

# Progress Report

**1. Name of the College:** Saint Mary's College, Shillong

**2. Name of Departments supported:** Departments of Botany, Chemistry, Physics & Zoology

**3. List of Courses run by different participating departments:** Bachelor of Science (Honours & Pass Course)

**4. Faculty Profile of Participating Departments:**

## Department of Botany

Name & Qualifications	Designation	Specialization	Experience (in years)
Ms I.B.Kharsyntiew M.Sc.	Associate Professor, HOD	Microbial Ecology	33
Dr. (Ms) A.R.Laloo M.Sc. Ph.D.	Associate Professor	Ecology	28
Dr. (Ms) M.B.Tiwari M.Sc. Ph.D	Associate Professor	Microbiology	28
Dr. (Ms) S.Rynjah M.Sc. Ph.D.	Associate Professor	Ecology	26
Ms T.Syiemlieh M.Sc.	Assistant Professor	Microbial Ecology	12

## Department of Chemistry

Name & Qualifications	Designation	Specialization	Experience (in years)
Dr ( Ms ) B. Bhattacharjee M. Sc Ph. D	Associate Professor, HOD	Physical Chemistry	30
Dr ( Ms ) I. Nongkynrih M.Sc Ph. D	Associate Professor	Organic Chemistry	28
Ms. I. Dey M.Sc	Associate Professor	Physical Chemistry	20
Dr ( Ms ) P. Dey M.Sc Ph. D	Associate Professor	Organic Chemistry	15
Mr. M. Sawkmie M.Sc	Assistant Professor	Organic Chemistry	6

### Department of Physics

Name & Qualifications	Designation	Specialization	Experience (in years)
Dr. (Mrs) E.M.L. Buam, M.Sc. Ph.D	Associate Professor, HOD	Experimental & Theoretical Nuclear Physics	28
Mrs. R.Das, M.Sc	Associate Professor	Theoretical Nuclear Physics	28
Dr.(Mrs) B.Dey, M.Sc. Ph.D.	Associate Professor	Theoretical Nuclear Physics	16
Mr. C.Synrem, M.Sc. NET	Assistant Professor	Theoretical Nuclear Physics	6
Ms. D.War, M.Sc.NET	Assistant Professor	Theoretical Nuclear Physics	2

### Department of Zoology

Name & Qualifications	Designation	Specialization	Experience (in years)
Ms. A. P. Shabong M.Sc	Associate Professor, HOD	Cytogenetics	30
Dr ( Ms ) N.Mishra M.Sc, Ph.D	Associate Professor	Biochemistry & Parasitology	28
Ms M.R. Jyrwa M.Sc M.Phil.	Associate Professor	Limnology	18
Ms Y. Nongrum M.Sc NET	Assistant Professor	Cell Biology & Immunology	3
Mr. L. Marbaniang M.Sc NET	Assistant Professor	Cell Biology & Immunology	3

#### 4. Admission into B.Sc. courses in participating departments:

Saint Mary's College gives equal opportunities to students irrespective of caste, creed or religious backgrounds. The admission policy followed by the college is in accordance with the norms set by the university to which it is affiliated. The college makes special provisions to admit students from remote challenged regions of the North East and to first generation learners. As per the University norm, the students are permitted to opt for honours in a subject provided they secured 45% in the subject or 50% aggregate at the qualifying examinations.

**(i) 2012-13 academic session:**

Departments	Cut off % for admission	No. of students admitted	% of result	Position in University	No. of drop out students
Botany	45%	28	100%	Nil	-
Chemistry	45%				-
Physics	45%	14	100%	Nil	-
Zoology	45%	30	100%	3	-

**5. Activities carried out during the 2012-13(department wise):**

**A) Student activities:**

**Department of Botany:**

- i. Summer school/ winter school- Trolian Mawlong, B. Sc Final Year attended winter school organized by Science Department, Lady Keane College, Shillong from 29<sup>th</sup> November, 2012 to 13<sup>th</sup> December, 2012.
- ii. Industrial visit- NIL
- iii. List of project taken by students-
  - a. B. Sc 1<sup>st</sup> year (Honours) students belonging to different states; Assam, Meghalaya, Manipur collected ethno-botanical specimens of plants used by the locals as medicine, food, etc.
  - b. B. Sc 2<sup>nd</sup> year students visited several farms and gardens in and around Shillong to collect specimens of diseased plants, to have an idea of the common diseases affecting plants in this area.
  - c. B. Sc 2<sup>nd</sup> year students also collected herbarium specimens found in and around Shillong to study the diversity of plants available in this area.

**Department of Physics:**

- Summer school – Students of B.Sc. III Year Honours participated in a 6 day summer school on ‘Welding Technology ‘ organized by the Department of physics Lady Keane College in collaboration with Indian Welding Society New Delhi & IGNOU Institute for Vocational Education and Training Shillong, held from 28.5.2012 to 2.6.2012.

- A departmental seminar was organized on the 1<sup>st</sup> December 2012 in which Honours students made their presentations.
- Industrial Visit – An exposure trip for the students was organized to North East Space Application Centre Umiam on the 5<sup>th</sup> December 2012.

**Department of Zoology:**

Activities	Class	Purpose	Resource Person(s)	Date of visit
Visit to Sericulture Farm	B.Sc. Final Year	To study the method of Rearing of silk moth and extraction of silk	Mr. M.Laso, Sericulture Research Officer Ms. Nichi Sangma, Farm Manager Mr.B.E. Pale, Data Collector	12.11.12 & 5.7.13
Visit to Animal Husbandry & Veterinary Dept., Govt. of Meghalaya	B.Sc. Final Year	To study the diseases that affect livestock	Dr. J. Langstang, Asst. Director (Disease Investigation) Dr. B Dkhar Dr. Blah Dr. Passah	18.6.13
Visit to Biotech Hub, Synod College, Shillong	B.Sc. Second & Final Year	Understanding the Basic Concepts of Biotechnology & Demonstration of PCR	Dr. R. M. Lyngdoh	7.6.13
Visit to Hatchery Unit, Dept. of Fisheries, Mawpun, Govt. of Meghalaya.	B.Sc. Final Year	Demonstration of Induced Breeding in Carps	Mrs. P.Phawa, Research Officer.	3.7.13

**B) Teachers activity:**

### **Department of Botany:**

- i. The faculty of the department attended Faculty training and motivation and adoption of school and colleges by CSIR Labs organized by CSIR-NEIST (North East Institute of Science & Technology) Jorhat at St. Edmund's college, Shillong, Meghalaya on 21<sup>st</sup> – 22<sup>nd</sup> March, 2013 was attended by;
- ii. Teachers attended the National Seminar “ Burning Environmental issues risk to Biodiversity & human health with special reference to North East India” held in St. Mary's College, Shillong on 15<sup>th</sup> & 16<sup>th</sup> May, 2013
- iii. Teachers attended the Youth Development Seminar held in St. Mary's college, Shillong during the Platinum Jubilee celebration on 6<sup>th</sup> June, 2013
- iv. Teachers attended the “Workshop on Instrumental Techniques and their applications” conducted by Chemistry Department, St. Mary's college, Shillong on the 15<sup>th</sup> of July, 2013

### **Department of Physics:**

#### **i) Workshop, seminar conducted/attended:**

- The faculty members of the department attended an International Workshop on “ Improving the quality of assessment and evaluation of students at higher education on the 30<sup>th</sup> and 31<sup>st</sup> October 2012.
- All the teachers of the department attended the workshop conducted under “ Faculty Training & Motivation & Adoption of Schools & Colleges by CSIR Labs” organized by CSIR – North East Institute of Science and Technology, Jorhat on 27 & 28 November 2012.
- Mr. C. G. Synrem and Ms. D. A. War attended the summer School on ‘Welding Technology’ organized by the Department of physics Lady Keane College in collaboration with Indian Welding Society New Delhi & IGNOU Institute for Vocational Education and Training Shillong, held from 28 – 5 – 2012 to 2 – 6 – 2012.
- The teachers of the Department attended the National Seminar on Burning Environmental Issues: Risk To Bio diversity and human health with special reference to North East India held at Saint Mary's College , Shillong on 15<sup>th</sup> and 16<sup>th</sup> May, 2013
- A workshop on ‘ Use of simple Medical Physics instruments’ was held in the department on the 15<sup>th</sup> July 2013 for all the degree honours students. The resource persons were trained from CMC medical college Vellore. Thirty-five students have attended the workshop.

## **ii) Training course conducted/attended :**

- Miss D. A. War attended an Orientation Course at UGC ASC North Eastern Hill University from the 4<sup>th</sup> February to the 3<sup>rd</sup> March 2012.
- Mr. C. G. Synrem completed a Refresher Course in Physics at UGC ASC North Eastern Hill University from the 5<sup>th</sup> June to the 25<sup>th</sup> June 2013.

## **Department of Zoology:**

Workshop/Seminar conducted/attended:

- Mr. L. Marbaniang attended the summer school organized by Academic Staff College, NEHU, Shillong from 22nd August to 11th September, 2012.
- The faculty of the department attended a two-day workshop organized by NEIST, Jorhat, Assam on 21 - 21.3.13.
- The faculty of the department organized a two-day national Seminar on, 'Burning Environmental issues: Risk to Biodiversity and Human health with special reference to N.E. India' on 15-16.5.13.
- Mrs. A.P. Shabong & Dr (Mrs) N. Mishra attended a programme to commemorate World Biodiversity day organized by Meghalaya Biodiversity Board & Dept. of Forests & Environment, Govt. of Meghalaya on 22.5.13.
- The faculty attended the Youth Development Seminar held in St. Mary's college, Shillong during the Platinum Jubilee celebration on 6<sup>th</sup> June, 2013

## **6. Advisory committee meeting:**

A) Constitution of Advisory Committee: 12.09.12

### **Advisory Committee**

**Chairperson:** Dr. (Sr) Mary Harriet, Principal, Saint Mary's College.

**Overall Coordinator:** Mrs. Aiom P Shabong, Head of Department of Zoology.

**DBT Representatives:** i) Dr. Suman Govil, Adviser, HRD Division, DBT, New Delhi.

ii) Dr. Padma Singh, Scientist C, DBT, New Delhi

**External Experts:** i) Dr. N.Saha, Professor, HOD, Department of Zoology, NEHU, Shillong

ii) Dr. S.R.Joshi, Associate Professor, Department of Biotechnology, NEHU.

**Department Coordinators:**

Botany: Mrs I.B. Kharsyntiew, HOD

Chemistry: Dr B. Bhattacharjee, HOD

Physics: Dr E.M.L Buam, HOD

Zoology: Dr N.Mishra

**Faculty Members:**

Botany: Dr A.R.Laloo, Dr M.Tiwari, Dr S.Rynjah, Mrs T.Syiemlieh

Chemistry: Dr I.Nongkynrih, Ms I.Dey, Dr P.Dey, Mr M. Sawkmie

Physics: Mrs R.Das, Dr B. Dey, Mr C. Synrem, Ms D.War

Zoology: Mrs M.R.Jyrwa, Mrs Y.B.Nongrum, Mr L Marbaniang

**B) Advisory committee meeting conducted after implementation of scheme: if yes please give the dates and enclose the minutes:**

**7. List of New Practicals/demonstrations introduced for UG students of each batch ( Ist, IInd and IIRD year):**

Being affiliated to North Eastern Hill University (NEHU), the college is bound by the rules and regulations of the said University. The Under Graduate curriculum is implemented by the Board of Under Graduate Studies (BUGS) constituted by the said University. Two members of BUGS are college teachers. The University seeks the participation of the college teachers while designing the UG curriculum. The curriculum was last revised in 2009.

Currently, the University conducts UG courses under the annual academic system. As per UGC directive the semester system is expected to be introduced in the year 2014. Upon request by the University, the faculty of the college have been working together with the members of BUGS to

design a new curriculum. In this respect, new practicals have been proposed for consideration by BUGS, NEHU.

**8. Number of students taking project vs. total number of students. Please give list of projects department-wise during the support period.**

Student projects are assigned by concerned departments only to respective honours students. Simple projects are assigned to students either on a group or individual basis.

**Department of Physics:** Computational methods for evaluation of Matrices and their Applications

**Department of Zoology:**

Projects	Topic	Class/Name of Student	Date of Submission
Group project	Silkworm Rearing	B.Sc. Final Year students	Dec.2012
Individual projects By B.Sc. Final Year students	i) DDT and its effects ii) Mycoplasma Pneumonia iii) Huntingtons chorea iv) Ecological importance of wetlands v) Disorders of Pancreatic endocrine function vi) Prions vii) Living Healthy with asthma viii) Programmed cell death ix) ADD (Attention Deficit Disorder) x) Fish Farm Management	i) Pinky Sultana ii) Genevieve Lakadong iii) Euginia Syiemlieh v) Minee Bhuyan v) Silvary Khongjah vi) Linda Sailo vii) Aitihun Myrthong viii) Vanlaldusaki ix) Suzie M. Nongbet x) Lanangaibiang Thabah	Nov. to Dec. 2012

## **9. Interdepartmental activities:**

- i) Department of Botany and Department of Zoology hold annual programmes on 5th June to commemorate World Environment Day.
- ii) Departments of Botany, Chemistry, Zoology and Geography organized a National Seminar on, " Burning Environmental Issues: Risk to Biodiversity and Human health with special reference to North East India" on 15th-16th, May 2013.

## **10. Qualitative improvements due to DBT support (Please highlight 5 salient lines):**

Significant improvements in the field of imparting quality education and training to the students have been achieved upon receiving DBT support. Some improvements may be listed as follows:

- The grant has enabled the participating departments to procure new equipments which have effectively improved the 'hands on' experimental work of the students thereby promoting critical thinking in them.
- The books purchased under this scheme have enriched the departmental libraries which provided quick and easy access of students to reading materials.
- The improvement of IT facilities in participating departments have motivated students and teachers to optimize their learning capabilities.
- The grant enabled the departments to conduct exposure programmes of students to various Research Laboratories. This purpose recommended by DBT has helped the faculty in establishing contacts with the scientists and enriched quality learning experiences of the students as well as teachers.
- Guest Lectures/Workshops/ Field trips etc conducted by departments have greatly helped to promote innovative thinking in students as well as faculty.

In a nutshell, the funds supported under the Star College Scheme have broken the financial barriers imposed upon the departments by the existing budget of the institution. The DBT grant have afforded much relief to the departments. The support have significantly enriched and improved the infrastructure of the laboratories and the participating departments were able to conduct various exposure programmes which have effectively strengthened the learning process of its students as well as generated in them an active interest in the subject.

## **11. Strengths and weaknesses of each department (3 each):**

### **Department of Botany:**

Strengths:

- Excellent teaching faculty, who are committed and dedicated
- Department get 100% pass results every year
- Good relationship between faculty and between faculty and students

Weaknesses:

- Lack of space
- Shortage of time to finish the syllabus
- Due to shortage of time, detailed projects taking minimum 6 months cannot be carried out

### **Department of Physics:**

Strengths:

- The Department consists of qualified, experienced and dedicated teachers
- The department has improved infrastructure
- The Department has built up good linkages with renowned scientific institutions and highly resourceful physicists all over India. The Department being in a college affiliated to the University (NEHU), is abreast with the progress of the subject even in the research level of the University

Weaknesses:

- The intake quality of the students is generally quite poor but since the objective of the department is to encourage more students to opt for core sciences the department has to carry on with this weakness.

### **Department of Zoology:**

Strengths:

- Qualified, Dedicated and committed faculty
- Well-equipped laboratory
- The department achieves 100% pass percentage with positions in the merit list on examinations conducted by the University.

Weaknesses:

- Physical space constraints
- Vast curriculum
- Limited hostel accommodation for students and lack of transport facility for exclusive conveyance of students and staff of the college.

**12. Problems faced if any, in implementing of the programme and utilization of DBT grant (in two -three lines):**

- Due to lack of industries located in N.E. India and tight schedule of the academic calendar, the participating departments face challenges to conduct exposure programmes of students to relevant industries.
- As manufacturers of laboratory equipments are located outside N. E. India, the local suppliers takes several months to provide the required equipments.

**13. DBT grant utilization :**

**A.Non-Recurring:**

**Department of Botany:**

Sl. No.	Equipments	Model	Quantity	Cost	Total cost & VATS	Date of order placed	Date of purchase /install
1	Students monocular microscopes	HSA	10	85000.00	151386.00	21.12.2013	19.4.2013
2	40x objective	HAS/ HB	10	16880.00			19.4.2013
3	Dissecting microscopes with special eye lens	DM4	20	31500.00			14.3.2013

4	Vertical autoclave dimension 250x450 mm	NSW	1	73034.00	82894.00	21.3.2013	8.3.2013
5	Double distillation unit with auto cut off design	425/10	1	25317.00	28735.00	21.12.2013	17.6.2013
6	Haemocytometer	-	5	14000.00	15890.00	21.12.2013	17.6.2013
7	Camera (DSLR)	EOS1100 D	1	38990.00	40140.00	21.12.2013	17.6.2013
8	UV- filter	EOS1100 D	1	1150.00			
9	Desktop with monitor	HP-P-21403	1	30005.71	95356.00	7.2.2013	20.3.2013
10	HP Laptop with case	96-2204TX	1	35238.10			
11	Printer (Laser jet)	M1536-DNF	1	23380.95			
12	UPS INTEX	600 VA	1	2190.48	73775.00	21.12.2012	21.3.2013
13	LCD Projector	EB-X 02	1	37000.00			
14	CCD camera	EB-X 02	1	28000.00			
<b>TOTAL</b>					<b>488176.00</b>		

**Books:**

Sl. No.	ISBN	Title	Author	Publisher	Qty	Rate	Dis. %	Amount
1	9788177540949	Plant Physiology: Fundamentals & Applications	Kumar, A	AGRO	1	1800.00	0.00	1800.00
2	9788177544589	Laboratory Manual of Plant Physiology, Biochemistry & Ecology	Akhtar, I	AGRO	1	595.00	0.00	595.00

3	978817754056 7	Plant Breeding: Theory & Techniques	Gupta, S.K	AGRO	1	1200.00	0.00	1200.00
4	978935030039 8	Genetics & Plant Breeding	Agarwal, V	OXFORD -ABD	1	1625.00	0.00	1625.00
5	978817754172 2	Agro's Colour Atlas of Medicinal Plants	Purohit, S.S	AGRO	1	1595.00	0.00	1595.00
6	978007048667 6	Principles of Genetics	Tamarin	TMH	1	740.00	0.00	740.00
7	978818030304 3	Modern College Botany (3 vols.)	Mohanka, R	CAMPUS BOOK	1	5500.00	0.00	5500.00
8	978818030154 4	Taxonomy of Angiosperms (2 vols.)	Vardhana, R	CAMPUS BOOK	1	3500.00	0.00	3500.00
9	978818030218 3	T. B. Of Botany (4 vols.)	Singh, M.P	CAMPUS BOOK	1	8000.00	0.00	8000.00
10	978817754117 5	Cell Biology: Fundamentals & Applications	Gupta/Jangir	AGRO	1	1800.00	0.00	1800.00
11	81772332556	Perspectives in Biotechnology	Reddy, S.M	SCIENTIFIC	1	1200.00	0.00	1200.00
12	978817019470 5	Latest Approaches in Pollen Biology & Reproduction	Raju, A.J.S	DAYA-TODAY	1	795.00	0.00	795.00
13	978813110208 4	Biogeography	Mehtani, S	COMMO N-WEALTH	1	1950.00	0.00	1950.00
14	978817754395 7	Biochemistry: Fundamentals & Applications	Purohit, S.S	AGRO	1	1500.00	0.00	1500.00
15	978818923364 8	Sacred Forest: Their Ecology	Pandey, H.N	DAYA	1	700.00	0.00	700.00

		& Diversity						
16	978938019998 6	T.B. of Plant Anatomy	Saxena, P	WISDOM (DOMI)	1	1195.00	0.00	1195.00
17	978817754353 7	Modern Plant Pathology	Dube, H. C	AGRO	1	1200.00	0.00	1200.00
18	978818947384 6	Embryology	Kaushik, R	OXFORD -ABD	1	1300.00	0.00	1300.00
19	978818947345 7	Biotechnology: Fundamentals & Applications	Ganguli, A	OXFORD -ABD	1	950.00	0.00	950.00
20	978938108470 0	Advanced Plant Geography	Dube, S.M	SWASTI K	1	850.00	0.00	850.00
21	978818293024 7	Principles of Paleobotany	Bora, L	MITTAL	1	950.00	0.00	950.00
22	978817910363 0	Plant Tissue Culture & Applied Plant Biotechnology	Kumar, R	AAVIS	1	2200.00	0.00	2200.00
23	978817902154 1	Medicinal Plants of North East India	Islam, M	AAVIS	1	600.00	0.00	600.00
24	978817132623 5	Ethnic Tribes & Medicinal Plants	Trivedi, P.C	POINTER	1	1600.00	0.00	1600.00
25	978817910156 8	Biotechnology & Biology of Plants	Trivedi, P.C	AAVIS	1	2000.00	0.00	2000.00
<b>TOTAL</b>					<b>25</b>	<b>38543.00</b>		

**Department of Physics:**

S.	Equipment Name	Quantity	Cost (inclusive)	Date of order	Purchase/install
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No.	(Model)		of VAT)	placed	
1	Hytek Torsion Pendulum	1	3575.25	21/12/2012	2/4/2013
2	Hytek Capillary tube apparatus	1	2837.5	21/12/2012	2/4/2013
3	Hytek Dip Circle	1	1589	21/12/2012	2/4/2013
4	Omega Deflection & Vibration Magnetometer, ES-305	1	5107.5	21/12/2012	2/4/2013
5	Hytek P. O. Box	1	23948.5	21/12/2012	2/4/2013
6	Hytek Mirror Galvanometer	1	7093.75	21/12/2012	2/4/2013
7	Omega Tangent Galvanometer TG-192	1	2497	21/12/2012	2/4/2013
8	Hytek Pulinger's linear expansion apparatus	1	3461.75	21/12/2012	2/4/2013
9	Omega Fresnel's Biprism apparatus ES - 283	1	18273.5	21/12/2012	2/4/2013
10	OMEGA Young's Modulus of glass by Cornu's method ES262	1	13075.125	21/12/2012	2/4/2013
11	Omega Determination of Planck's Constant ES 214	1	16968.25	21/12/2012	2/4/2013
12	OMEGA Zener Diode characteristics	1	7178.875	21/12/2012	2/4/2013

	ETB 245				
13	OMEGA Decade Audio Frequency apparatus AO 301	1	7207.25	21/12/2012	2/4/2013
14	Omega AC Milli Voltmeter ACV 25	1	6787.3	21/12/2012	2/4/2013
15	OMEGA semiconductor diode Characteristics ETB 68	1	6787.3	21/12/2012	2/4/2013
16	OMEGA Bread Board BBS 103	3	4767	21/12/2012	2/4/2013
17	Diamond B. P. Apparatus	1	2689.95	21/12/2012	2/4/2013
18	Diamond Stethoscope, dual	1	794.5	21/12/2012	2/4/2013
19	WENSAR Digital Precision balance PGB 300	1	9647.5	21/12/2012	2/4/2013
20	Kater's Reversible pendulum (Besto)	1	2553.75	21/12/2012	21/02/2013
21	Compound Bar Pendulum (Besto)	1	1180.4	21/12/2012	21/02/2013
22	Jaeger's surface tension apparatus (Besto)	1	2383.5	21/12/2012	21/02/2013
23	Carey-Foster's Bridge (Omega)	1	1912.475	21/12/2012	21/02/2013
24	Lee's & Charlton's Conductivity apparatus(Besto)	1	5209.65	21/12/2012	21/02/2013

25	Determination of J by Callendar & Barne's method (Omega)	1	8288.905	21/12/2012	21/02/2013
26	Dispersive power of a plane transmission diffraction grating (Omega)	1	17853.55	21/12/2012	21/02/2013
27	Melde's experiment by using electrically maintained tuning fork (Omega)	1	7906.41	21/12/2012	21/02/2013
28	De-Sauty bridge (Besto)	1	14698.25	21/12/2012	21/02/2013
29	Series & Parallel Resonance LCR kit (Besto)	2	7718	21/12/2012	21/02/2013
30	LDR Characteristics (Besto)	1	4131.4	21/12/2012	21/02/2013
31	Integrating, Differentiating & Clamping circuits (Omega)	1	4208.58	21/12/2012	21/02/2013
32	Determination of energy gap in semiconductor diode (Omega)	1	5866.815	21/12/2012	21/02/2013
33	Two stage RC Coupled transistor amplifier (Omega)	1	3443.59	21/12/2012	21/02/2013
34	Transistor characteristics of CE, CB, CC & transfer	1	6333.3	21/12/2012	21/02/2013

	characteristics (Besto)				
35	Desktop Computer HP P-2 1403	3	94,518.60	7/2/2013	12/3/2013
36	Laptop Computer HP G6-2204TX	1	37000	7/2/2013	12/3/2013
37	Printer HP Laserjet m1536 DNF	1	24550	7/2/2013	12/3/2013
38	UPS 600 VA	3	6900.012	7/2/2013	12/3/2013

### BOOKS

Sl. No	Name of the book	Author	Publication house	No. of copies	Price
1	3000 solved Problems in Physics. Schaum's Outlines	Alvin, Halpern	TataMcgraw	1	599
2	A textbook of Optics	Briilal, Subrahmanvam, M. N.	S. Chand	1	375
3	A textbook of Practical Physics	Samir Kumar Ghosh	NCBA	1	235
4	A treatise of General Properties	H. Chatterjee & R. Sengupta	NCBA	1	650
5	Advanced Practical Physics	Chattopad ya y .Rakshit	NCBA	1	350
6	Advanced Practical Physics Vol-	B. Ghosh, Mazumdar	Sreedhar Pubn	1	260
7	Advanced Practical Physics Vol-	B. Ghosh	Sreedhar Pubn	1	200
8	An introduction to mechanics	Kleppner & Kolenkow	Tata Mcgraw	1	399
9	Modern Atomic & Nuclear	A.B. Gupta & Dipak Ghosh	Books & Allied	1	525
10	Atomic and Nuclear Physics	Brijlal, Subrahmanyam	S. Chand	1	165
11	Atomic Physics	S. N. Ghoshal	S. Chand	1	250
12	B. Sc Practical Physics	C. L. Arora	S. Chand	1	310
13	B. Sc Practical Physics	Harnam Singh,Hemne	S. Chand	1	425
14	Basic Electronics	o.c Tayal, V. Tayal	Himalaya Pubn.	1	410
15	Basic Electronics: Solid state	B. L. Theraja	S. Chand	1	440
16	Basic Nuclear	B. N, Srivastava	PragatiPrakashan	1	235
17	Classical mechanics	G. Arulldhas	PHI	1	275
18	Classical mechanics	Goldstein, Poole, Safko	Pearson	1	550
19	Classical mechanics	Herbert Goldstein	Narosa	1	310
20	Classical mechanics	J.c. Upadhyaya	Himalaya Pubn.	1	350
21	Classical mechanics	Satya Prakash	Kedarnath RamNath	1	260
22	Computer Programming in	V. Rajaraman	PHI	1	195
23	Concepts of Modern Physics 6th	Arthur Beiser, Mahajan, S. Rai	Tata Mcgraw	1	410
24	Concepts of Nuclear Physics	B. L. Cohen	Tata Mcgraw	1	235
25	Concepts of Physics Vol-1	H. C. Verma	Bharati Bhawan	1	268
26	Concepts of Physics Vol-2	H. C. Verma	Bharati Bhawan	1	268

27	Electricity and electronics	D. C. Taval	Himalaya Pubn.	1	390
28	Electromagnetics	B. B. Laud	New Age	1	200
29	Elements of Properties of Matter	D. S. Mathur	S. Chand	1	295
30	Elements of Quantum mechanics	Kamal Singh,S.P. Singh	S. Chand	1	110
31	Elements of solid state physics	J.P. Srivastava	PHI	1	350
32	Elements of Spectroscopy	Gupta,Kumar,Sharma	Pragati Prakashan	1	295
33	Foundations of Electromagnetic	J.R. Reitz, F. J Milford & R. W.	Narosa	1	280
34	Handbook of Electronics	Gunta. Kumar	Pragati Prakashan	1	625
35	Heat & Thermodynamics 7th	Zemansky, Dittman	TataMcgraw	1	395
36	Heat, Thermodynamics and	Briilal. Subrahmanvam. Hemne	S. Chand***	1	450
37	Introduction to Electrodynamics	D. J. Griffiths	PHI	1	275
38	Introduction to Mathematical	Charlie Harper	PHI	1	157
39	Introduction to Solid State	Charles Kittel	Wise. Wiley	1	449
40	Laser & Non linear optics	B. B. Laud	New Age	1	165
41	Mathematical Physics	Binov Bhattacharya	NCBA	1	735
42	Mathematical Physics	H. K. Dass	S. Chand	1	495
43	Mechanics	D. S. Mathur revised edn.	S. Chand	1	395
44	Modern Physics	R. Murugesan	S. Chand	1	525
45	Nuclear Physics	Irvine Kaplan	Narosa	1	230
46	Nuclear Physics	S. N. Ghoshal	S. Chand	1	425
47	Physics 5th Edn. Vol-1	Resnick.Halliday.Krane	Wiley	1	480
48	Physics 5th Edn. Vol-2	Resnick.Halliday.Krane	Wiley	1	529
49	Physics for Degree Students BSc	C. I. Arora	S. Chand	1	370
50	Physics for Degree Students BSc	C. I. Arora.P.S. Hemne	S. Chand	1	375
51	Advanced Practical Physics	S. P. Singh	PragatiPrakashan	1	200
52	Advanced Practical Physics	S. P. Singh	PragatiPrakashan	1	120
53	Principles of Electronics 7th edn.	V.K. Mehta. R. Mehta	S. Chand	1	395
54	Quantum mechanics	G. Aruldas	PHI	1	295
55	Quantum mechanics. statistical	D. Chattopadhyay. P. C. Rakshit	S. Chand	1	195
56	Quantum Physics	Stephen Gosioroveicz	Wiley	1	419
57	~S Outline series: Vector	Murray R Sniiegel	TataMcgraw	1	415
58	Solid State Physics	A. J. Dekker	Macmillan	1	325
59	Solid State Physics 5th Edn	S. O. Pillai	New Age	1	399
60	Statistical Mechanics	Gunta. Kumar. Sharma	Pragati Prakashan	1	250
61	The Feynman Lectures on	Feynman. Leighton. Sands	Narosa	1	285
62	The Feynman Lectures on	Feynman. Leighton. Sands	Pearson	1	375
63	The Feynman Lectures on	Feynman. Leighton. Sands	Pearson	2	375
64	The Physics of Vibrations &	H. J. Pain	Wiley	1	449
65	Waves and Oscillations	Briilal. Subrahmanvarn	Vikash	1	300
66	Advanced Practical Physics	Samir Kumar Ghosh	NCBA	1	295
67	Molecular Structure &	Aruldas	PHI	1	325
68	Electronic spectra of transition				835

Total----- 24644

Discount (10%)-- 2465

Grand total=22179 (rupees twenty two thousands, one hundred seventynine)

**B.Recurring****Department of Botany:**

Sl. No	Names	Company	Capacity	Qty	Cost	Total cost with VATS	Date of Order	Date of Purchase/install
<b>Glassware:</b>								
1	Micropipette	Borosil	100-1000 ml	2	6924.00	15391.00	21.12.2012	8.5.2013
2	Electronic pipette filling device	Borosil		1	6636.00		21.12.2012	8.5.2013
3	Beakers	Riviera	250 ml	12	636.00	32251.00	21.12.2012	17.6.2013
	Beakers	Riviera	500 ml	16	1504.00		21.12.2012	17.6.2013
	Beakers	Riviera	1000 ml	6	1140.00		21.12.2012	17.6.2013
4	Measuring cylinders	Riviera	10 ml	6	1224.00		21.12.2012	17.6.2013
	Measuring cylinders	Riviera	50 ml	10	2670.00		21.12.2012	17.6.2013
	Measuring cylinders	Riviera	100 ml	4	1224.00		21.12.2012	17.6.2013
5	Conical flask	Riviera	250 ml	6	474.00		21.12.2012	17.6.2013
	Conical flask	Riviera	500 ml	6	594.00		21.12.2012	17.6.2013
6	Pipettes (graduated)	JSGW	1	12	1032.00		21.12.2012	17.6.2013
	Pipettes (graduated)	JSGW	2	12	1164.00		21.12.2012	17.6.2013

	Pipettes (graduated)	JSGW	5	12	1296.00		21.12.2012	17.6.2013
	Pipettes (graduated)	JSGW	10	12	1428.00		21.12.2012	17.6.2013
7	Test Tubes	JSGW	15 X 125	100	1000.00		21.12.2012	17.6.2013
<b>Chemicals:</b>								
8	DPX mountant	Himedia	500 ml	2	972.00		21.12.2012	17.6.2013
9	Cotton Blue (Aniline blue)	Himedia	25 gm	4	664.00		21.12.2012	17.6.2013
10	Coomassie Brilliant	Himedia	25 gm	1	4619.00		21.12.2012	17.6.2013
11	Methyl violet	Himedia	25 gm	2	300.00		21.12.2012	17.6.2013
12	Carmin powder	Himedia	25 gm	1	2535.00		21.12.2012	17.6.2013
13	Diphenylamine	Himedia	250 gm	1	590.00		21.12.2012	17.6.2013
14	Petroleum ether	Himedia	500 gm	5	2300.00		21.12.2012	17.6.2013
15	Potassium iodide	Himedia	100 gm	1	1900.00		21.12.2012	17.6.2013
16	Iodine	Himedia	50 gm	1	204.00		21.12.2012	17.6.2013
17	Safranin powder	Himedia	100 gm	1	1270.00		21.12.2012	01.7.2013
18	Copper sulphate	Himedia	500 gm	1	430.00	11499.00	21.12.2012	01.7.2013
19	Manganese	Himedia	500 gm	1	600.00		21.12.2012	01.7.2013

	sulphate						2	
20	Agar agar powder	Himedia	100 gm	1	1915.00		21.12.2012	01.7.2013
21	Haemotoxylin	Himedia	25 gm	1	4560.00		21.12.2012	01.7.2013
22	Orcinol	Himedia	10 gm	1	1076.00		21.12.2012	01.7.2013
23	Ninhydrin	Himedia	10 gm	2	1100.00		21.12.2012	01.7.2013
24	Whatman Chromatography paper	Whatman	3 pkts	300 sheets	13080.00	14846.00	21.12.2012	16.7.2013
<b>TOTAL</b>						<b>73987.00</b>		

Glasswares, Chemicals & Specimens ordered on 21<sup>st</sup> December, 2012 but not yet received

Sl. No	Names	Company	Capacity	Qty	Total Cost
<b>Glasswares:</b>					
1	BOD bottles	JSGW	125 ml	15 pks	4575.00
2	Burette with screw type	JSGW	25 ml	10 nos.	1650.00
3	Conical flask with narrow mouth	Riviera	100 ml	24 nos.	1320.00
4	Funnels, longstem	JSGW	100 mm (dia)	10 nos.	840.00
5	Apparatus for Transpiration (complete set)	JSGW	-	12 nos.	8220.00
Total					<b>16605.00</b>
<b>Chemicals:</b>					

1	Fast Green	Himedia	100 gm	1	2768.00
2	Ribonucleic acid	Himedia	25 gm	1	3000.00
3	1- Butanol	Himedia	1 litre	1	960.00
4	Deoxyribonucleic acid	Himedia	10 gm	2	4682.00
5	Calcium chloride (anhydrous)	Himedia	100 gm	2	1290.00
6	Cotton blue (water soluble) Practical grade	Himedia	100 gm	2	1328.00
Total					<b>14028.00</b>

**Specimens:**

Sl. No	Specimens	Company	Catalogue No.	Qty	Dealer	Price (excl. VAT)	Price (incl. VAT)
1	Chara-vegetative	Biol. Museum	BMBCM-27	10	Sun Scientific	22.00	220.00
2	Chara-reproductive	“	BMBCM-28	10	“	22.00	220.00
3	Oedogonium-vegetative	“	BMBCM-55	10	“	22.00	220.00
4	Oedogonium-cap cells	“	BMBCM-56	10	“	22.00	220.00
5	Oedogonium-hold fast	“	BMBCM-57	10	“	22.00	220.00
6	Oedogonium-macrandous	“	BMBCM-58	10	“	22.00	220.00
7	Oedogonium-oogonial	“	BMBCM-59	10	“	22.00	220.00

8	Oedogonium-nanandrous	“	BMBCM-60	10	“	22.00	220.00
9	Vaucheria-vegetative	“	BMBCM-79	10	“	22.00	220.00
10	Vaucheria-sexual	“	BMBCM-80	10	“	22.00	220.00
11	Vaucheria-hypospores	“	BMBCM-81	10	“	22.00	220.00
12	Ectocarpus-plurilocular	“	BMBCM-96	10	“	22.00	220.00
13	Ectocarpus-unilocular	“	BMBCM-197	10	“	22.00	220.00
14	Polysiphonia-vegetative	“	BMBCM-118	10	“	22.00	220.00
15	Polysiphonia-tetrasporic	“	BMBCM-119	10	“	22.00	220.00
16	Polysiphonia-cystocarpic	“	BMBCM-120	10	“	22.00	220.00
17	Polysiphonia-antheridia	“	BMBCM-121	10	“	22.00	220.00
18	Pythium	“	BMBCM-138	10	“	22.00	220.00
19	Erysiphe	“	BMBCM-154	10	“	22.00	220.00
20	Agaricus-pileus	“	BMBCM-169	10	“	22.00	220.00
21	Agaricus-stipe	“	BMBCM-170	10	“	22.00	220.00
22	Puccinia-uredo	“	BMBCM-177	10	“	22.00	220.00

23	Puccinia-teleuto	“	BMBCM-178	10	“	22.00	220.00
24	Puccinia-aecidial	“	BMBCM-179	10	“	22.00	220.00
25	Puccinia-pycnidial	“	BMBCM-180	10	“	22.00	220.00
26	Alternaria	“	BMBCM-194	10	“	22.00	220.00
27	Anthoceros-vegetative	“	BMBCM-235	10	“	22.00	220.00
28	Anthoceros-sporophyte	“	BMBCM-236	10	“	22.00	220.00
29	Anthoceros-antheridia	“	BMBCM-237	10	“	22.00	220.00
30	Anthoceros-archegonia	“	BMBCM-238	10	“	22.00	220.00
31	Sphagnum-vegetative	“	BMBCM-297	10	“	22.00	220.00
32	Sphagnum-anth/arch	“	BMBCM-298	10	“	22.00	220.00
33	Sphagnum with capsule	“	BMBCM-299	10	“	22.00	220.00
34	Equisetum-stem	“	BMBCM-301	10	“	22.00	220.00
35	Equisetum-rhizome	“	BMBCM-301	10	“	22.00	220.00
36	Equisetum-cone	“	BMBCM-301	10	“	22.00	220.00
37	Equisetum-sporophyte	“	BMBCM-301	10	“	22.00	220.00

	plant						
38	Marsilea- stem	“	BMBCM-304	10	“	22.00	220.00
39	Marsilea- root	“	BMBCM-304	10	“	22.00	220.00
40	Marsilea- sporocarp	“	BMBCM-304	10	“	22.00	220.00
41	Marsilea- sporophyte plant	“	BMBCM-304	10	“	22.00	220.00
42	Psilotum- stem	“	BMBCM-305	10	“	22.00	220.00
43	Psilotum- synangia/ sporocarp	“	BMBCM-305	10	“	22.00	220.00
44	Psilotum- rhizome/ rhizophore	“	BMBCM-305	10	“	22.00	220.00
45	Cycas-male sporophyll	“	BMBCM-338	10	“	22.00	220.00
46	Cycas-female sporophyll	“	BMBCM-338	10	“	22.00	220.00
47	Cycas- coralloid root	“	BMBCM-339	10	“	22.00	220.00
48	Gnetum-stem	“	BMBCM-344	10	“	22.00	220.00
49	Gnetum- male cone	“	BMBCM-346	10	“	22.00	220.00
50	Gnetum- female cone	“	BMBCM-346	10	“	22.00	220.00

51	Bignonia stem	“	BMBCM-394	10	“	22.00	220.00
52	Bougainvillea stem	“	BMBCM-396	10	“	22.00	220.00
53	Mirabilis stem	“	-	10	“	22.00	220.00
54	Dracaena stem	“	BMBCM-434	10	“	22.00	220.00
Total							<b>11880.00</b>
Total (Glasswares + Chemicals + Specimens not yet received)							<b>42513.00</b>

Expenditure:

A) Total amount of Non-Recurring items = **526719.00**

B) Total amount of Recurring items = **73987.00**

Grand Total (A+B) = **600706.00**

**Department of Physics:**

1.	Departmental seminar on the 1 <sup>st</sup> December 2012	Rs 755.00
2.	Exposure trip to North Eastern Space Application Centre on December 5, 2012	Rs 8808.00
3.	DBT Faculty meeting on December 7, 2012	Rs 519.00
4.	Workshop on ‘ Use of simple Medical Physics instruments’ on July 15, 2013	Rs 5252

