics in Sciences”	Mathematics	25.3.2019	150
2	Demonstation on “Physics is Fun’ Dr.T S Natarajan Prof., IIT, Tiruppathi.	Physics	20.07.2019	100
3	Intercollegiate Physics Talent search	Physics	13.12.2018	251
4	Invited lecture on Lab Safety Issues	Chemistry	24.07.2018.	150
5	Invited Lecture - Elements	Chemistry	05.10.2018	100
6	Invited Lectures	Chemistry	19.12.2018	150
7	International Conference on Advanced Materials for Catalysis, Energy and Environment ICAMCEE-2019	Chemistry	21.02.2019 & 22.02.2019	200
8	Seminar on Clinical Research and Pharmacovigilance	Plant Biology and Plant Biotechnology	05.03. 2019	175
9	Workshop on Mushroom Cultivation	Plant Biology and Plant Biotechnology	06.03. 2019	50
10	Exhibition- Rice Varieties and Algal Varieties	Plant Biology and Plant Biotechnology	11-03.2019 & 12.03.2019	200
11	Talk about Fossils	Advanced Zoology and Biotechnology	07.08.2018	150
12	A Talent Scan Platform, Inter Collegiate Event	Advanced Zoology and Biotechnology	13.08.2018	100
13	PLEXUS – Intercollegiate Talent Scan Fest on 18.12.18	Advanced Zoology and Biotechnology	18.12.2018	275



14	National Seminar to commemorate Science Day	Advanced Zoology and Biotechnology	27.02.2019 & 28.02.2019	250
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**Name, Designation, Host institute of guest faculty invited**

S.No.	Name	Designation	Institute
<b><u>Dept. of Mathematics</u></b>			
1	Dr. K. Pandian,	Controller of Examinations	University of Madras
2	Dr. E. Arunan	Prof., Dept. of Inorganic and Physical Chemistry	Indian Institute of Science, Bengaluru.
3	Dr.G.Radhakrishnamacharya	Prof., Dept. of Mathematics	NIT, warangal
4	Dr. V. Rajkumar Dare	Former Head, Dept. of Mathematics	Madras Christian College, Chennai
5	Dr. G. Sethuraman	Professor & Head, Department of Mathematics	Anna University, Guindy, Chennai
6	Dr. P. Veeramani	Prof., Dept. of Mathematics	IIT, Chennai.
7	Dr. Ramesh Kasilingam	Assistant Professor	IIT Madras
8	Dr. S. Thirumagan	Principal, Hindustan College of Arts and Science,	Padur.
9	Dr. R. Rama	Asso.Professor	Quaid-e-Millath Government College for Women, Chennai
<b><u>Department of Physics</u></b>			
10	Dr.T. S. Natarajan	Professor and Registrar in charge	IIT, Tirupathi

11	Dr. S. Balakumar	Professor and Director	National Centre for Nano Science and Nano technology, University of Madras.
<b><u>Department of Chemistry</u></b>			
12	Dr.P.Wilson	Asso. Professor & Head	Dept. of Chemistry, Madras Christian College Chennai.
13	Dr.A.K.Mohana Krishnan	Asso. Professor & Head	Dept. of Organic Chemistry, Univ. of Madras.
14	Prof. Shu Pao Wu	Professor	NCTU, Taiwan
15	Dr. Sada Venkateswaralu	Asso.Professor	Gachon University, South Korea
16	Dr. Michel Wong Chi Man	Professor	Montpellier, France
17	Prof. P.Selvam	Professor	NCCR, IIT Madras
18	Dr.K.Selvaraj	Asso. Professor	NCL, Pune
19	Prof. Akilesh Verma	Professor	Univ. of Delhi
20	Prof.Ajayan Vinu	Professor	University of Newcastle, Australia
21	Dr.Thomas	Additional Director	CPRI, Bengaluru.
<b><u>Department of Plant Biology and Plant Biotechnology</u></b>			
22	Dr. S. Hemalatha	Prof. & Dean,	B.S. Abdur Rahman Crescent Institute of Science & Technology, Chennai
23	Dr. Ramesh Prabu	Medical Review Safety Physician	Accenture in India, Chennai
24	Dr. P. Raghu Babu	Deputy General Manager – Product Development	Cellbios Healthcare and Life Sciences Pvt. Ltd., Chennai
25	Dr. P. Arumugam	Director	Armats Biotex Research and Training Institute, Chennai.
26	Dr. Prem Kumar	Visiting Scientist	Department of Ecology, Stockholm University,

	.		Sweden.
27	Dr. S. Nagaraj	Assistant Professor	Centre for Advanced Studies in Botany, University of Madras.
28	Dr. Arul	Assistant Professor	Department of Botany Sri Vijay Vidhyalaya College of Arts and Science, Dharmapuri
29	Dr. Ketu Jervis Monah	Forest Creator	CommuniTREE, Cameroon, Africa.
30	Dr.B.Meenakumari	Chairperson	National Biodiversity Authority of India.
<b><u>Department of Advanced Zoology and Biotechnology</u></b>			
31	Dr.C. Muthamizhselvan	Director (ET)	SRM University Convener, Indian Science Congress Association, Chennai Chapter.
32	Dr. Satish Mokashe,	Associate Professor	Department of Zoology Dr. Babasaheb Ambedkar Marathwada University, Aurangabad,
33	Dr.Seshachalam Srinivasalu	Director	Institute for Ocean Management, Anna University, Chennai.
34	Dr. R.R.Deshmukh	Professor	Department of Computer Science & Information Technology, Dr. Babasaheb Ambedkar Marathwada University, Aurangabad
35	Dr. R.C. Satishkumar	Head, Drug Test Laboratory	SRM University, Kattankulathur.
36	Dr.N.Krishnakumar	Former Chairman	State Environment Impact Assessment Authority, Tamil Nadu.
37	Dr.A.K.Panigrahi	Principal Scientist	ICAR- CIBA, Chennai
38	Dr. M.Michael Babu	Assistant Professor	Centre for Marine Science & Technology, Manonmaniam Sundaranar University, Rajakkamangalam.

39	Dr.N. Arumugam	Former Principal	Vivekanada College, Kanyakumari
40	Dr.Vijayavel Kannappan	Principal Scientist	Regulatory Toxicology, Georgia Pacific Innovation Institute, U.S.A
41	Dr. Jayachandran	Director Research and Former Dean	Kerala University

### List of new Practical/Demonstrations introduced in departments during 2018-19

#### Department of Physics

1. Micro controller and its simple applications (Demonstration)
2. Determination of Magnetic properties – Residual magnetism, Coersivity using Hysteresis Apparatus.

#### Department of Chemistry

1. Polarimetry-(i) Determination of optical rotation of unknown solution  
(ii) Comparison of strength of two given acids
2. Determination of melting point of organic compounds.
3. Conductometric titrations involving acid and base.
4. Potentiometric titrations involving acid and base.
5. Determination of pH of water from various sources.

#### Department of Plant Biology and Plant Biotechnology

1. Sterilization techniques, Isolation, Identification and Culture of Microorganisms.
2. Maceration and study of wood Anatomy, Preparation of Semi-permanent and permanent slides (Demonstration)
3. Estimation of proteins/carbohydrates and pigments
4. Preparation of MS- medium Embryo culture Anther culture (Demonstration)
5. Isolation of Cell Organelles
6. Isolation of Phytochemicals from Vinca and Neem (Demonstration)

#### Department of Advanced Zoology and Biotechnology

1. Polytene chromosome analysis in Chironomous Larva
2. Taxonomical study of fauna
3. Bacterial culture using Nutrient agar and EMB agar.
4. Bacterial Gram's staining.

## Details of equipment purchased in each department from DBT grant

### Department of Mathematics

S.No.	Item
1	Desktop - Lenovo M720 Tower Core i5/4GB/1TB/19.5/DOS/3 Yrs Warranty
2	Printer - HP Laserjet M1005 MFP
3	10 KVA RPS Make Online UPS
4	12v/26AH Quanta Make SMF Battery
5	Kingston 64gb USB 3.0 Pendrive
6	Mouse Pads

### Department of Physics

S.No.	Item
1.	Travelling microscope advanced
2.	Cathode ray oscilloscope
3.	Two dial resistance box (0.1 and 1 ohm)
4.	Digital Balance acc 0.001 g Shimadzu make 220 g capacity
5.	Digital Balance acc 0.1 g make 220 g capacity
6.	Magnetic stirrer 1mL
7.	Two dial resistance box 10K and 1K
8.	Two dial capacitance box 0.1 and 0.1 $\mu$ F
9.	Battery eliminator 2 to 12 V, 2 Amp
10.	Lamp and scale
11.	Spot Galvanometer

## Department of Chemistry

<b>S.No.</b>	<b>Item</b>
1	Digital Conductivity meter with conductivity cell
2	pH meter portable
3	Polarimeter
4	Orbital Shaker
5	Desk top ice maker
6	Ice Flaker
7	Precision Gold balance with wind shield
8	Lenova M720 desktop Tower
9	HP Laser Jet M1005 MFP
10	Water Bath – Inlab 12 holes
11	Water Bath – Inlab6 holes
12	Spare Element for Heating Mantle 100 mL
13	Spare Element for Heating Mantle 250 mL
14	Spare Element for Heating Mantle 500 mL
15	Spare Element for Heating Mantle 1000 mL
16	Electric Bunsen Burner with regulator 350W
17	Melting Point Apparatus with Solid State control
18	Digital Photoelectric Colorimeter with 8 Filter
19	Unibloc Analytical Balance
20	Centrifuge Machine
21	Potentiometer digital Dual Channel with Magnetic Stirrer
22	Vacuum pump
23	Digital Visible spectrophotometer

**Department of Plant Biology and Plant Biotechnology**

<b>S.No.</b>	<b>Item</b>
1	Bacteriological Incubator steel chamber Capacity, 42 Litres
2	Autoclave, Aluminum, Steamless, Electric, 40 Ltrs. (Size approx. 14" Dia. X 16" H) Fully automatic
3	Digital Hot Air Oven (42 Litres)
4	44347 Tetra view LCD Digital Microscope to take photo of Anatomy and Cytolog
5	Microtome with Accessories
6	Micropipette (0.5-2 µl, 1-10 µl, 10-100 µl, 100-1000 µl) –Tarson
7	Digital balance- Precision gold balance PGB 220
8	Visible Spectrophotometer (Auto setting LMSP- V325)
9	Water bath with shaker (250 ml )
10	Electrophoresis Unit with kit
11	Canon Power Shot SX500 6353B001 16.0 MP Digital Camera with 30x Optical Zoom (Black)
12	250 ml Soxhlet Extractor Spherical Fat Extractor With 3 Bottle Lab Glassware
13	40X-2000x Siedentop trinocular compound microscope + 5MP digital camera SKU:T340B-5M
14	Light Microscope
15	Distilled water Plant 4 l/hr
16	Centrifuge R-12 C +
17	Thin layer chromatography
18	Compound Microscope
19	Ch-20i Olympus Binocular Microscope
20	Royal Scientific RSW 129 Tissue Homogenizer (Stirring Capacity: 25ml)
21	Delux model Dissecting microscope
22	Haemocytometer: German Chamber, RBC & WBC pipettes
23	UV Trans illuminator, UV- BLB Basic – Orange

24	Colony Counter- Orange
25	Digital pH meter LMPH-10
26	Vacuum Filters Assembling set

**Department of Advanced Zoology and Biotechnology**

<b>S.No.</b>	<b>Item</b>
1	Student Microscope HM-100
2	Binocular Microscope ch20i
3	Centrifuge, 16000RPM with Rotor Head, Model; TCH815D
4	Water Bath 12 holes with digital temp. Controller cum indicator. Model: EWB-E12
5	Electronic Balance 1mg acc. 200gms capacity
6	Digital pH meter, Microprocessor
7	Deep freezer (-18), 100 Lit.
8	Stage Micrometer
9	Ocular Micrometer
10	Electrophoresis Kit Complete with power supply
11	Incubator 455x455x455mm, with digital temp. controller
12	Distilled water Plant, 10Lit./ hr.
13	Single Door Fridge, 185Ltrs.
14	Double Door Fridge, 220 Ltrs.



## Details of books and journals subscribed from DBT grant

### Department of Mathematics

<b>S.No.</b>	<b>Title of the Book</b>	<b>Author</b>
1	A Course In Calculus And Real Analysis	Ghorpade
2	A First Course In Abstract Algebra 7/Ed	Fraleigh
3	A First Course In Statistics For Signal Analysis	Woyczynski
4	A Textbook Of Analytical Geometry Part I Two Dimensions	Pillay
5	A Textbook Of Analytical Geometry Part Ii -3 Dimensions	Pillay
6	Abstract Algebra 3/Ed	Dummit
7	Advanced Engineering Mathematics 10/Ed International Student Version	Kreyszig
8	Algebra And Trigonometry I Semester - Paper-1	Vittal
9	Algebra Vol I	Pillay
10	Algebra Vol Ii	Pillay
11	Allied Mathematics V/1	Duraipandian
12	Allied Mathematics Vol Ii	Duraipandian
13	An Introduction To Differential Geometry	Willmore
14	An Introduction To Fuzzy Control	Driankov
15	An Introduction To Multivariate Statistical Analysis 3/Ed	Anderson
16	An Introduction To Numerical Analysis 3/Ed	Prasad
17	An Introduction To Partial Differential Equation With Matlab 2/Ed	Coleman
18	An Introduction To Probability And Statistics 2/Ed	Rohatgi
19	An Introduction To Real Analysis	Bhat
20	An Introduction To The Mathematics Of Biology With Computer Algebra Models	Yeagers
21	An Introduction To The Theory Of Numbers 5/Ed	Niven
22	Analysis Of Time Series An Introduction,6/Ed	Chatfield
23	Applied Statistics With Spss	Huizingh
24	Business Mathematics	Vittal

25	Business Statistics And Business Mathematics	Gupta
26	Calculus	Vittal
27	Calculus And Co-Ordinate Geometry Of Two Dimension I Semester Paper 2	Vittal
28	Calculus Of Finite Differences And Numerical Analysis	Kandasamy
29	Calculus V/1	Naryanan
30	Calculus V/1	Apostol
31	Calculus V/2	Apostol
32	Calculus V/2	Narayanan
33	Calculus V/3	Narayanan
34	Complex Analysis	Pillay
35	Complex Analysis	Duraipandian
36	Complex Analysis 3/Ed	Ahlfors
37	Complex Analysis 4/Ed	Lang
38	Complex Variables And Applications 8/Ed	Brown
39	Contemporary Abstract Algebra 4/Ed	Gallian
40	Co-Ordinate Geometry Of 3 Dimensions & Probability Iii Semester Paper 6	Vittal
41	Differential And Integral Calculus V/1	Piskunov
42	Differential And Integral Calculus V/2	Piskunov
43	Differential Equations	Zill
44	Differential Equations	Gupta
45	Differential Equations Theory And Applications With Maple	Betounes
46	Discrete Mathematical Structures With Applications To Computer Science	Tremblay
47	Discrete Mathematics And Its Applications With Combinatorics And Graph Theory 7/Ed	Rosen
48	Discrete Mathematics With Applications	Koshy
49	Dynamics	Dharmapadam
50	Elements Of Real Analysis As Per Ugc Syllabus	Narayan
51	Examples And Theorems In Analysis	Walker
52	Excercises In Classical Ring Theory 2/Ed	Lam

53	Excercises In Modules And Rings	Lam
54	First Course In Calculus 5/Ed	Lang
55	Foundations Of Complex Analysis 2/Ed	Ponnusamy
56	Functions Of One Complex Variable 2/Ed	Conway
57	Fundamentals Of Mathematical Statistics	Gupta
58	Graph Theory With Applications To Engineering And Computer Science	Deo
59	Higher Algebra C048	Hall
60	Ibm Spss For Introductory Statistics	Morgan
61	Integral Calculus	Narayan
62	Introduction To The Theory Of Statistics 3/Ed	Mood
63	Introduction To Graph Theory 2/Ed	West
64	Introduction To Mathematical Statistics 7/Ed	Hogg
65	Introduction To Real Analysis 4/Ed	Bartle
66	Invitation To Graph Theory	Arumugam
67	Let Us C 15e	Kanetkar
68	Logic And Discrete Mathematics A Computer Science Perspective	Grassmann
69	Mastering C 2/Ed	Venugopal
70	Mathematica	Wolfram
71	Mathematical Analysis 6/Ed	Apostol
72	Mathematical Analysis For Economists	Allen
73	Mathematical Modelling With Case Studies Using Maple And Matlab 3/Ed	Barnes
74	Mathematical Statistics	Vittal
75	Mathematical Statistics With Applications 7/Ed	Miller
76	Mathematics Msc Entrance Examination For All Indian Universities	Khanna Editorial Team
77	Mechanics	Duraipandian
78	Methods Of Real Analysis	Goldberg
79	Modern Algebra	Arumugam
80	Numerical Methods	Balagurusamy

81	Numerical Methods Ma8491 (Regulations 2017) Iv Sem E.E.E., Civil	Balaji
82	Operation Research	Premkumar
83	Operations Research An Introduction 10/Ed	Taha
84	Operations Research Principles And Practices 2/Ed	Ravindran
85	Ordinary And Partial Differential Equations 2017	Raisinghania
86	Ordinary Differential Equation 4/Ed	Birkhoff
87	Plane Trigonometry Part 1 C046	Loney
88	Principles Of Mathematical Analysis 3/Ed	Rudin
89	Problems In Geometry	Berger
90	Problems In Operation Research Principles And Solutions Rev Edition	Gupta
91	Problems Plus In Iit Mathematics	Dasgupta
92	Programming In Ansi C 7/Ed	Balagurusamy
93	Quantitative Aptitude For Competitive Examinations Fully Solved	Aggarwal
94	Ramanujans Place In The World Of Mathematics	Alladi
95	Real & Complex Analysis 3/Ed	Rudin
96	Real Analysis	Howie
97	Real Analysis	Mittal
98	Real Analysis 4/Ed	Royden
99	Real Analysis A First Course 2/Ed	Gordon
100	S/O/S Complex Variables 2/Ed	Spiegel
101	S/O/S Programming With C 3\Ed	Gottfried
102	Spss In Simple Steps	Pandya
103	Statistical Methods	Gupta
104	Theory Of Ordinary Differential Equations	Coddington
105	Topics In Algebra 2/Ed	Herstein
106	Trigonometry For B.Sc Mathematics Major	Narayanan
107	Vector Algebra And Analysis	Narayanan

### Department of Physics

<b>S. No.</b>	<b>Title of the Book</b>	<b>Author</b>
1.	Allied Physics	Murugesan
2.	Digital Electronics & Microprocessor	Vijayendaran
3.	Electricity And Magnetism	Murugesan
4.	Elements of Properties of Matter	Ds.Mathur
5.	Fundamentals of Optics	Jenkins And White
6.	Fundamentals of Microprocessor 8085	Vijayendaran
7.	Heat And Thermodynamics	Briji Lal
8.	Integrated Electronics	Vijayendaran
9.	Mathematical Physics	Satyaprakash
10.	Mechanics	Ds.Mathur
11.	Modern Physics	Krane
12.	Modern Physics	Murugesan
13.	Numerical Methods	Khandasamy
14.	Optics And Spectroscopy	Briji Lal
15.	Practical Physics & Electronics	Vijayendaran
16.	Principles of Electronics	Vk Metha
17.	Principles of Physics	Walker
18.	Properties of Matter and Accoustics	Briji Lal
19.	Property of Matter	Vijayendaran
20.	Solid State Physics	So.Pillai
21.	Solid State Physics	Pkpalanisamy
22.	Text Book of Optics	Briji Lal
23.	The History of Astronomy	A.Clarke
24.	Thermal Physics & Statis .Mechanics	Vijayendaran
25.	University of Physics	Young

## Department of Chemistry

<b>S. No.</b>	<b>Title Of The Book</b>	<b>Author</b>
1.	5000 Solved Problems in Organic Chemistry	Bahl
2.	A Logical Approach to Modern Organic Chemistry	Singh
3.	A Textbook of Organic Chemistry 4e	Tewari
4.	A Textbook of Physical Chemistry 3/Ed Vol 5	Kapoor
5.	A Textbook of Physical Chemistry 6ed States Of Matter And Ions In Solutiion	Kapoor
6.	A Textbook of Physical Chemistry Applications Of Thermodynamics Vol 3 4/Ed	Kapoor
7.	A Textbook of Physical Chemistry Computatational Aspects In Physical Chemistry 3/Ed Vol 6	Kapoor
8.	A Textbook of Polymer Chemistry	Bhatnagar
9.	Advanced Inorganic Chemistry V/1	Gurdeep Raj
10.	Advanced Organic Chemistry	Bahl
11.	Advanced Physical Chemistry Vol Ii 3ed	Gurtu
12.	Advanced Physical Chemistry Vol-1	Gurtu
13.	Advanced Practical Inorganic Chemistry	Gurdeep Raj
14.	Analytical Chemistry	Sharma
15.	Bioorganic Bioinorganic And Supramolecular Chemistry 3e	Kalsi
16.	Chemical Thermodynamics Classical Statistical And Irreversible	Rajaram
17.	Conceptual Physical Chemistry	Bansal
18.	Concise Coordination Chemistry	Gopalan
19.	Concise Inorganic Chemistry 5/Ed	Lee
20.	Elementary Organic Spectroscopy Principles And Chemical Applications Multicolour/Ed	Sharma
21.	Elements Of Analytical Chemistry	Gopalan
22.	Environmental Chemistry 9 Ed	De
23.	Essentials Of Nuclear Chemistry Fourth Revised Edition	Arnikar
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25.	Fundamentals Of Molecular Spectroscopy 4/Ed	Banwell
26.	Fundamentals Of Organic Synthesis Vol 2 The Retrosynthetic Analysis	Kar
27.	Fundamentals Of Photochemistry 3/Ed	Mukherjee
28.	Heterocyclic Chemistry 5/Ed	Bansal
29.	Industrial Chemistry Including Chemical Engineering 263-21	Sharma
30.	Inorganic Chemistry	Purcell
31.	Megha Study Package Objective Chemistry	Aggarwal
32.	Modern Organic Chemistry	Jain
33.	Nuclear Chemistry Through Problems 2/Ed	Arnikar
34.	Organic Analytical Chemistry Theory And Practice	Mohan
35.	Organic Chemistry 1 Chemistry Organic Compounds	Bhakta
36.	Organic Chemistry 2 Chemistry Of Polymers And Biomolecules	Bhakta
37.	Organic Chemistry Lab Manual	Gnanapragasam
38.	Organic Chemistry Natural Products Vol 1	Agarwal
39.	Organic Chemistry Of Natural Products V/1	Chatwal
40.	Organic Chemistry Of Natural Products V/2	Chatwal
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42.	Organic Chemistry V/1 6/Ed	Finar
43.	Organic Chemistry V/2 5/Ed Stereochemistry And The Chemistry Of Natural	Finar
44.	Organic Chemistry For B.Sc I, II, III (S.Chands Success Guides) Questions And Answers	Madan
45.	Organic Name Reactions A Unified Approach	Brahmachari
46.	Organic Reaction Mechanisms 4/Ed	Ahluwala
47.	Organic Reactions And Their Mechanism 4/Ed	Kalsi
48.	Organic Spectroscopy Principles And Applications 2/Ed	Mohan
49.	Photochemistry And Pericyclic Reactions 4/Ed	Singh
50.	Physical Chemistry	Madan
51.	Physical Chemistry A Molecular Approach	Mcquarrie

52.	Physical Chemistry Quantum Chemistry And Molecular Interactions	Cooksy
53.	Physical Methods For Chemists 2/Ed	Drago
54.	Physical Methods In Inorganic Chemistry	Drago
55.	Polymer Science 2/Ed	Gowariker
56.	Practical Chemistry (For B.Sc. I, Ii And Iii Year Students)	Bajpai
57.	Principles Of Inorganic Chemistry 33/Ed	Puri
58.	Principles Of Physical Chemistry	Puri
59.	Problems And Their Solution In Organic Chemistry	Finar
60.	Quantum Chemistry	Mcquarrie
61.	Quantum Chemistry 4/Ed Revised	Prasad
62.	Quantum Chemistry Group Theory & Statistical Thermodynamics	Sebastian
63.	Quantum Chemistry Through Problems And Solutions	Prasad
64.	Reaction Mechanism In Organic Chemistry	Mukherji
65.	Satya Prakashs Modern Inorganic Chemistry	Madan
66.	Selected Topics In Inorganic Chemistry Revised Edition	Malik
67.	Solid State Chemistry	Gurtu
68.	Spectroscopy	Gurtu
69.	Spectroscopy	Kaur
70.	Spectroscopy Of Organic Compounds 7/Ed	Kalsi
71.	Ugc Csir Net/Set(Jrf & Ls) Chemical Sciences D494	Gupta

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<b>S.No.</b>	<b>Title Of The Book</b>	<b>Author</b>
1	A Laboratory Manual of Pharmacognosy	Sayeed Ahmad
2	A Manual of Poisonous Plants	L H Pammel
3	A Textbook of Algae	Chandrakant
4	A Textbook of Biochemistry	Mukhopadhyay
5	A Textbook of Biotechnology	Pm Philopose



6	A Textbook of Bryophyta	Rm Johri
7	A Textbook of Bryophytes,Pteridophytes Gymnosperms	A V S S
8	A Textbook of Immunology	P Madhavee Latha
9	A Textbook of Molecular Biotechnology	Ashok K Chauhan
10	A Textbook of Objective Microbiology	R M Aggarwal
11	A Textbook of Pharmacognosy	N Kumar
12	A Textbook of Pteridophytes	R M Johri
13	A Textbook of Taxonomy	Malhotra
14	Agricultural Biotechnology	Jain
15	Agricultural Growth in India Land Use Pattern Irrigation And	Ramayan Prasad
16	Agricultural Science at A Glance	Ashutosh Singh
17	Agriculture & Forest Biotechnology	Biswas Piramal
18	Agriculture Science	Sanjay Kumar
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20	An Introduction to Biostatistics	Gurumani
21	An Introduction to Bryophyta	A Rashid
22	An Introduction to Embryophyta	N S Parihar
23	An Introduction to Genetic Engineering 3/Ed	Nicholl
24	An Introduction to Pteridophyta	A Rashid
25	An Introduction to The Embryology of Angiosperms	P Maheswari
26	An Introduction to The Study of Cytology	L Doncaster
27	An Introduction to The Study of Embryology	Alfred C Haddon
28	Applied Biotechnology.	Kumar
29	Bacterial Genomics Genome Organization and Gene Expression	Aswin Sai Narain
30	Biochemistry 1st Ed	T A Brown
31	Biochemistry/Scientific	Che Chen
32	Biodynamic Agriculture	Ss Sandhu
33	Bioinstrumentation	L Veerakumari
34	Bios Instant Notes Biochemistry	David Hames

35	Bios Instant Notes Genetics	Hugh Fletcher
36	Bios Instant Notes Plant Biology	Andrew Lack
37	Biotech Informatics	Amit Kumar Jha
38	Biotechnology Theory & Technology	Parmeshwar
39	Botany Agricultural Applications	Rajender Singh
40	Botany For Degree Students	B P Pandey
41	Botany For Degree Students Biodiversity	B P Pandey
42	Botany For Degree Students Fungi (S Chand)	Anil Kumar
43	Botany For Degree Students Plant Anatomy And Embryology	B P Pandey
44	Botany For Degree Students Plant Ecology And Taxonomy (S	B P Pandey
45	Cell And Molecular Biology	Pragya Khanna
46	Cellular And Biochemical Sciences (I K International)	G Tripathi
47	Chemistry Of Natural Products Hb (Mjp Publishers)	Anand Solomon
48	Chordate Embryology	P S Verma
49	Comprehensive Biotechnology	K G Ramawat
50	Concepts Of Molecular Genetics	K P Singh
51	Economic Botany	Bp Pandey
52	Elementary Biochemistry	J L Jain
53	Environment And Ecology A Scientific Approach.	Anuj Kumar Rana
54	Environmental Biotechnology	Monika Jain
55	Environmental Studies	Ignacimuthu
56	Enzyme Technology	Anusha Bhaskar
57	Essential Experiments For Molecular Biology	Shuping Zhang
58	Essentials Of Biotechnology	Uihias K Patil
59	Essentials Of Genetics	Pragya Khanna
60	Ethnobotany	Dr M P Singh
61	Flora Of The Presidency Of Madras Set Of 3 Vols	J S Gamble
62	Food And Nutrition	Dr Meenakshi
63	Food Chemistry/Mjp	Alex V Ramani

64	Fundamentals Of Entomology And Plant Pathology	Louis L Pyenson
65	Fundamentals Of Enzyme Kinetics	A C Bowden
66	Fungi Their Nature And Uses	Cooke
67	Genetic Engineering / Dominant	Surendra Naha
68	Genetic Improvement Of Field Crop	Slafer
69	Genetics & Microbial Biotechnology	S Sridhar
70	Genetics Analysis Of Genes And Genomes	Daniel L Hartl
71	Genomes	S K Agarwal
72	Handbook Of Biochemistry	U N Panda
73	Handbook Of Genomics	Prabhakar Sharma
74	Introduction To Fungi	John Webster
75	Introduction To Mycology	Chelin Rani
76	Introduction To Pharmacognosy	Sayeed Ahmad
77	Laboratory Manual For Biotechnology	Ashish S Verma
78	Lewins Cells	George Plopper
79	Medical Entrance Objective Biology	Verma
80	Methods In Biotechnology	Schweitzer
81	Microbiology 4th Edition	Simon Baker
82	Modern Biotechnology A Glossary	Jayaram Reddy
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84	Monocot Weeds	Adikant Pradhan
85	Morphology Of Gymnosperms	Coulter And
86	Morphology Of The Angiosperms	Arthur J Eames
87	Nanotechnology (Pb)	S Shanmugam
88	Natural Resource Management	M P Singh
89	Paleobotany And The Evolution Of Plants	Wilson N Stewart
90	Pharmaceutical Biochemistry	Jayaveera
91	Pharmaceutical Biotechnology	Sreenivasulu
92	Pharmacognosy Part 2	Rumit M Shah

93	Phycology And Microbiology	Verma
94	Phytotoxicants	Shatrughna
95	Plant & Soil Science Fundamentals & Applications	S N Bhargav
96	Plant Anatomy	William Chase
97	Plant Biotechnology. Hb	Ritasingh
98	Plant Physiology Theory And Applications	Kochhar
99	Plant Tissue Culture Protocols In Plant Biotechnology	Kavyashree.R
100	Plant Virology	Hull
101	Plants And Microclimate	Hamlyn G Jones
102	Practical Food Microbiology	Dr J P Soman
103	Principles Of Plant Physiology	B P Nautiyal
104	Process Biotechnology Fundamentals 4th Ed	S N
105	Reproductive Biology Of Plants Quantitative Biology	Anwar Hussain
106	Rubber Plantation An Industrial Perspective	K Santhakumari
107	Taxonomy And Ecology Of Indian Fungi	K G Mukerji
108	Taxonomy Of Angiosperms	B P Pandey
109	Textbook Of Environmental Microbiology	Pradipta K
110	Textbook Of Microbiology/Ikf	Naveen Kanfo
111	Textbook Of Toxicology	Balram Pani

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<b>S. No</b>	<b>Title Of The Book</b>	<b>Author</b>
1	Animal Cell Biotechnology	G. Suhasini
2	Applied Immunology	G. Suhasini
3	Animal Physiology And Biochemistry	Wahied Khawar Balwan
4	Dictionary Of Genetics	Wahied Khawar Balwan
5	Animal Behaviour: Their Nature, Characteristics & Reactions	Harendra K. Gaur
6	Dictionary Of Fish & Fisheries	Pabba Shiva Krishna
7	Advances In Fisheries And Fish Production	Swati Shailendra Rawat
8	Laboratory Protocols For Molecular Biology & Biochemistry	Imtiyaz Yaseen

9	Practical Zoology: Invertebrate	H. S. Bhamrah
10	Practical Zoology: Vertebrate	H. S. Bhamrah
11	A Textbook of Biotechnology	Ghosh, Ranganathan & Narain
12	Immuno-Biotechnology	Naha & Narain
13	Handbook of Laboratory Animals	Abhijit Paintal
14	A Textbook of Laboratory Techniques	Goswami & Paintal
15	Handbook of Laboratory Instrumentation	Goswami, Paintal & Narain
16	A Textbook of Objective Microbiology	R. M. Aggarwal
17	Handbook of Entomology	Goswami & Patnaik
18	A Textbook of Economic Zoology	K.R. Ravindranathan
19	A Textbook of Comparative Anatomy Of Vertebrates	Raghvendra Puri
20	Veterinary Parasitology	P. Cherian & A. K. Patel
21	Structural Parasitology	M. Baker & Ashwani K. Patel
22	Parasitic Ecology	M. Baker & A. K. Patel
23	Parasitic Taxonomy & Phylogenetics	M. Baker & A. K. Patel
24	Applied Entomology	Anderson & Chauhan
25	Forensics Entomology	S.K. Chauhan & A. Abraham
26	Medical Entomology	A. Abraham & Chauhan
27	Ecological Entomology	Anderson & Chauhan
28	Fundamentals Of Entomology	Abraham & Chauhan
29	Aquatic Entomology	S.K.Chauhan & G. Anderson
30	Forest Entomology	S.Kumar & C.Thomson
31	Cellular Signalling & Physiological Implications	Mushtaq Beigh
32	Medical Parasitology	Philip Cherian & Ashwani K. Patel
33	Hb Of Disease Causing Microbes	Jaishree Paul
34	Simulation In Nanobiotechnology	Kilho Eom
35	Learning Bio Micro Nanotechnology	Mendelson
36	Integrative Organismal Biology	Martin

37	Molecular Cloning- 3 Vol Set	Sambrook
38	Biotechnology For Csir-Net, Set, Gate, Jnu, Aiims, Jam	Vinita Thakur
39	Applied And Developmental Biology	Arshed Iqbal Dar
40	A Textbook Of Molecular Biology	M.P. Arora & H. Arora
41	Ecology	Mohan P. Arora
42	Animal Physiology	Mohan P. Arora
43	Animal Behaviour	Mohan P. Arora
44	Modern Entomology	D.B. Tembhare
45	Practical Manual Of Modern Microbiology	Arup Kumar Mitra
46	Microbiology	Mohan P. Arora
47	General Microbiology (Volume I)	Powar
48	General Microbiology (Volume Ii)	Powar
49	Biodiversity Conservation Research And Management	H.K.Sahu, Seth
50	Evolutionary Biology	M.P. Arora
51	Cell Biology	C.B. Powar
52	Dna Technology	A D Sharma
53	College Zoology (Volume-I)	B.K. Lahiri
54	College Zoology (Volume-Ii)	B.K. Lahiri
55	Embryology	Mohan P. Arora
56	Essentials Of Cytology	C.B. Powar
57	Molecular Cell Biology	C.B. Powar
58	A Text Book Of Organic Evolution	Mohan P. Arora
59	Invertebrate Endocrinology	D.B. Tambhare
60	Principles Of Aquaculture S.B.	S.B. Zade, C.J
61	Practical Microbiology	Vinita Kale
62	Principles Of Immunology	N.V. Shastri
63	Genetics	Mohan P. Arora
64	Genetic Engineering	Mohan P. Arora
65	Biostatistics For Health And Life Sciences	Rao K. Surya

66	Biophysics	Mohan P. Arora
67	Advances In Biotechnology	S.N. Jogdand
68	Environmental Biotechnology (Industrial Pollution Management)	S.N. Jogdand
69	Bioinformatics (Theory & Practice)	N.J. Chikhale & V.S. Gomase
70	Cell Biology And Molecular Biology	Derobertis
71	Molecular Biology Of The Cell	Alberts
72	Principles Of Gene Manipulation	Primerose
73	Text Book Of Biotechnology	Dubey
74	Principles Of Genetics, 8ed	Gardner
75	Text Book Of Medical Physiology	Guyton
76	Microbiology	Presscott
77	Manual Of Zoology Vol-1(Part-2)	Ekambara Iyer
78	Manual Of Zoology Vol-2(Part-1)	Ekambara Iyer
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80	Modern Text Book Of Zoology-Invertebrate	Kotpal
81	Modern Text Book Of Zoology-Vertebrate	Kotpal
82	Biology Of The Invertebrates	Pechenik
83	Vertebrates-Comparative Anatomy	Kardong
84	Principles Of Systematic Zoology	Mayr
85	Encyclopedia Of Biological Control Of Insect & Pest	Alam
86	Concepts In Animal Genetics	Kumari
87	Ency Of animal Cell & Tissue Culture	Sharma.Ak
88	Ency Of Cell Biology & Biotechnologies	Sharma.Ak
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93	Environmental Biology	Bhatnagar
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