NAAC-SSR

Departmental Profile

Ramakrishna Mission
Vivekananda Centenary College
Rahara, Kolkata-700118

Department of Physics
3. Evaluative Report of the Departments

1. Name of the department: Physics

2. Year of Establishment: 1963

3. Names of Programmes /Courses offered (UG, PG, M.Phil., Ph.D., Integrate Masters; Integrated Ph.D., etc.): B. Sc. with Honours in Physics (UG)

4. Names of Interdisciplinary courses and the departments/units involved: At present there is no inter-disciplinary course in the Department.

5. Annual/semester/choice based credit system (programmewise): Annual system

6. Participation of the department in the courses offered by other departments: The students of the Chemistry (Honours) and Mathematics (Honours) need to study Physics as a General Subject. The faculty members of the Physics Department teach this course to the Chemistry (Honours) and Mathematics (Honours) students.

7. Courses in collaboration with other universities, industries, foreign institutions, etc.: At present, there is no programme in the Department in collaboration with any other organization.

8. Details of courses / programmes discontinued (if any) with reasons: NA

9. Number of Teaching posts

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
<td>Nil</td>
<td>Nil</td>
</tr>
<tr>
<td>Associate Professors</td>
<td></td>
<td>3(Through Promotion)</td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>11</td>
<td>2</td>
</tr>
</tbody>
</table>
10. Faculty profile with name, qualification, designation, specialization,(D.Sc./D.Litt./Ph.D./M.Phil.etc.,)

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Designation</th>
<th>Specialization</th>
<th>No. of Years of Experience</th>
<th>No. of Ph.D. Students Guided for the Last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Shambhu Pada Kundu</td>
<td>M.Sc., Ph.D.</td>
<td>Associate Professor</td>
<td>Electronics, Plasma Physics</td>
<td>30</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Asok Kumar Pal</td>
<td>M.Sc., Ph.D.</td>
<td>Associate Professor</td>
<td>Solid State Physics</td>
<td>16</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Chandan Kumar Das</td>
<td>M.Sc., B.Ed, Ph.D.</td>
<td>Associate Professor</td>
<td>Elementary Particle Physics and Quantum Field Theory</td>
<td>14</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Atisdipankar Chakraborty</td>
<td>M.Sc., Ph.D.</td>
<td>Assistant Professor</td>
<td>High Energy Physics</td>
<td>13</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Rajen Kundu</td>
<td>M.Sc., Ph.D.</td>
<td>Assistant Professor</td>
<td>High Energy Physics</td>
<td>13</td>
<td>Nil</td>
</tr>
</tbody>
</table>

11. List of senior visiting faculty / Guest Lecturer 04

12. Percentage of lectures delivered and practical classes handled (programme wise)
   By temporary faculty: 30%

13. Student-Teacher Ratio (programme wise) 20.25:1

14. Number of academic supports staff (technical) and administrative staff; sanctioned and filled:
   Graduate Laboratory Instructor: Sanctioned = 1, Filled up = 1
   Laboratory Attendant: Sanctioned = 4, Filled up = 2
   Storekeeper: Sanctioned =1, Filled up = 1

15. Qualifications of teaching faculty with DSc/D.Litt/Ph.D/MPhil/PG.:
   Teaching Faculty with Ph.D. = 5;
Teaching Faculty (guest) with PG=4

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received:
   At present, one of the faculty members is having one Minor Research Project with the following details:
   Title of the Project: An attempt to simulate evolutionary design in biological system using physical & mathematical models.
   Duration: 2 years
   Sanctioned Amount - 1.23 lac
   Principal Investigator: Dr. Rajen Kundu

17. Departmental projects funded by DST-FIST;UGC, DBT, ICSSR, etc. and total grants received:
   Two UGC Minor Research Projects have been undertaken in the Department:

   Title of the Project: An attempt to simulate evolutionary design in biological system using physical & mathematical models.
   Duration: 2 years
   Sanctioned Amount - 1.23 lac
   Principal Investigator: Dr. Rajen Kundu

   2) Title of the Research Project “On the properties of solitonic pulse propagation in optical fiber”.
   Funding Agency: University Grants Commission
   UGC approval No. and Date: F.PSW-173/09-10(ERO) dt. 08.10.2009, S.No. 95981
   Duration of the project: 18 months
   Sanctioned Amount: Rs. 71,000/-
   Received Amount: Rs. 71,000/-
   Date of submission: 04.07.2011.
   Principal Investigator: Dr. Chandan Kumar Das

18. Research Centre / facility recognized by the University: Nil

19. Publications:
   a) Publication per faculty:
   b) Number of papers published in peer reviewed journals (national/
international) by faculty and students: 44

<table>
<thead>
<tr>
<th>Name of Teacher</th>
<th>Number of Papers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Asok Kumar Pal</td>
<td>12</td>
</tr>
<tr>
<td>Dr. Chandan Kumar Das</td>
<td>05</td>
</tr>
<tr>
<td>Dr. Atis dipankar Chakraborty</td>
<td>10</td>
</tr>
<tr>
<td>Dr. Rajen Kundu</td>
<td>13</td>
</tr>
</tbody>
</table>

**Detailed List of papers:**

**Dr. Asok Kumar Pal**


**Dr. Chandan Kumar Das**


Dr. Atisdipankar Chakraborty


4. The Study of electronic and magnetic properties of the partially disordered pseudo-Heusler alloy \( \text{Co}_2\text{Fe}_{0.4}\text{Cu}_{0.6}\text{Al} \): An augmented space approach. (2007) Monodeep Chakraborty, Atisdipankar Chakrabarti and Abhijit Mookerjee, JMMM, 313, 243-252


9. A study of the convergence of the recursion method for metals and compounds. (2002), Atisdipankar Chakrabarti and Abhijit Mookerjee,
10. Augmented-space recursion for partially disordered systems. (2001)

**Dr. Rajen Kundu**


Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database-International SocialSciences Directory,EBSCOhost,etc.): 40

Monographs: Nil

ChapterinBooks: Nil

BooksEdited: Nil

BookswithISBN/ISSNnumberswithdetailsofpublishers: Nil

CitationIndex: Dr. Rajen Kundu has two papers with more than 50 citations and average citation per paper is 17.

SNIP: Nil

SJR: Nil

Impact factor: Impact factors of some of the journals where papers are published by the faculty members.

<table>
<thead>
<tr>
<th>Name of the Journal</th>
<th>Impact Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Review Letters</td>
<td>7.943</td>
</tr>
<tr>
<td>Journal of Biomolecular Structure and Dynamics, USA</td>
<td>4.986</td>
</tr>
<tr>
<td>Physical Review D</td>
<td>4.170</td>
</tr>
<tr>
<td>Physics Letters B</td>
<td>3.955</td>
</tr>
<tr>
<td>Physical Review B</td>
<td>3.691</td>
</tr>
<tr>
<td>Protein Engineering</td>
<td>2.588</td>
</tr>
<tr>
<td>Journal of Physics: Condensed Matter</td>
<td>2.355</td>
</tr>
<tr>
<td>Journal of Molecular Modeling</td>
<td>1.984</td>
</tr>
<tr>
<td>Chaos, Solitons and Fractals</td>
<td>1.222</td>
</tr>
<tr>
<td>Physica B: Condensed Matter</td>
<td>1.33.</td>
</tr>
<tr>
<td>E. Physical J B</td>
<td>1.28</td>
</tr>
<tr>
<td>Indian Journal of Physics.</td>
<td>1.785.</td>
</tr>
</tbody>
</table>
20. Areas of consultancy and income generated: Nil

21. Faculty as members in a) National committees b) International Committees c) Editorial Boards: None

22. Student projects

a) Percentage of students who have done in-house projects including inter departmental /programme:

50% participated in departmental Science Exhibition on the occasion of Golden Jubilee of the college

**Titles of the exhibits**

1. Model for automatic switching of street lights
2. Model for water level indicator
3. Model exhibiting Stroboscopic effects
4. Reflecting type telescope
5. Models exhibiting basic principle of fiber optics
6. Developments of motors
7. Gauss’s gun
8. Model showing quantum nature of light
9. Demonstration of effects due to eddy current
10. Electronic letter box

b) Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry/ other agencies: Nil

23. Awards/Recognitions received by faculty and students:

- One student of 3rd Year Honours was awarded the 2nd prize in scientific debate on nuclear power on ‘National Science Day’ at VECC.

-During last three years the students secured the following ranks (out of top ten) in the West Bengal State University:

- 2011 – 3rd & 5th
- 2012 – 4th, 5th, 7th, 9th and 10th
- 2013 - 1st, 2nd, 3rd, 5th, 6th, 7th & 10th.

24. List of eminent academicians and scientists / visitors to the department:

1) At the National Level seminar organized by Dept. of Physics on the occasion of Golden Jubilee of the College the following academicians delivered lectures on 10th January, 2013:

- Prof. Chirantan Neogi, University of Kalyani delivered lectures on “Important Experiments in Physics time line”
- Dr. Prabir Mukherjee, Institute of Textile Technology, Serampore
delivered lectures on “World of Liquid Crystal”
- Prof. Debnarayan Jana, University of Calcutta delivered lectures on “Nanotechnology”
- Dr. Abhijit Banerjee, Vivekananda University, Belur Math delivered lectures on delivered lectures on “Missing mass and energy of the Universe”

2) At the UGC-Sponsored State level seminar organized by Department of Physics on 5th September, 2013, the following academicians delivered lectures:
- Dr. Debiprasad Duari, Director, Birla Planetarium, Kolkata delivered lectures on “Life and Death of Stars”
- Dr. Dibyendu Nandi, IISER,Kolkata “The Magnetic Sun and its Relevance for Earth”
- Prof. Chirantan Neogi, University of Kalyani delivered lectures on “History of The Development of Optical Telescopes”
- Dr. Partha Sarathi Joardar, Centre For Astroparticle Physics and Space Science, Bose Institute, Kolkata, delivered lectures on “Production of astrophysical strangelets as the debris of stellar collisions: possible prediction for AMS-02 experiment”

Following scientific papers are presented by the participants in this seminar.

- Equilibrium Kinetic Equation for a Weakly Non ideal Gravitational System By Anirban Bose, Department of Physics, Serampore College Serampore, 712201
- Transport properties of EuB in a spin-polaron model by Jayita Chatterjee, Department of Physics, Rishi Bankim Chandra College for Women, Naihati, West-Bengal
- Ferromagnetism in degenerate quark matter by Kausik Pal, Department of Physics, Serampore College Serampore, 712201
- Critical End Points of the First-Order Ferromagnetic Transition in Disordered Manganites by Prosenjit Sarkar, Department of Physics, Serampore College, Serampore – 712 201
- Nucleonic Helicity Distributions Revisited with an emphasis on their Evolutions and Twists by Rajen Kundu, RKMVC College, Rahara, Kolkata, 700118
- Detection of Solar Bursts by Using LPDA and FFT, Sankha Das, Department of Physics, Serampore College, Serampore 712201, West Bengal, India
- Accretion Flow Dynamics in SdS Space time by Sonali Saha, Department of Physics, Sarojini Naidu College for Women, 30 Jessore Road, Kolkata: 700028
- A Study on the Chaotic Motion of a Test Particle near a Spinning Black Hole with Dipolar Halo by Sankhasubhra Nag, Sarojini Naidu College for Women, 30 Jessore Road, Kolkata: 700028
3) At the Workshop entitled ‘Advanced Experiments in Physics’ Prof. Amitabha Bhaduri of Rashtraguru Surendranath College, Barrackpore, Kolkata led the Panel Discussion Session on 26th April, 2014.

25. **Seminars /Conferences/ Workshops organized & the source of funding**

   a) **National:**
   A National-level Seminar on “Exposure to Frontiers in Theoretical and Experimental Physics” was organized by the Department of Physics to commemorate the Golden Jubilee of the College on 10th January, 2013 funded by UGC.

   b) **International:** Nil

   c) **State Level:** A UGC Sponsored Seminar on ‘Astrophysics: Achievement and Scopes’ was organized by the Department of Physics on 5th September, 2013.

   An Inter-college Workshop entitled ‘Advanced Experiments in Physics’ was organized by the Department of Physics on 25th and 26th April, 2014.

26. **Student profile programme /coursewise:** (For last four years)

<table>
<thead>
<tr>
<th>Name of the Course/programme (refer question no. 4)</th>
<th>Applications received (2013)</th>
<th>Selected (1st Yr.)</th>
<th>Enrolled *M</th>
<th>*F</th>
<th>Pass percentage (2013) (B.Sc Final Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc. , 2013</td>
<td>429</td>
<td>55</td>
<td>55</td>
<td>Nil</td>
<td>100 %</td>
</tr>
<tr>
<td>B.Sc. , 2012</td>
<td>369</td>
<td>55</td>
<td>55</td>
<td>Nil</td>
<td>100 %</td>
</tr>
<tr>
<td>B.Sc. , 2011</td>
<td>686</td>
<td>60</td>
<td>60</td>
<td>Nil</td>
<td>100 %</td>
</tr>
<tr>
<td>B.Sc. , 2010</td>
<td>518</td>
<td>58</td>
<td>58</td>
<td>Nil</td>
<td>100 %</td>
</tr>
</tbody>
</table>

*M=Male  *F=Female

27. **Diversity of Students**

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>% of students from the same state</th>
<th>% of students from other States</th>
<th>% of students from abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc. Phys. (Hons.)</td>
<td>100%</td>
<td>Nil</td>
<td>Nil</td>
</tr>
</tbody>
</table>
28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, JAM, JEST, PG entrance Exam etc.

2010 – 3 cleared JAM, 11 pursued MSc, 1 of them is pursuing Ph.D. in USA (Hampton University, Virginia), another working on Integrated waveguide quantum photonics at Heriot-Watt university, U.K.

2011 - 4 cleared JAM, 3 JEST, 26 completed MSc and working in different Research Institute Govt., Non–Govt. organization and educational Institution

2013 - 2- TIFR, 5- JAM, 2 JEST, and the rest of passed out pursuing their Masters in different IITs and eminent Universities.

29. Student progression

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Against % enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>70% (last 3 year’s average)</td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td>No record</td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td>30%</td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td>No record</td>
</tr>
<tr>
<td>Employed</td>
<td></td>
</tr>
<tr>
<td>- Campus selection</td>
<td>Some students have been selected based on a 7-day workshop cum in-campus recruitment drive of different Companies like TCS.</td>
</tr>
<tr>
<td>- Other than campus recruitment</td>
<td>Some students have also opted for Government level services through State and National-level Entrance Examinations.</td>
</tr>
<tr>
<td>Entrepreneurship/Self-employment</td>
<td>No record</td>
</tr>
</tbody>
</table>

30. Details of Infra structural facilities a) Library:
- A departmental library with nearly 200 reference books
- The College library has a rich collection of books and journals.

b) Internet facilities for Staff & Students: It is available in the library and also in department.
c) Class rooms with ICT facility: 01 ICT-enabled class room for multimedia presentation.

d) Laboratories:
   - Electronics Laboratory – 02,
   - Optics Laboratory – 02,
   - Electrical & Heat Laboratory – 02
   - Computer Laboratory – 01,
   - General Laboratory – 02
   - Laser Laboratory - 01

31. Number of students receiving financial assistance from college, university, Government or other agencies:
Students are helped by the college to avail various Scholarships like INSPIRE, Merit-cum-Means, Zindal, West Bengal Minority Development Federation Corporation Scholarship, SC/ST/OBC Scholarship, Scholarships from Ramakrishna Mission, Belur Math and Ramakrishna Mission Institute of Culture, Golpark.

32. Details on student enrichment programmes (special lectures /workshops/ seminar) with external experts:
   Inter College Workshop on “Advanced Experiment in Physics” 25-26 April, 2014

33. Teaching methods adopted to improve student learning:
   - ICT Enabled Classrooms for better Teaching-Learning
   - Extensive study material is prepared for helping the students to grasp the subject.
   - Student counseling and remedial classes for slow learners
   - Class Tests for constant evaluation

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:
   As a part of the NSS activities the students and faculty actively participate in Blood Donation, Free Eye operation Camp, Polio Vaccination and Campus cleaning.

35. SWOC analysis of the department and Future plans:

   **Strength** – Well equipped UG Lab, only five qualified teachers and their devotion and innovation for the assigned course and secretarial help,

   **Weakness** – Shortage of teachers, not proportionate to huge number of students and shortage of non-teaching staffs,

   **Opportunity** – To open allied UG courses and to provide better education,
Challenge – To cope up with modern techniques and methods of teaching and also to produce students who can share the global advancement of Physics.

Future Plans – If adequate teaching and non teaching staffs and fund are available more laboratories with equipments may be set up to extend the facility of teaching. If funds are available frequent seminars and workshops (both national and international) may be convened and arranged with eminent efficient academicians. Inter college exchange programs may also be arranged with undergraduate students.
Ramakrishna Mission
Vivekananda Centenary College
Rahara, Kolkata-700118

Department of Chemistry

NAAC-SSR
Departmental Profile
3. Evaluative Report of the Departments

The Self-evaluation of every department may be provided separately in about 3-4 pages, avoiding the repetition of the data.

1. Name of the department : Department of Chemistry

2. Year of Establishment : 1963

3. Names of Programmes/ Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.) : UG, PG and Ph. D.

4. Names of Interdisciplinary courses and the departments/ units involved
   There is no such interdisciplinary course in Chemistry Department. But our teachers are doing research works and project works with Botany Department teachers.

5. Annual/ semester/ choice based credit system (programmewise):
   UG – Annual; PG – Semester

6. Participation of the department in the courses offered by other departments:
   In Under Graduate level of our college all courses (both Honours and General) have general papers of Chemistry. So the teachers of Chemistry Department directly involved in teaching the Chemistry subject for all students of our college in Under Graduate level. Moreover our teachers are involved in teaching PG Course in Botany of our college.

7. Courses in collaboration with other universities, industries, foreign institutions, etc.:
   Ph. D. Programmes are run under the University of Calcutta. A joint project has been conducted with the Department of Zoology, West Bengal State University under DBT-sponsorship.

8. Details of courses/ programmes discontinued (if any) with reasons : Nil

9. Number of Teaching posts

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
<td>------</td>
<td>------</td>
</tr>
</tbody>
</table>
10. Faculty profile with name, qualification, designation, specialization
(D.Sc./D.Litt./Ph.D./M.Phil. etc.,)

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Designation</th>
<th>Specialization</th>
<th>No. of Years of Experience</th>
<th>No. of Ph.D. Students Guided for the Last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Chandrakanta Bandyopadhyay</td>
<td>M. Sc. Ph. D.</td>
<td>Associate Professor and Head</td>
<td>Organic Chemistry</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>Dr. Tapas Ghosh</td>
<td>M. Sc. Ph. D.</td>
<td>Associate Professor</td>
<td>Inorganic Chemistry</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>Dr. Kumar Ranabir Sur</td>
<td>M. Sc. Ph. D.</td>
<td>Associate Professor</td>
<td>Organic Chemistry</td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Dr. Ranjan Patra</td>
<td>M. Sc. Ph. D.</td>
<td>Associate Professor</td>
<td>Organic Chemistry</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Dr. Subhabrata Banerjee</td>
<td>M. Sc. Ph. D.</td>
<td>Associate Professor</td>
<td>Physical Chemistry</td>
<td>13</td>
<td></td>
</tr>
</tbody>
</table>

11. List of senior visiting faculty: (For UG & PG)

List of the Faculty appointed by the Management:

Dr. K. Pal, Former Head, Department of Chemistry, R. K. M. V. C. College, Rahara.

Dr. A. Sen, Former Head, Department of Chemistry, R. K. M. V. C. College, Rahara.

Swami Kamalasthananda, Principal (Actg.), R. K. M. V. C. College, Rahara.

List of visiting faculty:

Prof. D. C. Mukherjee, Former Professor, University of Calcutta.

Prof. S. Bagchi, Former Professor, University of Burdwan and Scientist IISER, Kolkata.

Prof. R. S. Banerjee, Former Professor, University of Calcutta.
Prof. G. N. Mukherjee, Former Rashbehari Ghosh Professor, University of Calcutta.

Prof. M. Chakraborty, Former Professor, Bose Institute, Kolkata.

Dr. B. Karmakar, Former Reader, Sir Gurudas College, Kolkata

12. Percentage of lectures delivered and practical classes handled (programme wise)
   By temporary faculty:
   For PG : Lectures delivered: 80%; Practical: 35%
   For UG : Lectures delivered: 20%; Practical: 10%.

13. Student-Teacher Ratio (programmewise):
   Under Graduate : 20.25 : 1
   Post Graduate : 9 : 1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled:

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Laboratory Instructor</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Laboratory Attendant</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil/ PG.:

   Teaching faculty with Ph. D. + M. Phil. : One
   Teaching faculty with Ph. D. : Four

16. Number of faculty with on-going projects from a) National b) International funding agencies and grants received:

<table>
<thead>
<tr>
<th>Name of faculty with on-going project</th>
<th>National funding agencies &amp; Grants received</th>
<th>International funding agencies &amp; Grants received</th>
</tr>
</thead>
</table>
17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:

In the Last Four Years

UGC (two minor research project)
DBT (One major collaborative project)
CSIR (Two, one completed and one on-going)

Total Grant Received: Rs. 41,44,311/-.
Detailed List of the Total Research Projects carried out by the Department (for the period 30-12-95 till date):

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Funding Authority (Investigator)</th>
<th>Project no. and title</th>
<th>Duration</th>
<th>Grant Received (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UGC (Minor project) (Dr. K. R. Sur)</td>
<td>No. F.16-8/95(SR-1); &quot;Study of Single Electron Transfer Reactions on Oxygen Heterocycles.&quot;</td>
<td>1-1-96 to 31-12-97</td>
<td>26,000/-</td>
</tr>
<tr>
<td>2</td>
<td>UGC (Minor project) (Dr. C. Bandyopadhyay)</td>
<td>No. F.16-9/95(SR-1); &quot;Study of Single Electron Transfer Reactions on Oxygen Heterocycles.&quot;</td>
<td>1-1-96 to 31-12-97</td>
<td>37,500/-</td>
</tr>
<tr>
<td>3</td>
<td>UGC (Minor project) (Dr. T. Ghosh)</td>
<td>No. F. PSW-010/97(ERO); “Chemistry of Oxovanadium (IV/V) complexes”</td>
<td>13-01-97 to 12-1-99</td>
<td>40,000/-</td>
</tr>
<tr>
<td>4</td>
<td>UGC (Minor project) (Dr. C. Bandyopadhyay)</td>
<td>No. F. PSW-016/99-00(ERO); &quot;Synthesis and evaluation of chromone-based synthetic molecular receptors.”</td>
<td>15-9-99 to 14-9-01</td>
<td>45,000/-</td>
</tr>
<tr>
<td>5</td>
<td>UGC (Minor project) (Dr. K. R. Sur)</td>
<td>No. F. PSW-017/99-00(ERO); &quot;Hydrodimerisation and cyclisation of arylidene active methylenes.”</td>
<td>15-9-99 to 14-9-01</td>
<td>42,000/-</td>
</tr>
<tr>
<td>6</td>
<td>UGC (Minor project) (Dr. R. Patra)</td>
<td>No. F. PSW-18/99(ERO); “Synthesis of heterocycles using low valent titanium (LVT) on suitably functionalized oxygen heterocycles”</td>
<td>15-9-99 to 14-9-01</td>
<td>47,000/-</td>
</tr>
<tr>
<td>7</td>
<td>UGC (Minor project) (Dr. T. Ghosh)</td>
<td>No. F. PSW-010/01-02(ERO); &quot;Studies on Oxovanadium (IV/V) complexes with O, N-donor ligands”</td>
<td>14-08-01 to 13-08-03</td>
<td>50,000/-</td>
</tr>
<tr>
<td>8</td>
<td>UGC (Minor project) (Dr. R. Patra)</td>
<td>No. F. PSW-033/02(ERO); “Synthesis of unusual class of nucleoside analogues”</td>
<td>22-11-2002 to 21-11-2004</td>
<td>50,000/-</td>
</tr>
<tr>
<td>9</td>
<td>UGC (Minor project) (Dr. T. Ghosh)</td>
<td>No. F. PSW-041/04-05(ERO); “Chemistry of Oxovanadium (IV/V) complexes with some</td>
<td>13-03-05 to 12-03-07</td>
<td>75,000/-</td>
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<tr>
<td>No.</td>
<td>UGC (Minor project) (Dr. S. Banerjee)</td>
<td>O, N-donor hydrazone ligands”</td>
<td>22-11-2002 to 21-11-2004</td>
<td>50,000/-</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------</td>
<td>-------------------------------</td>
<td>--------------------------</td>
<td>----------</td>
</tr>
<tr>
<td>11</td>
<td>UGC (Minor project) (Dr. T. Ghosh)</td>
<td>“Metal-ion interactions with some Azo Compounds”.</td>
<td>08-10-09 to 07-04-11</td>
<td>1,34,000/-</td>
</tr>
<tr>
<td>12</td>
<td>UGC (Minor project) (Dr. S. Banerjee)</td>
<td>“Synthesis, structure and reactivity of Oxovanadium (IV/V) complexes with some multidentate O, N-donor ligands”</td>
<td>08-10-09 to 07-04-11</td>
<td>1,23,000/-</td>
</tr>
<tr>
<td>13</td>
<td>UGC (Major project) (Dr. C. Bandyopadhyay)</td>
<td>“Supported and / or unsupported hydrotalcite-like anionic clays as heterogeneous catalyst in organic reactions”</td>
<td>01-07-03 to 30-6-2006</td>
<td>4,59,960/-</td>
</tr>
<tr>
<td>14</td>
<td>CSIR (Major project) (Dr. C. Bandyopadhyay)</td>
<td>&quot;Bischromones and bichromones: Synthesis, reactivity and their utilization as a potential molecular receptor.&quot;</td>
<td>1-12-2007 to 31-5-2011</td>
<td>13,01,586/-</td>
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<tr>
<td>15</td>
<td>DBT (Major project) (Dr. C. Bandyopadhyay)</td>
<td>&quot;Introducing chromone linked nitrone derivatives as novel antileishmanial agent against experimental visceral leishmaniasis: A chemotherapeutic approach&quot;.</td>
<td>30-01-08 to 29-1-12</td>
<td>10,94,000/-</td>
</tr>
<tr>
<td>16</td>
<td>CSIR (Major project) (Dr. C. Bandyopadhyay)</td>
<td>“Multi Component Reactions Based on Chromone Skeleton”</td>
<td>21-02-12 to 20-02-15</td>
<td>14,91,725/- (till 31-3-14)</td>
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<tr>
<td></td>
<td>Total : Minor Project – 12 (UGC); Major: 4 (UGC, CSIR-2 and DBT)</td>
<td></td>
<td>30-12-95-till date</td>
<td>50,66,771/-</td>
</tr>
</tbody>
</table>
18. Research Centre/ facility recognized by the University:

Two of our faculty members of Chemistry (Dr. Chandrakanta Bandyopadhyay and Dr. Tapas Ghosh) have acted as Ph.D guide under University of Calcutta. Under their guidance four (4) students have been awarded Ph.D. degree from University of Calcutta. Other three (3) permanent faculty members (Dr. Kumar Ranabir Sur, Dr. Ranjan Patra and Dr. Subhabrata Banerjee) have recently applied to University of Calcutta for their recognition as Ph. D. guide by the University.

19. Publications:

* a) Publication per faculty:
  
  Dr. C. Bandyopadhyay : 58 (National: 13; International: 45);
  Dr. T. Ghosh : 45 (National: 26; International: 19);
  Dr. K. R. Sur : 17 (National: 08; International: 07);
  Dr. R. Patra : 08 (National: 02; International: 06);
  Dr. S. Banerjee : 29 (National: 07; International: 22).

* Number of papers published in peer reviewed journals (national/ international) by faculty and students: National: 56; International: 99

* Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database-International Social Sciences Directory, EBSCO host, etc.) : 151

* Monographs:

Chapter in Books:
“Complete combustion of methane over transition metal oxide(s) containing acidic ZrO$_2$ catalysts” by S. Banerjee, T. V. Choudhary and V. R. Choudhary in Recent Trends in Catalysis, Edited by V. Murugesan, B. Arabindoo and M. Palanichamy, pp. 481, Narosa Publishing House, New Delhi, 1999


Books Edited: Nil

Books with ISBN/ISSN numbers with details of publishers: Nil

Citation Index: Most of the papers have been cited by others.
<table>
<thead>
<tr>
<th>Name</th>
<th>Year</th>
<th>Volume</th>
<th>Page no.</th>
<th>Citing articles</th>
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</thead>
<tbody>
<tr>
<td>Tetrahedron Letters</td>
<td>2013</td>
<td>54</td>
<td>3466</td>
<td>02*</td>
</tr>
<tr>
<td>Tetrahedron Letters</td>
<td>2013</td>
<td>54</td>
<td>2221</td>
<td>01*</td>
</tr>
<tr>
<td>International Immunopharmacology</td>
<td>2013</td>
<td>15</td>
<td></td>
<td>02*</td>
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<tr>
<td>Tetrahedron</td>
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<td>66</td>
<td>7625</td>
<td>14</td>
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<tr>
<td>Tetrahedron Letters</td>
<td>2012</td>
<td>53</td>
<td>694</td>
<td>02*</td>
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<tr>
<td>Tetrahedron Letters</td>
<td>2011</td>
<td>52</td>
<td>1946</td>
<td>03*</td>
</tr>
<tr>
<td>Tetrahedron Letters</td>
<td>2009</td>
<td>50</td>
<td>3966</td>
<td>09*</td>
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<tr>
<td>Tetrahedron Letters</td>
<td>2004</td>
<td>45</td>
<td>6169</td>
<td>27</td>
</tr>
<tr>
<td>Tetrahedron</td>
<td>2000</td>
<td>56</td>
<td>3583</td>
<td>36</td>
</tr>
<tr>
<td>Polyhedron</td>
<td>2008</td>
<td>27</td>
<td>2193</td>
<td>18*</td>
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<td>2012</td>
<td>48</td>
<td>264</td>
<td>01*</td>
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<tr>
<td>Inorganica Chimica Acta</td>
<td>2007</td>
<td>360</td>
<td>1753</td>
<td>62</td>
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<td>2009</td>
<td>362</td>
<td>3303</td>
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<td>Inorganica Chimica Acta</td>
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<td>363</td>
<td>2296</td>
<td>07*</td>
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<tr>
<td>Journal of Molecular Catalysis</td>
<td>2006</td>
<td>246</td>
<td>79</td>
<td>05*</td>
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<tr>
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<td>2001</td>
<td>198</td>
<td>136</td>
<td>51*</td>
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<tr>
<td>Applied Catalysis A:General</td>
<td>2003</td>
<td>253</td>
<td>65</td>
<td>24*</td>
</tr>
<tr>
<td>Applied Catalysis A:General</td>
<td>2002</td>
<td>234</td>
<td>259</td>
<td>48*</td>
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<td>2002</td>
<td>231</td>
<td>243</td>
<td>36*</td>
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<td>2000</td>
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<td>L183</td>
<td>24*</td>
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<td>Microporous &amp; Mesoporous Material</td>
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<td>47</td>
<td>253</td>
<td>31*</td>
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<tr>
<td>Microporous &amp; Mesoporous Material</td>
<td>2004</td>
<td>70</td>
<td>37</td>
<td>09*</td>
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<tr>
<td>Microporous &amp; Mesoporous Material</td>
<td>2003</td>
<td>57</td>
<td>317</td>
<td>13*</td>
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<tr>
<td>Tetrahedron Letters</td>
<td>1991</td>
<td>32</td>
<td>1363</td>
<td>24*</td>
</tr>
<tr>
<td>Tetrahedron Letters</td>
<td>1989</td>
<td>30</td>
<td>4279</td>
<td>02*</td>
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<tr>
<td>Tetrahedron</td>
<td>1996</td>
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<td>53</td>
<td>4727</td>
<td>19*</td>
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**SNIP**: Nil

**SJR**: Nil

**Impact factor**: Following of the impact factors of journals where all articles are published:

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<tr>
<th>Sr. No.</th>
<th>Name of Journal</th>
<th>Impact Factor</th>
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<tbody>
<tr>
<td>1</td>
<td>J. Indian Chem. Soc.</td>
<td>0.280</td>
</tr>
<tr>
<td>2</td>
<td>Indian J. Chem. (Sec. B)</td>
<td>0.648</td>
</tr>
<tr>
<td>3</td>
<td>J. Chem. Res.</td>
<td>0.596</td>
</tr>
<tr>
<td>4</td>
<td>Synth. Commun.</td>
<td>0.802</td>
</tr>
<tr>
<td>5</td>
<td>J. Heterocycl. Chem.</td>
<td>1.224</td>
</tr>
<tr>
<td>6</td>
<td>Synthesis</td>
<td>2.500</td>
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<tr>
<td>7</td>
<td>Synlett</td>
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<tr>
<td>8</td>
<td>Tetrahedron Lett.</td>
<td>2.660</td>
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<tr>
<td>9</td>
<td>Tetrahedron</td>
<td>3.219</td>
</tr>
<tr>
<td>10</td>
<td>Industrial &amp; Engineering Chemistry Research</td>
<td>2.206</td>
</tr>
<tr>
<td>11</td>
<td>Applied Catalysis A: General</td>
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</tr>
<tr>
<td>12</td>
<td>Microporous and Mesoporous Materials</td>
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<td>13</td>
<td>Journal of Catalysis</td>
<td>6.249</td>
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<tr>
<td>14</td>
<td>Journal of Chemical Sciences (Previously Proceedings of Indian Academy of Science – Chemical Sciences)</td>
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<td>15</td>
<td>Transition Metal Chemistry</td>
<td>1.070</td>
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<td>16</td>
<td>Catalysis Communication</td>
<td>3.330</td>
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<tr>
<td>17</td>
<td>Journal of Molecular Catalysis: A</td>
<td>3.319</td>
</tr>
<tr>
<td>18</td>
<td>Energy and Fuels</td>
<td>2.853</td>
</tr>
<tr>
<td>19</td>
<td>Inorganic Chemica Acta</td>
<td>1.950</td>
</tr>
<tr>
<td>20</td>
<td>Polyhedron</td>
<td>2.100</td>
</tr>
<tr>
<td>21</td>
<td>RSC Advance</td>
<td>2.560</td>
</tr>
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</table>

**h-index**: Not available

20. **Areas of consultancy and income generated:**

Delivered lectures in conferences, UGC-sponsored Academic Staff College programmes like Refresher Course, Interaction Programme for Ph. D. students. Actively participated in UG Board of Studies in Chemistry for
framing the UG syllabus, conducted PG seminars and evaluated projects of PG students in other institutions and delivered lectures to different undergraduate colleges in and around Kolkata. In doing so travelling expenses and in some cases token honorarium has been received.

21. Faculty as members in
   a) National Committees  b) International Committees  c) Editorial Boards

   Indian Association for the Cultivation of Science:
   Dr. C. Bandyopadhyay
   Dr. T. Ghosh
   Dr. K. R. Sur
   Dr. S. Banerjee

   Chemical Research Society of India
   Dr. C. Bandyopadhyay
   Dr. T. Ghosh

   Indian Chemical Society
   Dr. C. Bandyopadhyay
   Dr. T. Ghosh

   Indian Society for the Surface Science and Technology
   Dr. S. Banerjee

   Catalysis Society of India
   Dr. S. Banerjee

22. Student projects
   a) Percentage of students who have done in-house projects including interdepartmental / programme: 70%

   b) Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies:

   30% (In Universities like CU, JU, BU, KU, Presidency, in IACS Jadavpur and in IISER Kolkata).

23. Awards/ Recognitions received by faculty and students:

   Student:
   Diptiman Dinda – Received “SPM Fellowship” in 2011;

   Faculty:
Dr. C. Bandyopadhyay – Received “Prof. Navneeth Rao Best Teacher Award, 2013” from A. V. Rama Rao Research Foundation, Hyderabad.

24. **List of eminent academicians and scientists/visitors to the department:**

The following eminent persons have visited our college and delivered lectures in different occasions and our students and teachers have interacted strongly with them.

Prof. A. S. Borovik, *School of physical Sciences, University of California, Irvine, CA 92697, USA* on 09-12-2010 : Topic: “Utilizing Non-Covalent Interactions to Regulate Metal-mediated Transformation”.

Prof. B. C. Ranu, *Scientist, Indian Association for the Cultivation of Science, Kolkata*.

Prof. Sribrata Goswami, *Scientist, Indian Association for the Cultivation of Science, Kolkata*.

Prof. Debsankar Ray, *Scientist, Indian Association for the Cultivation of Science, Kolkata*.

Prof. Samaresh Bhattacharyya, *Department of Chemistry, Jadavpur University, Kolkata*.

Dr. Rajkumar Banerjee, *Scientist, Indian Institute of Chemical Technology, Hyderabad*.

Dr. Chittaranjan Patra, *Scientist, Indian Institute of Chemical Technology, Hyderabad*.

Dr. Ayan Datta, *Scientist, Indian Association for the Cultivation of Science, Kolkata*.

Dr. Sugata Ray, *Scientist, Indian Association for the Cultivation of Science, Kolkata*.

Dr. Biswadip Banerjee, *Scientist, Indian Institute of Chemical Biology, Kolkata*.

25. **Seminars/Conferences/Workshops organized & the source of funding**

a) **National:**

1. In collaboration with CRSI (Kolkata Chapter) entitled “National Chemistry Week” on 19-08-2006. (RKMVC College and CRSI)

   **Speakers:**

   Prof. B. C. Ranu, Scientist, Indian Association for the Cultivation of
Science, Kolkata. Topic- “Green Chemistry, Environments and Students.”
Prof. Sribhata Goswami, Scientist, Indian Association for the Cultivation of Science, Kolkata. Topic - “Chemical reactions with metal mediation.”
Prof. Debsankar Ray, Scientist, Indian Association for the Cultivation of Science, Kolkata. Topic - “Chemical Reactions under far from Equilibrium Conditions.”

2. UGC-Sponsored State-Level Seminar entitled “Interdisciplinary Approach in College- Level Chemistry” on 06-09-2011

*Speakers*
Prof. B. C. Ranu, IACS – Topic “Green Catalysis-An Important Tool for Chemical Transformation.”
Prof. D. S. Ray, IACS– Topic “The Rate of a Chemical Reaction”
Dr. K. Ghosh, Kalyani University– Topic “Task-Specific Molecular Design in Supramolecular Chemistry.”


*Speakers:* (All Speakers are Ex-Students of this Institution)
Prof. G. N. Mukherjee, Former Rashbehari Ghosh Professor, University of Calcutta, Topic: “Role of Metal ions in Biological System”
Dr. Sugata Ray, Scientist, Indian Association for the Cultivation of Science, Kolkata. Topic: “Some basic confusions and misunderstandings about ’disordered’ solids”
Dr. Biswadip Banerjee, Scientist, Indian Institute of Chemical Biology, Kolkata. Topic: “Targeting Cancer: From Small Molecules to Natural product As Inhibitor”
Dr. Prasanta Ghosh, Associate Professor, R. K. Mission Residential College, Narendrapur. Topic: “Stabilization of Organic Radicals Coordinated to Transition Metal Ions”

   **Speakers:**

   Prof. Binay K. Dutta, Chairman, West Bangal Pollution Control Board, Paribesh Bhavan, Sector-III, Salt Lake City, Kolkata – 700 098.


   Dr. Biswajit Chowdhury, Department of Applied Chemistry, Indian School of Mines, Dhanbad.

   Topic: “Mesoporous mixed oxide-supported gold nanoparticle for alcohol oxidation reaction using molecular O₂: A green and sustainable approach.”

   Dr. Mrinal Kanta Bhattacharyya, Associate Professor, Department of Biochemistry, School of Life Sciences, University of Hyderabad, Hyderabad 500 046.


   Dr. Ayan Datta, Assistant Professor, School of Chemistry, IISER, CET Campus, Thiruvananthapuram-695016, Kerala, Present Address: Department of Spectroscopy, Indian Association for the Cultivation of Science, Jadavpur, Kolkata – 700 032.

   Topic: “Chemical Bonding – Some not so Obvious Aspects.”

5. Faculty members’ Seminar on 16-12-2006 (Self-funded)

   **Speakers:**

   Dr. K. Pal; Topic-“Adiabatic Demagnetisation”

   Dr. R. K. Ray; Topic- Éffect of Cubic Field on P, D and F terms”

   Dr. C. Bandyopadhyay; Topic-“A Short Journey with Radicals.”

   Dr. A. Sen; Topic-“Importance of π bonding in the 2p sublevel and its control on structure, bonding and reactivity of molecules.”

6. Students’ Seminar

   (a) on 22-01-2008 (Self-funded):

   **Speakers:** 3rd Year Honours Students
Arani Chakraborty – Topic - “Chemical Structure of DNA.”
Parikshit Moitra - Topic - “Jahn Teller Distortion and its application to different chemical phenomena.
Kashinath Bhattacharyya - Topic - “Crystal Field Theory”
Somnath Ghosh - Topic - “Chemistry of Building Blocks of Life”

(b) Students’ Seminar on 05-12-2008 (Self-funded)
Speakers: 3rd Year Hons. Students
Arnab Sanyal - Topic - “A Short Journey with BioInorganic Chemistry.”
Soumya Mukherjee - Topic - “A Few Aspects of Diels-Alder Reaction.”
Amit Chakraborty - Topic - “The Phenomenon-Chemiluminisecence.”

7. Routine seminars (Self-funded)
Speaker:
Arnab Rudra (ex student, Ph. D. Scholar, University of Utah, USA)-
Topic - “Synthesis of ring A of Bryostatin.” on 30-01-2010
Speaker:
Dr. Kumaresh Ghosh (Reader, Kalyani University), - Topic -
“Supromolecular Chemistry” on 12-03-2010.

Speaker:
Dr. Rajkumar Banerjee, Scientist, Lipid Science and Technology Division, IICT, Hyderabad.

10. Seminar on “Nano Technology” on 04-12-2013 (Self-funded)
Speaker:
Dr. Chittaranjan Patra, Scientist and Ramanujan Fellow (DST, New Delhi), Biomaterial Group, IICT, Hyderabad.

b) International : Nil
26. **Student profile programme/course wise:**

<table>
<thead>
<tr>
<th>Name of the Course/programme (refer question no. 4)</th>
<th>year</th>
<th>Application received</th>
<th>Selected</th>
<th>Enrolled</th>
<th>Pass percentage</th>
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<tbody>
<tr>
<td>B. Sc.</td>
<td>2013</td>
<td>560</td>
<td>66</td>
<td>66</td>
<td>100</td>
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<tr>
<td>B. Sc.</td>
<td>2012</td>
<td>401</td>
<td>61</td>
<td>61</td>
<td>100</td>
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<tr>
<td>B. Sc.</td>
<td>2011</td>
<td>656</td>
<td>47</td>
<td>47</td>
<td>100</td>
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<td>B. Sc.</td>
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<td>66</td>
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<td>M. Sc.</td>
<td>2013</td>
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<td>36</td>
<td>100</td>
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<td>M. Sc.</td>
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<td>273</td>
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<td>36</td>
<td>100</td>
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<tr>
<td>M. Sc.</td>
<td>2011</td>
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<td>36</td>
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<td>2010</td>
<td>153</td>
<td>36</td>
<td>36</td>
<td>100</td>
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</table>

*M=Male *F=Female

27. **Diversity of Students**

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>% of students from the same state</th>
<th>% of students from other States</th>
<th>% of students from abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG</td>
<td>100</td>
<td>0</td>
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</tr>
<tr>
<td>PG</td>
<td>100</td>
<td>0</td>
<td>0</td>
</tr>
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</table>

28. **How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?**

<table>
<thead>
<tr>
<th>Name of Examinations</th>
<th>Year</th>
<th>Number of successful candidates</th>
</tr>
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<tbody>
<tr>
<td>JAM</td>
<td>2013</td>
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</table>
29. **Student progression**

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Against % enrolled</th>
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<tbody>
<tr>
<td>UG to PG</td>
<td>60%</td>
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<tr>
<td>PG to M. Phil.</td>
<td>nil</td>
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<tr>
<td>PG to Ph. D.</td>
<td>30%</td>
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<tr>
<td>Ph.D. to Post-Doctoral</td>
<td>nil</td>
</tr>
</tbody>
</table>

**Employed**
- Campus selection
- Other than campus recruitment

Majority of our students pursue PG Course after completion of undergraduate study. Some try for jobs in Govt. sector (Central / State Govt.) as well as in private sector through different competitive examinations. Five students are selected in 2013 by on-campus drive by ACC Cement Company.

Entrepreneurship/Self-employment: No Record

30. **Details of Infrastructural facilities:**

   a) Library - **College Library and Departmental Library**
   
   b) Internet facilities for Staff & Students - **Yes**
   
   c) Class rooms with ICT facility - 2

   d) Laboratories - **PG - 3; UG - 5; Research-2**

31. **Number of students receiving financial assistance from college, university, Government or other agencies**

   **Research scholars (2) – from CSIR**

   For UG & PG Students: All students of UG are availing different type of scholarship like Merit-cum-Means. INSPIRE, West Bengal Minority
Development Federation Corporation Scholarship, SC/ST/OBC Scholarships, Scholarship from Ramakrishna Mission, Belur Math and Ramakrishna Mission Institute of Culture, Golpark. Some of the poor and meritorious students also enjoy scholarships by exemption of tuition fees.

32. Details on student enrichment programmes (special lectures/ workshops/ Seminar) with external experts:

From 2011-2013 our department has organized three national seminars for our students studying in UG, PG and Ph.D courses in various current topics like “Interdisciplinary Approach in College- Level Chemistry”, “Modern Trends in Chemistry” and “Environment, Ecology and Chemistry”. Moreover many departmental seminars were organized where many eminent scientists has delivered their talks. All these are elaborately discussed in previous point no. 25. All these programmes are very much enriching to the students of our department for their present and future academic pursuit.

33. Teaching methods adopted to improve student learning.

- ICT-enabled classrooms are used for state-of-the-art Multimedia presentation.
- Project works are assigned to all post graduate students for better understanding of the subject matter.
- Class tests are frequently organized.
- Informal counseling and remedial coaching classes for the slow learners.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities.

As a part of the NSS activities the students and faculty members actively participate in Blood Donation, Free Eye operation Camp, Polio Vaccination and Campus cleaning.

35. SWOC analysis of the department and Future plans.

<table>
<thead>
<tr>
<th>Strengths</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Maintenance of discipline of both students and teachers</td>
</tr>
<tr>
<td>b. Good academic atmosphere</td>
</tr>
<tr>
<td>c. Availability of reading materials in the departmental library</td>
</tr>
<tr>
<td>d. Internet connection for both students and teachers</td>
</tr>
<tr>
<td>e. As a day-scorer college, students get ample opportunities to mix and interact with the outer society in a motive to build themselves as a responsible citizen with well developed head, heart and hand.</td>
</tr>
<tr>
<td>Weaknesses</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
</tr>
<tr>
<td>a. Lack of sufficient non-teaching staff to look after the laboratories</td>
</tr>
<tr>
<td>b. Shortage of full-time teacher</td>
</tr>
<tr>
<td>c. Insufficient number of permanent teaching staff.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Due to close association with other institutions of higher learning (closer to Kolkata) carrying out research work has become possible.</td>
</tr>
<tr>
<td>b. There are opportunities of offering a course in collaboration with Botany and Zoology</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Examination systems need to be modernized by giving emphasis on the class performances.</td>
</tr>
<tr>
<td>b. Syllabus to be regularly updated according the changes and development in science research.</td>
</tr>
<tr>
<td>c. To make more orientation of the students towards laboratory.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Future plans of the department</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. To get more research projects from different National funding agencies.</td>
</tr>
<tr>
<td>b. Improving research facility in the department.</td>
</tr>
<tr>
<td>c. Starting joint venture with research institutes for new research projects.</td>
</tr>
<tr>
<td>d. Engaging UG students in Project works.</td>
</tr>
<tr>
<td>e. Arrangement of weekly seminar by students and monthly or bimonthly seminar by external Resource Persons on a regular basis.</td>
</tr>
</tbody>
</table>
Ramakrishna Mission
Vivekananda Centenary College
Rahara, Kolkata-700118

Department of Mathematics

Departmental Profile    NAAC- SSR
Evaluative Report of the Departments

1. Name of the department: MATHEMATICS

2. Year of Establishment: 1974

3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.): UG

4. Names of Interdisciplinary courses and the departments/units involved:
   At present there is no inter-disciplinary course in the Department. But the teachers of Mathematics Department participate for teaching in the certificate course in Computer Applications.

5. Annual/semester/choice based credit system (programme wise):
   Annual system as per University Guideline

6. Participation of the department in the courses offered by other departments:
   The students of the Chemistry (Honours) and Physics (Honours) need to study Mathematics as a General Subject. The faculty members of the Mathematics Department teach this course to the Chemistry (Honours) and Physics (Honours) students.

7. Courses in collaboration with other universities, industries, foreign institutions, etc.:
   At present, there is no programme in the Department in collaboration with any other organization.

8. Details of courses / programmes discontinued (if any) with reasons. Nil

9. Number of Teaching posts

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Associate Professors</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>5</td>
<td>0</td>
</tr>
</tbody>
</table>

10. Faculty profile with name, qualification, designation, specialization,(D.Sc./D.Litt. /Ph.D./M.Phil.etc.,) (Appointed by the
<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Designation</th>
<th>Specialization</th>
<th>No.of Years of Experience</th>
<th>No.of Ph.D. Students Guided for the Last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Amit Kumar Biswas</td>
<td>Ph.D.</td>
<td>Associate Professor</td>
<td>Applied Mathematics</td>
<td>More than 30 years</td>
<td>---</td>
</tr>
<tr>
<td>Dr. Prasanta Seth</td>
<td>Ph.D.</td>
<td>Associate Professor</td>
<td>Pure Mathematics</td>
<td>More than 30 years</td>
<td>---</td>
</tr>
<tr>
<td>Sri Arabinda Hore</td>
<td>M.Sc.</td>
<td>Associate Professor</td>
<td>Mathematical Statistics</td>
<td>More than 30 years</td>
<td>---</td>
</tr>
</tbody>
</table>

**Senior Visiting Faculty:**

| Dr. Samares Pal        | Ph.D.         | Associate Professor| Applied Mathematics Mathematical Modelling in Ecology. Epidemiology. Ecosystem modelling. | 16 years | 4 (awarded) 4 (ongoing) |

**Guest Faculty:**

<p>| Pradyot Jana           | M.Sc.         | Pure Mathematics   | NA                                        | ---        |
| Sayan Saha             | M.Sc.         | Applied Mathematics | NA                                       | ---        |
| Rajkamal Sahu          | M.Sc.         | Pure Mathematics   | Topology. Graph Theory.                   | NA         | ---                      |
| Chandan Kamilya        | M.Sc.         | Applied Mathematics | NA                                       | ---        |</p>
<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Subject</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tahajuddin</td>
<td>M.Sc.</td>
<td>Applied Mathematics</td>
<td></td>
</tr>
<tr>
<td>Santanu Das</td>
<td>M.Sc.</td>
<td>Applied Mathematics</td>
<td></td>
</tr>
</tbody>
</table>

11. List of senior visiting faculty / Guest lecturer: 6

12. Percentage of lectures delivered and practical classes handled (programmewise) by temporary faculty: 60%

13. Student-Teacher Ratio (programme wise): 18.5:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled: Sanctioned=0, Filled=0.


16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received:
   1 faculty with ongoing project from National funding agency.
   Project Supervisor: Dr. Samares Pal.
   Title of the project: “The role of structural complexity, prey heterogeneity and refuges”. The project has been recommended for funding by Department of Science and Technology (DST), New Delhi, India.

17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:
   1 project funded by UGC
   Project Supervisor: Dr. Samares Pal.
   Title of the project: “Role of nutrient and toxin-producing phytoplankton in marine ecosystem: Mathematical observation”.
   Name of the agency from which the assistance was approved:
   i. University Grants Commission, Eastern Regional Office.
   ii. Sanction letter No. and date under which the assistance was approved:
       No. PSW-063/05-06 (ERO) Dated 21 Mar-06
   iii. Amount approved and utilized: Approved: Rs. 1,00,000/- and Utilized: Rs. 1,00,000/-
18. Research Centre/facility recognized by the University: Nil.
19. Publications:
   □ Publication per faculty: Dr. S. Pal – 38, Dr. A.K. Biswas - 10

Dr. S. Pal


Dr. Amit Kumar Biswas,


Number of papers published in peer reviewed journals(national/international) by faculty and students: Dr. S.Pal published 38 papers, Dr. A.K.Biswas published 10 papers.

Number of publications listed in International Database (For Eg:Web of Science, Scopus, Humanities International Complete, Dare Database-International Social Sciences Directory, EBSCO host, etc.): Dr. S.Pal – 37

Chapter in Books: Already mentioned
Books Edited: Nil
Books with ISBN/ISSN numbers with details of publishers: Nil
Citation Index: Already mentioned
SNIP: Nil
SJR: Nil
Impact factor: As stated above
h-index : Already mentioned
20. Areas of consultancy and income generated: Nil

21. Faculty as members in a) National committees b) International Committees c) Editorial Boards: Nil

22. Student projects:
The students of the final year have to submit their project assignments as prescribed in their University syllabus.

   a) Percentage of students who have done in-house projects including inter departmental/programme: Nil

   b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies: Nil

23. Awards/Recognitions received by faculty and students:

   Award/ Recognitions received by faculty:
   Dr. Samares Pal, Associate Professor in Mathematics
   1) Obtained DST-ICTP Fellowship in 2007
   2) Obtained INDO-US Research Fellowship for Post-Doctoral research at Georgia Institute of Technology, Atlanta, Georgia, USA in 2010.
   3) Selected under INSA Bilateral Exchange Programme 2014.

   Achievements of students:
   1) 14th in 2010 University Examination.
   2) 1st in 2011 University Examination.
   3) 1st in 2012 University Examination.
   4) 1st & 3rd in 2013 University Examination.
   5) 1st in 2013 JAM Examination.
   6) 9 students participated in ‘MADHAVA MATHEMATICS COMPETITION’ Organised by Department of Mathematics, S.P. College, Pune and Homi Bhabha Centre for Science Education, TIFR, Mumbai with financial support from NATIONAL BOARD FOR HIGHER MATHEMATICS.

24. List of eminent academicians and scientists/visitors to the department:

   i. Prof. S.C. Bagchi
      Indian Statistical Institute, Statistics and Mathematics unit, Kolkata.
   ii. Prof. Subenoy Chakraborty
      Department of Mathematics, Jadavpur University, Kolkata.
   iii. Prof. Joydev Chattopadhyay, Agricultural and Ecological Research Unit, Indian Statistical Institute, Kolkata.
iv. Prof. Sanjoy Sen, Department of Applied Mathematics, University of Calcutta.

v. Prof. M.K. Sen, Department of Pure Mathematics, University of Calcutta.

vi. Prof. Alok Goswami, Statistics and Mathematics Unit, Indian Statistical Institute, Kolkata.

25. Seminars/Conferences/Workshops organized & the source of funding a) National, b) International Workshop:

1. Seminar on ‘MODERN TRENDS OF MATHEMATICAL APPLICATIONS IN BIOLOGICAL AND OTHER SYSTEMS’. Organized By: Department Of Mathematics, Ramakrishna Mission Vivekananda Centenary College, Rahara in collaboration with Department of Mathematics, University of Kalyani. This was UGC-sponsored seminar held on 7th September, 2011.

2. Workshop on ‘MATHEMATICAL ANALYSIS & APPLICATIONS’, Organized By: Department of Mathematics, Ramakrishna Mission Vivekananda Centenary College, held on 21st April 2014.

26. Student profile programme / coursewise:

<table>
<thead>
<tr>
<th>Name of the Course/Programme (refer question no. 4)</th>
<th>Year</th>
<th>Applications received</th>
<th>Selected</th>
<th>Enrolled</th>
<th>M</th>
<th>F</th>
<th>Pass percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc. (Hons.)</td>
<td>2010</td>
<td>468</td>
<td>78</td>
<td>78</td>
<td>Nil</td>
<td></td>
<td>95.8%</td>
</tr>
<tr>
<td></td>
<td>2011</td>
<td>626</td>
<td>64</td>
<td>64</td>
<td>Nil</td>
<td></td>
<td>92.8%</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>278</td>
<td>58</td>
<td>58</td>
<td>Nil</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>423</td>
<td>63</td>
<td>63</td>
<td>Nil</td>
<td></td>
<td>97.6%</td>
</tr>
</tbody>
</table>

*M=Male *F=Female

27. Diversity of Students

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>% of students from the same state</th>
<th>% of students from other States</th>
<th>% of students from abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc.(Hons.)</td>
<td>99%</td>
<td>1%</td>
<td>Nil</td>
</tr>
</tbody>
</table>
28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

- **2010** – 3 cleared JAM, 11 pursued M.Sc. in different Universities of same and other states.
- **2011** – 4 cleared JAM, 26 pursued M.Sc.
- **2013** – 3 JAM, and the rest of passed out pursuing their Masters in different IIT's and eminent Universities through clearing admission test of respective universities.

29. Student progression

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Against % enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>70% (last 3 year’s average)</td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td>Nil</td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td>20%</td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td>No record</td>
</tr>
<tr>
<td><strong>Employed</strong></td>
<td></td>
</tr>
<tr>
<td>- Campus selection</td>
<td>Some students have been selected based on a 7-day workshop cum in-campus recruitment drive of different Companies like TCS.</td>
</tr>
<tr>
<td>- Other than campus recruitment</td>
<td>Some students have also opted for Government level services through State and National-level Entrance Examinations.</td>
</tr>
<tr>
<td>Entrepreneurship/Self-employment</td>
<td>No record</td>
</tr>
</tbody>
</table>

30. Details of Infrastructural facilities

- **Library**: yes
- **Internet facilities for Staff & Students**: yes
- **Class rooms with ICT facility**: Yes
- **Laboratories**: yes  Computer Laboratories = 2

31. Number of students receiving financial assistance from college, university, Government or other agencies.

Students are helped by the college to avail various Scholarships like INSPIRE, Merit-cum-Means, Zindal, West Bengal Minority Development Federation Corporation Scholarship, SC/ST/OBC Scholarship, Scholarships from Ramakrishna Mission, Belur Math and Ramakrishna Mission Institute of Culture, Golpark.
32. Details on student enrichment programmes (special lectures/workshops/seminar) with external experts:

1) UGC-sponsored seminar on ‘MODERN TRENDS OF MATHEMATICAL APPLICATIONS IN BIOLOGICAL AND OTHER SYSTEMS’. Organized By: Department Of Mathematics, Ramakrishna Mission Vivekananda Centenary College, Rahara in collaboration with Department of Mathematics, University of Kalyani on 21st April, 2014.

List of Speakers:
   i. Prof. S.C. Bagchi, Statistics and Mathematics Unit, Indian Statistical Institute, 203, B.T.Road, Kolkata: 700108.
      Topic: Prey-Predator Equation
   ii. Prof. Joydev Chattopadhyay, Agricultural and Ecological Research Unit, Indian Statistical Institute, 203, B.T.Road, Kolkata: 700108
      Topic: Two classical problems in ecology: Paradox of enrichment and plankton paradox.
   iii. Prof. Subenoy Chakraborty, Department of Mathematics, Jadavpur University, Kolkata: 700032
      Topic: Blackhole and recent developments.
   iv. Prof Sanjoy Sen, Department of Applied Mathematics, University of Calcutta, 92, A.P.C Road, Kolkata: 700009
      Topic: Mathematical Modelling of Earthquake Processes.


List of Speakers:
   1. Prof. M.K. Sen, Department of Pure mathematics, University of Calcutta.
   2. Prof. Alok Goswami, Statistics and Mathematics Unit, Indian Statistical Institute, Kolkata

33. Teaching methods adopted to improve student learning
   - ICT Enabled Classrooms for better Teaching-Learning.
   - Extensive study material is prepared for helping the students to grasp the subject.
   - Student counselling and remedial classes for slow learners.
   - Class Tests for constant evaluation.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

As a part of the NSS activities, the students and faculty actively participate
in Blood Donation, Free Eye operation Camp, Polio Vaccination and Campus cleaning.

35. SWOC analysis of the department and Future plans

Strength:
- Environment of the College, which attracts intelligent students from remote villages.
- Successful ex-students encouraging young minds to be hard-working.
- Friendly staff members encouraging students to learn the subject.
- Good collection of books in library.

Weakness:
- Shortage of permanent faculty.
- No research facility available in the department.
- No frequent workshop or seminar.

Opportunities:
- Students are specially guided for different competitive examinations.
- Scholarship for poor students.
- Opportunity of meeting eminent academicians and scientists through different seminars.

Challenges:
- To satisfy the increasing expectation of the students.
- Maintain the standard of the students.
- Attracting intelligent students to the college.

Future Plans:
- Input of permanent faculty staff.
- To start P.G. studies in Mathematics.
- To create facilities for job-oriented mathematical studies.
- To generate research facility in the department.
- Frequent workshop and seminar.
Ramakrishna Mission
Vivekananda Centenary College
Rahara, Kolkata-700118

Department of Botany

Departmental Profile  NAAC-SSR
### Evaluative Report of the Departments

1. **Name of the department:** BOTANY

2. **Year of Establishment:** 1974

3. **Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.):** UG, PG & PhD.

4. **Names of Interdisciplinary courses and the departments/units involved:** A Certificate course in Mushroom cultivation where all students of the other departments participate. Dr. S. Ghosh, faculty of Botany dept. is the coordinator.

5. **Annual/semester/choice based credit system (program wise):** UG in Annual & PG in Semester.

6. **Participation of the department in the courses offered by other departments:**
   - The teachers of Botany Department directly involved in teaching the Botany subject for all students of Zoology (Hons) of our college in Under Graduate level.

7. **Courses in collaboration with other universities, industries, foreign institutions, etc.:** Nil

8. **Details of courses / program discontinued (if any) with reasons.:** Nil

9. **Number of Teaching posts**

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Professors</td>
<td>Seven</td>
<td>Three</td>
</tr>
<tr>
<td>Asst.Professors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

10. **Faculty profile with name, qualification, designation, specialization,(D.Sc./D.Litt./Ph.D./M.Phil.etc..)**

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Designation</th>
<th>Specialization</th>
<th>No.of Years of Experience</th>
<th>No.of Ph.D. Students Guided for the Last 4 years</th>
</tr>
</thead>
</table>
Dr. B. Ghosh  M.Sc.  PhD  Asso.Prof.  Cellbiology, Genetics  Biotechnology  14 years  Awarded two
Guided five

Dr. S. K. Ghosh  M.Sc. PhD  Asso.Prof.  Mycology, Plant  pathology, Microbiology  15 years  Awarded one
Guided five

11. List of senior visiting faculty:
Prof. Dr. T. Jha,
Prof. Dr. A. Mukherjee,
Dr. A. Ghorui,
Prof. Dr. P.D. Ghosh,
Prof. Dr. S.C.Roy,
Dr. M. Majumdar,
Dr. A. Banerjee.

12. Percentage of lectures delivered and practical classes handled (programme wise)
By temporary faculty: UG- 50%, PG- 65%

13. Student-Teacher Ratio (programme wise):
UG- 23 : 1, PG- 3.25 : 1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Laboratory</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Laboratory Attendant</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

15. Qualifications of teaching faculty with DSc / D.Litt / Ph.D / MPhil / PG:

<table>
<thead>
<tr>
<th>Permanenent Faculty</th>
<th>Sanctioned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching faculty with Ph. D.</td>
<td>2</td>
</tr>
<tr>
<td>Teaching faculty with PG.</td>
<td>1</td>
</tr>
</tbody>
</table>

16. Number of faculty with ongoing projects from a)National b)International funding agencies and grants received:

Ramakrishna Mission Vivekananda Centenary College, Rahara  Self Study Report
<table>
<thead>
<tr>
<th>Duration of the Project</th>
<th>Title of the project</th>
<th>Name of the funding agency</th>
<th>Total Amount sanctioned ( Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.08.2011-11.08.214</td>
<td>Isolation, characterization of fungi from different natural sources of W. Bengal and their application as biocontrol agents against shoot and fruit borer insect (<em>Leucinodes orbonalis</em>) of brinjal</td>
<td>Dept of Sciences &amp; Technology DST (Gov. of WB) (Major project) (Dr. S.K.Ghosh)</td>
<td>12,52,334/-</td>
</tr>
<tr>
<td>26.012.13-26.12.16</td>
<td>Study of Fungal Diseases of Some important Medicinal Plants In 24-Parganas, West Bengal</td>
<td>NBPB (AYUSH), Ministry of Health &amp; Family welfare. Gov. of INDIA (Major project) (Dr. S.K.Ghosh)</td>
<td>17,23,600/-</td>
</tr>
<tr>
<td>2008-2011</td>
<td>In vitro propagation of indigenous medicinal plants.</td>
<td>West Bengal Biodiversity Board (Dr. B. Ghosh) PI</td>
<td>12,55,000/-</td>
</tr>
<tr>
<td>2009-2012</td>
<td>Plant DNA Bank of Economic, Endemic and Endangered species of West Bengal</td>
<td>West Bengal Biodiversity Board (Dr. B. Ghosh) CI</td>
<td>24,76,100/-</td>
</tr>
<tr>
<td>2011-2014</td>
<td>DNA bank &amp; in vitro conservation of wild aromatic &amp; non-aromatic rice varieties of West Bengal as an approach for ex-situ conservation”</td>
<td>UGC, New Delhi (Dr. B. Ghosh) PI</td>
<td>10,96,200/-</td>
</tr>
<tr>
<td>2012-2014</td>
<td>“In vivo and in vitro conservation of gradually vanishing native chilli (<em>Capsicum</em>) diversity from West Bengal’s agricultural milieu”,</td>
<td>Dept of Sciences &amp; Technology DST (Gov. of WB) (Dr. B. Ghosh) PI</td>
<td>18,64,434/-</td>
</tr>
<tr>
<td>2013-2016</td>
<td>“Cytological &amp; Phytochemical analysis molecular characterization &amp; in vitro propagation of some Indian species of <em>Ornithogalum L.</em> As Co-I</td>
<td>UGC, New Delhi (Dr. B. Ghosh) CI</td>
<td>Rs. 10,74,800/-</td>
</tr>
<tr>
<td>2013-2016</td>
<td>“Ecotyping, chemotyping and genotyping of some important drug yielding plants of Eastern India for authentic identification, selection and conservation of elites”</td>
<td>DBT (Dr. B. Ghosh) PI</td>
<td>24,87,000/-</td>
</tr>
</tbody>
</table>
17. Departmental projects funded by DST-FIST; UGC, DBT, ICSSR, etc. and total grants received:

<table>
<thead>
<tr>
<th>Year</th>
<th>Project Description</th>
<th>Funding Agency</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014-17</td>
<td>Evaluation of Cytogenetics diversity in some genera of Cucurbitaceae and Characterization of Sex linked genes in Coccinia through SCAR marker approach</td>
<td>DBT (Dr. B. Ghosh)</td>
<td>43,18,200/-</td>
</tr>
</tbody>
</table>

18. Research Centre/facility recognized by the University: Nil

19. Publications:

- **Publication per faculty:**
  - Dr. B. Ghosh - 45;
  - Dr. S. K. Ghosh - 33

Publication of Dr. B. Ghosh


*Ramakrishna Mission Vivekananda Centenary College, Rahara Self Study Report*


43. Haque SM and Ghosh B (2013) High frequency microcloning of Aloe vera and their true-to-type conformity by molecular cytogenetic assessment of two
years old field growing regenerated plants. Botanical Studies 54:46- 55. (Springer) ISSN: 1817406X; H Index: 28; SJR: 0.589


Publication of Dr. S.K Ghosh

1. Swapan kumar Ghosh and S.Pan 1991. Control of leaf blight of taro (Colocasia esculenta (L) Schott) caused by Phytophthora colocasiae Racib. through fungicides and selection of variety. J of Mycopathol. Res. 29 (2); 133-140


29. S.K. Ghosh, S. Roy and M A Hassain 2013 Studies on The Incidence Of Anthracnose Disease In Different Varieties Of Mango (Mangifera indica L.) And
Its In Vitro Biocontrol Measures. *American J. of agriculture Science Engineering and Technology*, 2(5):11-20 [ISSN:2158-8104(online),2164-0920(print)]


- **Number of papers published in peer reviewed journals(national/ international) by faculty and students:** Dr. B. Ghosh- 45; Dr. S. K. Ghosh-33
- **Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database-International Social Sciences Directory, EBSCO host, etc.):**
  - Dr. B. Ghosh and Dr. S. K Ghosh both have about 60% of the publication.
- **Monographs**
- **Chapter in Books:** Dr. B. Ghosh-Two (invitation accepted from Editor)
- **Books Edited:** Dr. S.K. Ghosh in five books
- **Books with ISBN/ISSN numbers with details of publishers:**
- **Citation Index:** Already mentioned previously
- **SNIP:**
Dr. Biswajit Ghosh

GenBank Accession numbers (NCBI-DataBase) for Rice (Submitted by B.Ghosh)
Bhog dhan (Accession: JQ345686),
Chini atap (Accession: JQ345687),
Khas dhan (Accession: JQ345688),
Nayanmuni (Accession: JQ345689)
Roygorh (Accession: JQ345690)

20. Areas of consultancy and income generated: Nil

21. Faculty as members in a) National committees b) International Committees c) EditorialBoards:

Sri Bidyut Bhushan Chattopadhyay is the founder member of ‘Prabir Chatterjee Research Foundation’, Department of Botany, Calcutta University.

22. Student projects:
Summer Training by Dr. B. Ghosh

1. Pritam Lodh (Jiwaji University is a public university in Gwalior)
2. Subhabrata Paul (Jiwaji University is a public university in Gwalior)
3. Subhankar Bhowmik (SOA University, Khandagiri Square, Bhubaneswar)

Twenty three Inter departmental projects of P.G department guided by Dr. B. Ghosh.

c) Percentage of students who have done in-house projects including interdepartmental/programme: 100 %

d) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/other agencies: Few Students

23. Awards/Recognitions received by faculty and students
Dr. Biswajit Ghosh

Award received : Young Scientist Award in Plant Biotechnology At First International Conference on Bio-Resource & Stress Management.(February 6-9, 2020)
Dr. Swapan Kr Ghosh

Award received: "Distinguished Scientist Award" presented by the committee of National level Conference “Biodiversity :Threats & Conservation through traditional & biotechnological approaches : organized by Dum Dum Matijheel College, Kol -74 in collaboration with Bose Institute & Botanical Survey of India, sponsored by : UGC, CSIR, DST.

Recipient of “UGC travel grant” to visit Foreign country for presentation of Paper-25th May -2nd June , 3rd International Academic Conference held on 27th May -31st May 2012, organized by IJAS, Harvard University Campus, Boston, USA: Title of research Paper: Study of ecofriendly control of Penicillium fruit rot of Citrus reticulatus by yeast

From the student corner

1. Mr. Prasanna Dutta (B.Sc. Botany Hons. Student) Secure First Position in "Young Graduates for Leadership in Biotechnology Programme- 2013" at SOA University, Bhubaneswar, Odisha, held on 8-9 February 2013, at Centre of Biotechnology, Bhubaneswar.

2. Mr. Tuhin Chatterjee (Research Fellow in Botany) Secure First Position (Poster presentation competition) in UGC and DST sponsored National Seminar on “Biodiversity : Threats and Conservation through Traditional and Biotechnological Approaches” held on February 4-6, 2012, Kolkata

Securing Rank in B.Sc. University Examinations

2013: 1st, 6th & 8th
2012: 1st

24. List of eminent academicians and scientists/visitors to the department:

- Prof. S. Sen, University of Calcutta
- Prof. S.K. Sen, IIT Kharagpur
- Prof. S. Jha, University of Calcutta
- Prof. S.C. Roy, University of Calcutta
- Prof. S.K. Datta, NBRI, Lucknow
- Prof. S. Das, Bose Institute, Kolkata
- Prof. K. R. Samadder, Kalyani University
25. Seminars/Conferences / Workshops organized & the source of funding a) National, b) International Workshop:

<table>
<thead>
<tr>
<th>Funded agency &amp; Sanction No. &amp; Date</th>
<th>Name of Activity</th>
<th>Amount Sanctioned (Rs.)</th>
<th>Topic</th>
<th>Date of occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>UGC &amp; CW-400/10-11(ERO) dated 22-3-2011</td>
<td>State Level Seminar in Botany Dept.</td>
<td>1,00,000/-</td>
<td>Plant Biotechnology- A New Gene Revolution</td>
<td>08-09-2011</td>
</tr>
<tr>
<td>UGC &amp; CW-225 /12-13 dated 22-01-2013</td>
<td>National Level Seminar in Botany Dept.</td>
<td>Rs. 1,12,500/-</td>
<td>Botanical Resources and Human Welfare</td>
<td>06-09-13</td>
</tr>
<tr>
<td>UGC &amp; CW-081/10-11 (ERO) dated 5th October 2010</td>
<td>Workshop</td>
<td>95,000/-</td>
<td>Hands on Training on basic techniques of plant tissue</td>
<td>7-11 December 2010</td>
</tr>
<tr>
<td>Sponsored by West Bengal State Council of Science &amp; Technology (348(21)/WBSCST/F/0408/12 dt. 16.04.2013</td>
<td>Workshop</td>
<td>40,000/-</td>
<td>Food Security &amp; Genetically Modified Crops</td>
<td>20-09-2013</td>
</tr>
</tbody>
</table>
26. **Student profile programme / coursewise:**

<table>
<thead>
<tr>
<th>Name of the Course/programme (refer question no. 4)</th>
<th>Applications received</th>
<th>Selected</th>
<th>Enrolled</th>
<th><em>M</em></th>
<th><em>F</em></th>
<th>Pass percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc , 2013</td>
<td>195</td>
<td>51</td>
<td>51</td>
<td>-</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>B.Sc , 2012</td>
<td>152</td>
<td>68</td>
<td>68</td>
<td>-</td>
<td>87.5%</td>
<td></td>
</tr>
<tr>
<td>B.Sc , 2011</td>
<td>251</td>
<td>49</td>
<td>49</td>
<td>-</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>B.Sc , 2010</td>
<td>161</td>
<td>63</td>
<td>63</td>
<td>-</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>M.Sc , 2012</td>
<td>44</td>
<td>23</td>
<td>23</td>
<td>-</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>M.Sc , 2013</td>
<td>68</td>
<td>29</td>
<td>29</td>
<td>-</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

*M=Male  *F=Female

27. **Diversity of Students**

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>% of students from the same state</th>
<th>% of students from other States</th>
<th>% of students from abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc</td>
<td>99%</td>
<td>1%</td>
<td>nil</td>
</tr>
<tr>
<td>M.Sc</td>
<td>100%</td>
<td>nil</td>
<td>nil</td>
</tr>
</tbody>
</table>

28. **How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civilservices, Defenseservices, etc.?** Nil

29. **Student progression**
<table>
<thead>
<tr>
<th>Studentprogression</th>
<th>Against% enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>75%</td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td>----</td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td>10%</td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td>----</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employed</th>
<th>Good number of our students pursue PG Course after completion of undergraduate study. Some try for jobs in Govt. sector (Central / State Govt.) as well as in private sector through different competitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus selection</td>
<td></td>
</tr>
<tr>
<td>Other than campus recruitment</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurship/Self-employment</td>
<td>No Record</td>
</tr>
</tbody>
</table>

30. Details of Infrastructural facilities

a) Library: Yes

b) Internet facilities for Staff & Students: Personal departmental and open access internet facility to the students in library

c) Class rooms with ICT facility: Yes

d) Laboratories: Well furnished laboratories along with updated instruments for the U.G, P.G students and researchers.
Total Laboratories = 7

31. Number of students receiving financial assistance from college, university, Government or other agencies:

Research scholars (7) – from different funded research projects

For UG & PG Students: All students of UG are availing different type of scholarship like Merit-cum-Means. West Bengal Minority Development Federation Corporation Scholarship, SC/ST/OBC Scholarships, Scholarships from Ramakrishna Mission, Belur Math and Ramakrishna Mission Institute of Culture, Golpark. Some of the poor and meritorious students also enjoy scholarships by exemption of tuition fees.

32. Details on student enrichment programs (special lectures/workshops/Seminar) with external experts
A lecture on *Enzyme Technology and its prospects* was delivered on 13th February, 2014, by Dr. Doukani Koula, Professor of Nature and Life Sciences, Dept. of Nature and Life Sciences, University of Ibn Khladoun- Tiret, Algeria. The Lecture was organized by the Dept. of Botany of our college.

Moreover different experts have come in three (3) national seminars, two(2) workshops arranged in last four years.

- Prof. S. Jha, Programme Co-ordinator, CAS in Botany, University of Calcutta
- Prof. S. K. Sen, Advanced Laboratory for Plant Genetic Engineering, Indian Institute of Technology, Kharagpur-721302
- Prof. Sampa Das, Head, Plant Biology Division, Bose Institute, Kolkata.
- Prof. Timir baran Jha, Post graduate Dept of Botany, Presidency College
- Dr. Moumita Banerjee, Centre of Advance study in Botany, University of Calcutta
- Dr. S K Datta, Former Co-ordinator & Head, Floriculture Division, CSIR-NBRI, Lucknow CSIR, Emeritus Scientist, Bose Institute, Kolkata.
- Prof. Kunal Mukhopadhyay, Head, Dept. of Biotechnology, BIT- Mesra, Ranchi
- Prof. Ambarish Mukherjee, Department of Botany, University of Burdwan
- Prof. Sukanta Kumar Sen, Department of Botany, Visva-Bharati University
- Prof. Satyesh Chandra Roy, former Head & Coordinator Centre of Advanced Study in Botany, University of Calcutta.
- Dr. Somnath Bhattacharyya, Head, Department of Genetics, Crop Research Unit, Bidhan Chandra Krishi Viswavidyalaya, WB

33. Teaching methods adopted to improve student learning:
Regular board work and power point presentation during lectures. Maintaining class tests and special enquiry to the students about their study and problems with class teachers and principal.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities
As a part of the NSS activities the students and faculty actively participate in Blood Donation, Free Eye operation Camp, Polio Vaccination and Campus cleaning.

35. SWOC analysis of the department and Future plans

**SWOC (BOTANY)**
Strengths

The Department stands today as a unique centre in this region of the state where multidisciplinary teaching and research in plant sciences has established permanent roots. The uniqueness of the Department essentially lies in the fact that within the Department’s faculty, there are active researchers representing different areas of plant sciences. We believe that in order to be effective, postgraduate teaching must be done by teachers who are also actively involved in research in their respective areas of specialization. The Department has organized several national and regional symposia on contemporary topics. The Department has also organized Workshop for Hands-on Training on Plant tissue Culture part of Plant Biotechnology for Students of B.Sc & M.Sc. and JRF of various College/University.

There is no need to prove that this Department has secure top position among different colleges in our University by their regular different activities.

1. This department always takes leading role to develop low cost student friendly practical protocols/ manuals those are introduced time-to-time in updated new syllabus.

2. This department always important role for making new/ up gradation of syllabus at UG level of the University. Faculty member(s) of this department always represent as a member in “Board of Studies in Botany’ of our University.

3. Student-Teacher regular interaction to maintain personal touch gives our main teaching strength.

4. Special and remedial classes are arranged regularly for weak students.

5. The non-teaching staff of the department actively assists the faculty in carrying out its teaching and practical classes.

At UG Level

a) Sufficient Numbers of fully equipped exclusive laboratory for
   I. Lab for Part-I students
   II. Lab for Part-II students
   III. Lab for Part-III students
b) Botanical Museum
c) Herberium of different Plants
At PG. level

I. Lab for General practical
II. Lab for Plant Biochemistry
III. Lab for Cytology & Genetics (special)
IV. Lab for Plant Biotechnology (proposed)
V. Lab for …………………..(Proposed)
VI. Facility for internet based practical (Bioinformatics)
VII. Providing e-Book/ e-Chapters/ Research Reprint from various Journals
VIII. Instruments other than regular practical facility- Trained for handling of various Major Instrumentations present in our Research Lab or Central facilities.

IX. Effective Practical Examination System:
   a. Regular assessment of Practical classes rather than single Practical Examination
   b. Grand viva voce (External examiners)
   c. Dissertation of each student
   d. Student Seminar

X. Good Teacher/Student Ratio.

XI. LCD projection facility in Lecture theatre

XII. Specialized Guest teachers from reputed organizations.

At Research Level

1.a. DST-FIST facility
1.b. Department received Research Grants from various agencies: Nine Major Research projects & Four Minor Research Projects
2. Regular Ph.D. Programme
3. Summer Training for PG students (Biotechnology) from other institutes
4. Collaborative research: Our Department already establishes a collaborative research work with –
   a. University of Calcutta, W.B.
   b. Presidency University, W.B.
   c. Burdwan University, W.B.
   d. Kalyani University, W.B.
   e. Visva-Bharati, W.B.
   f. S.O.A. University, Bhubaneswar. Odisha.
5. Regular Research Publication

6. State of art facility in Plant Biotechnology Lab (Funded by different agencies as Major Research Grants)

7. *in vitro* Plant based Pharmaceutical compound synthesizing facility Lab (Funded by Major Project)

8. Priority based Unique Germplasm Centre ((Funded by different agencies as Major Research Grants)
   (a) Polyhouse with Mist chamber
   (b) Shade-Net House
   (c) Seed Bank unit
   (d) DNA Bank unit

9. Mycology & Pathology Lab

10. Mushroom Culture Unit.

11. Experimental Garden

12. The Department has a well developed documentation facility which is accessible to all the faculty, research scholars and postgraduate students. The facility includes contemporary research papers collected from different library in Xerox copies in binding form or spiral binding or in DVD formats.

**Some of the equipments available in the department are:**

1. Microscope (Bright field) with Photography attachment (Leica, Germany)
2. Stereo Zoom Microscope with Photography attachment (Leica, Germany)
3. Gel Electrophoresis system for Nucleic Acid (BioRad, USA)
4. Gel Electrophoresis system for Protein (Biotech Inc)
5. Thermo cycler (BioRad, USA)
6. Gel Documentation System (BioRad, USA)
7. UV-trans-Illuminator (UVP, UK)
8. Precision Balance (Mettler Toledo, USA)
9. Deep freezer (-20°C) (Blue Star)
10. Ultra cold Freezer (-86°C)
11. Cold Centrifuge (Beckman, Germany)
12. Cold Centrifuge (REMI)
13. Gyratory Shakers (different sizes)
14. Incubator Shaker (REMI)
15. Plant Growth Chamber
16. Laminar Air Flow (different models)
17. Spectrophotometer
17. Centrifuge (different models)
18. Fridge Dryer
19. Autocalves (different models)
20. Regulated Water- bath (different models)
21. BOD Incubators (different models)

Weaknesses
Lacunae:
• Major students are come from 1st generation in formal education system, that’s why they initially feel uneasiness.
• Student /Teacher ratio at UG Level.
• Proper Lab Technician
• Computer Technician
• Departmental web site
• Stable Electricity (24 X 7)
• Less airconditioned Lab
• Departmental Clerical staff
• Proper Store Keeper

Opportunities
a. Role as lead Department: Hands on- training for students of different colleges & Universities in the field of modern Plant Science.

b. Inter-disciplinary research work: Joint venture Botany-Zoology-Chemistry
d. Linkages with other institutions of higher learning (closer to Kolkata) more research work may become possible.

Challenges
1. First challenge to MOTIVATE maximum students towards basic science carrier rather than technical subjects.
2. Challenge to involve maximum students from those is coming from 1st generation-Education family background for main stream basic science education.

38. Future plans of the Department

I. For Academic Improvement
a. Recruitment of Post Doctoral Fellow of Nationally Selected candidates.
b. Try to involve freshly Retired Senior Scientists of various research institute & freshly Retired Professors, those are involved in frontier plant science research & teaching as emeritus position in our Department.
c. To get more research projects from different National funding agencies
d. Improving research facility in the department

e. More collaboration with different research institutes.

Ramakrishna Mission Vivekananda Centenary College
Rahara, Kolkata - 700118

Department of Zoology
3. Evaluative Report of the Departments

1. Name of the department: ZOOLOGY.


3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters, Integrated Ph.D., etc.):
   B. Sc. with Honours in Zoology (UG).

4. Names of Interdisciplinary courses and the departments/units involved:
   At present, there is no inter-disciplinary course in the Department. But our Faculty members of the Zoology Department are planning to work on inter-disciplinary major research projects with the Faculty of Botany Department.

5. Annual/ semester/choice based credit system (programme wise):
   The college is affiliated to the West Bengal State University. According to the norms of the University the examination process is following the annual system at present. But the faculty members of the Department frequently take course to various types of internal assessments like class tests etc. for enriching the academic standard.

6. Participation of the department in the courses offered by other departments:
   The students of the Botany (Honours) need to study Zoology as a General Subject. The faculty members of the Zoology Department teach this course to the Botany (Honours) students.

7. Courses in collaboration with other universities, industries, foreign institutions, etc.:
   As a part of the syllabus, field work is a compulsory portion for the students of Zoology. So the faculty members and the students frequently visit the Biodiversity hotspots. The Department conducts field tours in collaboration with Waste Water Aquaculture Division, Patulia, North 24 Parganas under CIFA and Zoological Gardens, Alipore, Kolkata.
8. Details of courses/programmes discontinued (if any) with reasons:
Nil

9. Number of Teaching posts

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Professors</td>
<td></td>
<td>3 (Through Promotion)</td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. /Ph.D. / M. Phil. etc..)

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualification</th>
<th>Designation</th>
<th>Specialization</th>
<th>No. of Years of Experience</th>
<th>No. of Ph.D. Students guided for the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. DEBAJYOTI CHATTOPADHYAY</td>
<td>M. Sc., Ph. D.</td>
<td>Associate Prof. &amp; HoD</td>
<td>Cytogenetics</td>
<td>36 Yrs (Hons. &amp; Gen)</td>
<td>-</td>
</tr>
<tr>
<td>Dr. PRADYOT KUMAR MEDDA</td>
<td>M. Sc., Ph. D.</td>
<td>Associate Prof.</td>
<td>Entomology</td>
<td>27 Yrs. in College plus 7yrs &amp; 7 months in Kalyani University</td>
<td>-</td>
</tr>
<tr>
<td>Dr. DEBKUMAR DATTA</td>
<td>M. Sc., Ph. D.</td>
<td>Associate Prof.</td>
<td>Fish &amp; Fisheries</td>
<td>24 Yrs (Hons. &amp; Gen)</td>
<td>-</td>
</tr>
</tbody>
</table>

11. List of senior visiting faculty:

List of the Faculty appointed by the Management:
1. Dr. Pannalal Das
2. Br. Shrutichaitanya
3. Mr. Shubhojit Maity

12. Percentage of lectures delivered and practical classes handled (Programme wise) by temporary faculty:
UG Part-I & II & III –Theory- 45%

13. Student -Teacher Ratio (Programme wise):

UG – 17:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled: Academic support staff (technical): Administrative staff:

Graduate Laboratory Instructor: Sanctioned = 1, Filled up = 0.
Laboratory Attendant: Sanctioned = 3, Filled up = 1.
Laboratory Attendant (appointed by Management) = 1.

15. Qualifications of teaching faculty with D. Sc. /D. Litt/ Ph. D. / M. Phil. / PG:

Teaching Faculty with Ph.D. = 4.
Teaching Faculty with M.Sc. = 2.

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received –

Two Major Research projects have been submitted to West Bengal DST for their final sanction.

- Title of the Project: Agricultural application of entomopathogenic fungi and their products isolated from different natural sources as biocontrol agents against aphid insect (Aphis gossypii) of papaya (Carica papaya) and growth promoting factor of papaya.

- (Project Investigators: Principal Investigator - Dr. P.K. Medda, Department of Zoology and Co-Investigator - Dr. S. K. Ghosh, Department of Botany, Ramakrishna Mission Vivekananda Centenary College, Rahara, Kolkata).

- Title of the Project: Mass eradication of mosquitoes using fungi and fungal extracts as biocontrol agents.

- (Project Investigators: Principal Investigator - Dr. D. Datta, Department of Zoology and Co-Investigator - Dr. S. K. Ghosh, Department of Botany, Ramakrishna Mission Vivekananda Centenary College, Rahara, Kolkata).

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received:

a) Minor Research Project- funded by UGC (Ref. No. – PSW – 192/11-12 (ERD) dt. 25/1/2012. Tenure of the project: 8/2/2012 to 8/7/2013.

Title: “Study of Cardiovascular Fluid Mechanics and its Mathematical Model to Combat the Cardiac Arrest”. Principal Investigator – Swami Kamalasthananda, Principal (Actg.), RKMVC College, Rahara, Kol – 118.
Sanctioned amount – Rs. 1,23,000/=.

b) Dr. P K Medda: A minor research project entitled “Aphids (Homoptera: Insecta) of Western Himalaya with a reference to biology and gall formation”; from 1990 to 1992; financed by U.G.C., Govt. of India. Sanctioned Amount: Rs. 10,000/-

18. Research Centre /facility recognized by the University - Nil

19. Publications:
   a) Publication per faculty:
      D. CHATTOPADHYAY: Publications = 2
      P. K. MEDDA - Publications: 16
         Abstracts: 14
   b) List of Research Publication:
      A) D. CHATTOPADHYAY


      B) P. K. MEDDA - Full Paper: 16 (6 Papers in Foreign Journals);
         Abstracts of Papers: 14

      TOTAL LIST OF RESEARCH PUBLICATIONS
      a) PAPERS:


b) ABSTRACTS OF PAPERS:


10. **MEDDA, P. K.** and CHAKRABARTI, S. Aphids on Cyperaceae in India. *National Symposium on Aphids in Agriculture and Forestry, Department of Zoology, University of Kalyani, Kalyani – 741 235, West Bengal, November 24-25, 2004.*


**C) D. DATTA – 23.**

**List of Publications of DEBKUMAR DATTA, Associate-Prof-in-Zoology:**


3. Sudip Chakraborty, Soumen Mal and **Debkumar Datta 2013** ‘Dependency of Forest Fringe Villagers on Natural Resources of Joypur Forest,


- Number of papers published in peer reviewed journals (national / international) by faculty and students:
  - P. K. MEDDA : 09 papers in National and International journals.

- Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.) :
  - 09

- Monographs : Nil

- Chapter in Books: Two

Books Edited:
D. CHATTOPADHYAY – Author: Books 25

List of Books:
- Published by – Kalamandir, 28 B, Surja Sen Street, Kolkata – 700009.
  (Co Authors – Dr. Salil Raha, and Dr. Binayak Misra)
- Published by – Akshar Prakashani, 36/2, Beniatola Lane, Kolkata – 700009.
  (Co Author – Dr. Syama Prosad Ghose)
- Published by – Prantik, 18, Dr. Kartik Bose Street, Kolkata – 700009.
  (Co Authors – Prof. Salil Chaudhury, and Dr. Dharmadas Sarkar)
- Published by- Moulik Library, 18B, Shyamacharan Dey Street, Kolkata – 700073.
  (Co Authors – Dr. Jibesh Guha, and Mr. S.S. Santra)
- Published by Book Syndicate Pvt. Ltd. 35, College Street, Kolkata – 700073.
  (Book No. 12, 13, &14 Co Author- Dr. Arup Mitra)
  (Book No. 12, 13, &14 Co Author- Dr. Arup Mitra)
  (Book No. 15 & 16 Co Author – Mr. Debasis Datta).
  (Book No. 17 & 18 Co Author – Dr.Arup Mitra & Mr. Debasis Datta).
  (Book No. 19 & 20 Co Authors - Dr. Arup Mitra & Dr. Sumantra Chanda).

- Books with ISBN/ISSN numbers with details of publishers: Nil
- Citation Index:


**PAPER CITATIONS** (in detail):

- **SNIP**: Nil
- **SJR**: Nil

- **Impact factor**:

<table>
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<tr>
<th>Journal</th>
<th>Impact Factor</th>
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<tbody>
<tr>
<td>1) Systematic Entomology</td>
<td>2.876</td>
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<tr>
<td>2) Proceedings of Indian Academy of Sciences (Animal Sciences)</td>
<td>1.759</td>
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<tr>
<td>3) Entomologia Generalis</td>
<td>0.214</td>
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<td>4) Entomon</td>
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<td>5) Oriental Insects</td>
<td>0.173</td>
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</table>
6) Proceedings of the National Academy of Sciences, India | 0.055

- h-index: Nil

20. Areas of consultancy and income generated: Nil

21. Faculty as members in a) National committees  b) International Committees  c) Editorial Boards….

**DR. DEBAJYOTI CHATTOPADHYAY:** - Fellow of Zoological Society of India, 1995.

**P. K. MEDDA:** a) Life Member, Indian Science Congress Association  
   b) Life Member, The Zoological Society, Kolkata  
   c) Life Member, The Zoological Association, Burdwan

**DEBKUMAR DATTA:** (a) Member, U G Board of Studies, West Bengal State University, Barasat, 2012-2014. (b) Member, U G Board of Studies, University of Burdwan, Burdwan, 2007-2012.

22. Student projects

a) **Percentage of students who have done in-house projects including inter departmental/ programme**

   The students undergo Field work projects as a part of the B.Sc Part-I and Part-II syllabuses. The Project work comprises of a study on birds, butterflies, dragonflies and other insects.

   Some of the students of the Zoology Department are selected for a One-Year UGC-Recognized Career Oriented Certificate Course in Mushroom Cultivation under the supervision of the Department of Botany of the college.

   Inter-College Poster Competition was organized along with the National Level Seminar organized by the Zoology Department of the college on 12th January, 2013.

   The student participants:

   1. Chinmoy Ghosh (on Metamorphosis of honey bee);
   2. Rahul Poddar (on Habitat of Chironomids);
   3. Partha Ganguly (on XNA);
   4. Sagnik Chakraborty (on Some local dragon flies);
   5. Jyotirmoy Dutta (on Fries & Fingerlings Of Major Carps);

   - West Bengal DST sponsored **Exhibition** organized during the Celebration of the **Golden Jubilee Of this College and 150th Birth Anniversary of Swami Vivekananda** - students participated - in Exhibition - January 06 – 12, 2013:

   [Topics 1 to 10, enlisted below]:

   1. **Insect trap (model)** - Ahin Dey Sarkar, Sagnick Chakrabarti & Chinmoy Ghosh;
   2. **Bio terrorism** - Anirban Chakborty & Sourav Kundu;
3. Some Local Dragonfly - Sagnick Chakrabarti;
4. Metamorphosis of honey bee (model and live specimen), - Chinmoy Ghosh & party;
5. Diseases of honey bee (live specimen), – do -
6. Communication of honey bee, – do -
7. Hive formation of honey bee (model); – do -
8. XNA (model) - Partha Ganguly;
9. Artificial Butterfly Gardening - Wrick Chakborty, & Sumonto Aditya; and

b) Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories/Industry/other agencies:

One candidate (Ankush Adhikary: presented poster in 100th Indian Science Congress, Kolkata: Jan 3-7, 2013).

23. Awards / Recognitions received by faculty and students:


Sri Sourav Kundu, B. Sc. Zoology (Hons,) IInd year, Stood 1st in Poster competition (Vivekananda the nation builder) at Asutosh college organized by Asutosh college in February- 2013.

24. List of eminent academicians and scientists / visitors to the department:
Name/ Designation / lecture topic /date:
2. Prof. Anisur Rahman Khuda Bukhsh, Department of Zoology, University of Kalyani; Topic: On the Molecular Mechanism of Action of Potentized Homeopathic Drugs:Our evidence-based hypothesis; January12, 2013.
5. Prof. Anilava Kaviraj, Department of Zoology, University of Kalyani, Kalyani; Topic: Atomic Absorption Spectrophotometry in Biological Research; Sept 07, 2013.
7. Dr. Srikanta Guria, Asst. Prof., P G Department of Zoology, Barasat Govt. College, Barasat; Thyroid Peroxidase (Tpo) Gene Mutation In Patients With Congenital Hypothyroidism; Sept 07, 2013.

8. Dr. Abhijit Bandyopadhyay, Asst. Prof., Department of Zoology, MUC Women's College, Burdwan; Topic: Application Of Comet Assay Technique For Assessment Of Arsenic Genotoxicity In Groundwater In Bone Marrow Cells Of Swiss Albino Mice; Sept 07, 2013.

9. Dr. Ashim Kumar Nath, Associate Professor, Department of Zoology (Post Graduate), Serampore College, Serampore, Hooghly, West Bengal. Email: nathasim@yahoo.com; Topic: Field Study Protocol Of Fresh Water Zooplankton; Sept 09, 2011.


15. Prof. Sailesh Chattopadhyay, University Prof. (Forestry) and Technical Secretary to Vice-Chancellor, Department of Forest Biology and Tree Improvement, Faculty of Forestry, Birsa Agricultural University, Kanke, Ranchi-834006, Jharkhand. E-mail : ts_vc@rediffmail.com; BIOINFORMATICS AND BIODIVERSITY MANAGEMENT; Sept 07, 2013.

16. Prof. B.B. Jana, UGC Emeritus Professor, Former Vice-President, Centre for Ecological Engineering, Kalyani University, Former Professor, Department of Zoology, Kalyani University, Chief Guest address in Annual Prize Distribution Ceremony; Jan 16, 2014.

25. Seminars/Conferences/Workshops organized & the source of funding

a) National


3. UGC-sponsored Seminar on “Faunal Diversity Assessment : Designing Field Studies”; on September 09, 2011; at Department of Zoology, Ramakrishna Mission Vivekananda Centenary College, Rahara, Kolkata – 700118.
   c) International - not yet organized.

26. Student profile programme/course wise:

<table>
<thead>
<tr>
<th>Name of the Course/programme (refer question no. 4)</th>
<th>Applications received</th>
<th>Selected</th>
<th>Enrolled</th>
<th>Pass percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>*M</td>
<td>*F</td>
<td></td>
</tr>
<tr>
<td>B.Sc. , 2013</td>
<td>333</td>
<td>60</td>
<td>60</td>
<td>100 %</td>
</tr>
<tr>
<td>B.Sc. , 2012</td>
<td>264</td>
<td>61</td>
<td>61</td>
<td>100 %</td>
</tr>
<tr>
<td>B.Sc. , 2011</td>
<td>408</td>
<td>59</td>
<td>59</td>
<td>91.3%</td>
</tr>
<tr>
<td>B.Sc. , 2010</td>
<td>316</td>
<td>61</td>
<td>61</td>
<td>100%</td>
</tr>
</tbody>
</table>

*M = Male   *F = Female

27. Diversity of Students

<table>
<thead>
<tr>
<th>Name of the Course</th>
<th>% of students from the same state</th>
<th>% of students from other States</th>
<th>% of students from abroad</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Sc. Zoology Hons.</td>
<td>100%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.? National and state competitive examinations such as NET, SLET, GATE, etc. are applicable to M. Sc. candidates. However, some of our pass-out students have qualified in the PG Entrance Examinations in various Universities both inside and outside the State.

29. Student progression
Student progression | Against % enrolled
--- | ---
UG to PG | 65%
PG to M.Phil. | No record
PG to Ph.D. | 30%
Ph.D. to Post-Doctoral | No record

Employed
- Campus selection
- Other than campus recruitment

Some students have been selected by in-campus recruitment drive of different Pharma Companies like Cipla, Dabur etc.

Some students are also directly recruited by Glaxo Smith Kline, Abbot, Dr. Reddy’s etc.

Some students have also opted for Government level services through State and National-level Entrance Examinations.

Entrepreneurship/Self-employment | No such record exists.

30. Details of Infrastructural facilities

a) Library – Rich collection of books and journals are available from college library.

Apart from the college library there is also a departmental library with a good collection of reference books.

b) Internet facilities for Staff & Students –

It is available in the library and also in the department.

c) Class rooms with ICT facility – ONE Room with DLP projection.

d) Laboratories –

<table>
<thead>
<tr>
<th>Laboratory</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microtomy</td>
<td>1</td>
</tr>
<tr>
<td>Museum for Preserved specimens</td>
<td>1</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>1</td>
</tr>
<tr>
<td>Dissection and General practical</td>
<td>3</td>
</tr>
</tbody>
</table>

31. Number of students receiving financial assistance from college, university, government or other agencies

Many students are helped to receive various scholarships like Merit-cum-Means.
INSPIRE, West Bengal Minority Development Federation Corporation Scholarship, SC/ST/OBC Scholarships, Scholarships from Ramakrishna Mission, Belur Math and Ramakrishna Mission Institute of Culture, Golpark. Some of the poor and meritorious students also enjoy scholarships by exemption of tuition fees.

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts:

LIST OF SEMINAR LECTURE / SPECIAL LECTURES:
1. CHIEF GUEST ADDRESS IN ANNUAL PRIZE DISTRIBUTION CEREMONY - by Prof. B B Jana, UGC Emeritus Professor, Former Vice-President, Centre for Ecological Engineering, Kalyani University, Former Professor, Department of Zoology, Kalyani University; Jan 16, 2014.
2. PHYSICO-CHEMICAL PROCESSES IN BIOLOGICAL SYSTEM – by Dr. Madhu Sudan Ghosal, Retd. Prof., Surendranath College, Kolkata; January 12, 2013.
3. ON THE MOLECULAR MECHANISM OF ACTION OF POTENTIZED HOMEOPATHIC DRUGS: OUR EVIDENCE-BASED HYPOTHESIS - by Prof. Anisur Rahman Khuda Bukhsh, Department of Zoology, University of Kalyani; January 12, 2013.
4. GROUND WATER QUALITY AND PUBLIC HEALTH CONCERN IN BENGAL DELTA: AN ASSESSMENT – by Prof. Subhas Chandra Santra, Department of Environmental Science, University of Kalyani; January 12, 2013.
6. ATOMIC ABSORPTION SPECTROPHOTOMETRY IN BIOLOGICAL RESEARCH – by Prof. Anilava Kaviraj, Department of Zoology, University of Kalyani, Kalyani; Sept 07, 2013.
7. A SEARCH FOR NOVEL BIOPHARMACEUTICALS AGAINST INFECTIOUS DISEASE: THE MUSHROOM MAGIC - by Dr. Chiranjib Pal, Asst. Prof., Department of Zoology, West Bengal State University, Barasat; Sept 07, 2013.
8. FIELD STUDY PROTOCOL OF FRESH WATER ZOOPLANKTON – by Dr. Ashim Kumar Nath, Associate Professor, Department of Zoology (Post Graduate), Serampore College, Hooghly, West Bengal.; Sept 09, 2011.
9. AVIFAUNA DIVERSITY STUDY: NECESSARY FIELD PROTOCOL – by Dr. Utpal Singha Roy, Durgapur Government College, JN Avenue, Durgapur – 713214, West Bengal; Sept 09, 2011.
10. DIVERSITY OF FAUNA IN INTERTIDAL AREAS: AN INTRODUCTORY STUDY - by Dr. Kamales K Misra, Former Prof., RBC, Naihati; Sept 09, 2011.
12. ON SCIENCE AND C E T – by Mr. Supratik Chakraborty, M D, Lilac Group etc. Mumbai; Sept 07, 2013.
13. **DECIPHERING GENOME** - by Prof. C.S. Chakrabarti, Vice Chancellor, West Bengal University of Animal & Fishery Sciences; Sept 07, 2013.
14. **ADVANCES IN CARDIAC SCIENCES, DIAGNOSTICS, THERAPY** and other FRONTIER AREAS OF BIOCHEMISTRY – by Prof. Mrinal Kanti Dewanjee, specialist in Nuclear Medicine (Ph. D. from MacGill University, Canada), NIH: USA, in 2002.

33. **Teaching methods adopted to improve student learning** –
   - ICT Enabled classrooms are used for state-of-the –art Multimedia presentation.
   - Intensive field studies are arranged for each academic session.
   - Class tests are frequently organized for continuous evaluation.
   - Informal counseling and remedial classes for the slow learners.

34. **Participation in Institutional Social Responsibility (ISR) and Extension activities** –
As a part of the NSS activities, the students and faculty actively participate in Blood Donation, Free Eye operation Camp, Polio Vaccination and Campus cleaning.

35. **SWOC analysis of the department and Future plans:**

   **Strength:**
   - Trust and obedience of students is the primary strength.
   - Co-operation of their guardians is a strength.
   - Our resourceful library allows the boys to adhere to the college.
   - Positive responses of the ex-students placed at WBSU, Presidency University, Ballygaunj Science College, University of Calcutta, National Institute of Cholera and Enteric Diseases (NICED), Indian Institute of Science, Bangalore, and abroad, etc. inspires present-day students to be hard-working.
   - College atmosphere and an all-out cooperation among the staff members lay the foundation of our strength.

   **Weakness:**
   - Shortage of permanent faculty Staff as well as non-availability of technical and skilled faculties is the worst weakness.
   - Sometimes, lack of multiple sets of equipment compels to arrange practical classes in batches /groups.

   **Opportunities:**
   - The course syllabus is so designed that boys can avail jobs easily.
   - Co-operation of local people to faculty members and students is good.
   - A support structure is arranged to facilitate academically weaker sections of students through remedial and personal interaction.
Challenges:
- The increasing number of students is additional burden on the laboratory as well as library infrastructure;
- The financial allocation is unable to cope with the rising requirement;
- To satisfy students’ expectation is a regular challenge;
- To grow research facilities at the department is a further challenge;
- To transform this department into center of excellence for teaching and learning.

Future Plans:
- Growth of research facility is a definite future plan.
- Development of Animal house suitable for research work and practical classes is the second venture.
- Input of technically trained staff member is an essential growth necessary for upgradation to Post Graduate studies.