Evaluative Report of the Departments

Department of Microbiology

1. Name of the Department & its year of establishment
   Department of Microbiology. Established in 1932

2. Names of Programmes/Courses offered (UG, PG, M.Phil, PhD, Integrated Masters; Integrated PhD, etc.)
   B.Sc in Microbiology, M.Sc in Microbiology

3. Interdisciplinary courses and departments involved
   • In 2007-08, an Interdisciplinary Environment Studies Honours Programme was introduced. The theme for the year was Environment and Society with emphasis on Water. The course was introduced and coordinated at the college level by Dr. Ms. Vivien Amonkar; Ms. Sangeetha Chavan was the department coordinator. The Programme involved the department of Economics, Sociology, Botany, Life Science, Microbiology and Zoology.
   • 2008-09: The theme for the Interdisciplinary Environment Studies Honours Programme was ‘Environment Degradation and Mitigation’. The course was coordinated at the college level by Dr. Ms. Vivien Amonkar; Ms. Sangeetha Chavan was the department coordinator. The Programme involved the department of Economics, Sociology, Botany, Life Sciences, Microbiology and Zoology.
   • 2011-12: The department introduced a cross faculty SY course as part of the autonomy system of the college – Infectious Diseases: Staying ahead Ms. Miriam Stewart, Ms. Sangeetha Chavan and Ms. Karuna Gokarn taught the course to students of SYBA, SYBMM and SYBMS
   • Biostatistics and Instrumentation involving principles of physics are included in courses offered.

Annual/ semester/choice based credit system
   2007 -2010: Annual system, non credit based
   From June 2010: Semester system, credit based Autonomous system for UG courses
   From June 2012: Semester system, credit based Autonomous system for PG courses

5. Participation of the department in the courses offered by other departments
   • Faculty members of the department are involved in the Postgraduate Department of Biotechnology of the college – a self financing course. Dr. Ms. Vivien Amonkar heads the department and Ms. Miriam Stewart, Ms. Sangeetha Chavan and Ms. Karuna Gokarn have taken lectures in several courses over the last few years.
   • Faculty members of the department have conducted lectures for the Post Graduate Diploma course - Industrial Biotechnology and Enterprise
offered by the college which leads to a Masters Degree from the University of Bath, U.K.
Dr. Ms. Vivien Amonkar headed the Faculty team that framed the syllabus for the above course.

- Students of the department are involved in courses of other departments as part of the autonomy systems of the college:
- Every SY Student joins a course offered by a department of the Faculty of Arts and every TY student joins an Applied Component course offered by the department of Life Science or Chemistry.

6. **Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)**

<table>
<thead>
<tr>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>-</td>
</tr>
<tr>
<td>Associate Professors</td>
<td>4</td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>1</td>
</tr>
</tbody>
</table>

7. **Faculty profile with name, qualification, designation, specialization**

<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 PhD. students guided in the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr.(Ms.) Vivien Amonkar</td>
<td>M.Sc., PhD</td>
<td>Head of Dept., Associate Professor</td>
<td>General Microbiology, Biochemistry - Microbial, Medical Microbiology,</td>
<td>33</td>
<td>-</td>
</tr>
<tr>
<td>Ms. Miriam Stewart</td>
<td>M.Sc.</td>
<td>Associate Professor</td>
<td>Virology, General Microbiology, Immunology</td>
<td>28</td>
<td>-</td>
</tr>
<tr>
<td>Ms. Sangeeta Chavan</td>
<td>M.Sc., M.Phil.</td>
<td>Associate Professor</td>
<td>General Microbiology, Genetics, Immunology, Environmental Microbiology</td>
<td>21</td>
<td>-</td>
</tr>
<tr>
<td>Ms. Karuna Gokarn</td>
<td>M.Sc.</td>
<td>Associate Professor</td>
<td>Genetics, Industrial Microbiology, Food Microbiology, Virology</td>
<td>17</td>
<td>-</td>
</tr>
<tr>
<td>Prajith Nambiar</td>
<td>M.Sc</td>
<td>Asst. Professor</td>
<td>Microbial Biochemistry, Immunology</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

8. **Percentage of classes taken by temporary faculty – programme-wise information** – Nil.

9. **Programme-wise Student Teacher Ratio**

<table>
<thead>
<tr>
<th>Programme</th>
<th>Student Teacher Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>FYBSc</td>
<td>20:1</td>
</tr>
<tr>
<td>SYBSc</td>
<td>17:1</td>
</tr>
<tr>
<td>TYBSc</td>
<td>15:1</td>
</tr>
<tr>
<td>M.Sc</td>
<td>1:1 up to 2012;</td>
</tr>
</tbody>
</table>
10:1 from 2012
10. Number of academic support staff (technical) and administrative staff:
sanctioned and filled
Laboratory Assistant – 1 post sanctioned and filled
Laboratory Attendant – 2 posts sanctioned and filled

11. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise.

<table>
<thead>
<tr>
<th>Name of Teacher</th>
<th>Title</th>
<th>Cost</th>
<th>Duration</th>
<th>Date of sanction</th>
<th>Funding agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms. Karuna Gokarn</td>
<td>Microbial Studies of Vermicompost and Worm tea</td>
<td>10,000/-</td>
<td>6 Months</td>
<td>2006</td>
<td>Mumbai University</td>
</tr>
<tr>
<td>Ms. Sangeeta Chavan</td>
<td>Production and Activity Studies of Biosurfactants using waste substrates</td>
<td>25,000/-</td>
<td>6 Months</td>
<td>2007</td>
<td>Mumbai University</td>
</tr>
<tr>
<td>Dr.(Ms.) Vivien Amonkar &amp; Ms. Karuna Gokarn</td>
<td>Microbiological Testing of Drinking Water in the slums followed by educational interventions in collaboration with Haath Mein Sehat</td>
<td>3,50,000/-</td>
<td>3 Years</td>
<td>2007</td>
<td>Haath Mein Sehat University of California, Berkeley (UCB)</td>
</tr>
<tr>
<td>Ms. Karuna Gokarn</td>
<td>Biosorption of industrial dyes using dead fungal biomass</td>
<td>30,000/-</td>
<td>6 Months</td>
<td>2008</td>
<td>Mumbai University</td>
</tr>
<tr>
<td>Dr.(Ms.) Vivien Amonkar</td>
<td>Assessment of drinking water quality in slums – source and storage waters</td>
<td>22,500/-</td>
<td>6 Months</td>
<td>2009</td>
<td>Mumbai University</td>
</tr>
<tr>
<td>Ms. Sangeeta Chavan</td>
<td>Isolation of <em>Lactobacillus</em> species from lactic acid fermented products and evaluation of its probiotic potential</td>
<td>22,500/-</td>
<td>6 Months</td>
<td>2009</td>
<td>Mumbai University</td>
</tr>
<tr>
<td>Dr.(Ms.) Vivien Amonkar</td>
<td>Studying soil community DNA (Metagenomics) for endo GH’s and cellulose Binding</td>
<td>25,000/-</td>
<td>1 Year</td>
<td>2011</td>
<td>DBT-ICT-Centre for Energy Bioscience</td>
</tr>
<tr>
<td>Dr.(Ms.) Vivien Amonkar &amp; Ms. Varnica Khetrapal</td>
<td>Microbial Synthesis and characterisation of silver nanoparticles</td>
<td>1,05,000/-</td>
<td>2 Years</td>
<td>2011</td>
<td>UGC Minor Research</td>
</tr>
<tr>
<td>Dr.(Ms.) Vivien Amonkar</td>
<td>Dextran Fermentation</td>
<td>5,00,000/-</td>
<td>Ongoing</td>
<td>2011</td>
<td>Industrial Project</td>
</tr>
</tbody>
</table>
12. Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received
DST-FIST grant of Rs. 34.20 lakhs for Equipments and Infrastructure facility (2004-07) to Dept. of Biological Sciences (Life Science, Botany, Microbiology and Zoology)
STAR COLLEGE AWARD: 6 lakhs for the Department of Microbiology
DST FIST GRANT: 6 lakhs for the Department of Microbiology

13. Research facility / centre with
- State recognition
- National recognition
- International recognition
NA

14. Publications:

<table>
<thead>
<tr>
<th>Name of Teacher</th>
<th>Publications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Ms. Vivien Amonkar</td>
<td>Solid state fermentation for degradation of fruit and vegetable waste and production of significant enzymes in XPLORE, Xavier’s Research Journal, Vol. 2, Issue 1, December 2011</td>
</tr>
</tbody>
</table>

* number of papers published in peer reviewed journals (national / international)
* Monographs
* Chapter(s) in Books
* Editing Books
* Books with ISBN numbers with details of publishers
* Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)
* Citation Index – range / average
15. Details of patents and income generated

16. Areas of consultancy and income generated

<table>
<thead>
<tr>
<th>Name of Teacher</th>
<th>Title</th>
<th>Cost</th>
<th>Duration</th>
<th>Date of sanction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr.(Ms.) Vivien</td>
<td>Microbiological Testing of Drinking Water in the slums followed by</td>
<td>3,50,000/-</td>
<td>3 Years</td>
<td>2007</td>
</tr>
<tr>
<td>Dr. Karuna &amp; Ms.</td>
<td>educational interventions in collaboration with University of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amonkar &amp; Ms.</td>
<td>California, Berkeley (UCB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amonkar &amp; Ms.</td>
<td>Microbiological Testing of Drinking Water in the slums followed by</td>
<td>5,00,000/-</td>
<td>Ongoing</td>
<td>2011</td>
</tr>
<tr>
<td>Dr. Karuna &amp; Ms.</td>
<td>educational interventions in collaboration with University of</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amonkar &amp; Ms.</td>
<td>California, Berkeley (UCB)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. (Ms.) Vivien</td>
<td>Dextran Fermentation – Industrial Project with Swati Spentose Pvt.</td>
<td>5,00,000/-</td>
<td>Ongoing</td>
<td>2011</td>
</tr>
<tr>
<td>Amonkar</td>
<td>Ltd.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dr. (Ms.) Vivien</td>
<td>Key Opinion Leader for 3M India-Food Safety Division.</td>
<td>Industry</td>
<td>1 Year</td>
<td>2011</td>
</tr>
<tr>
<td>Amonkar</td>
<td>sponsor for the department state level seminar 2013</td>
<td>sponsor</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

17. Faculty recharging strategies

See Annexure 1. Continuous Professional Development

18. Student projects

- percentage of students who have done in-house projects including inter-departmental
- percentage of students doing projects in collaboration with industries / institutes

2006 – 2011: 60 – 70% of undergraduate students have done in house projects.
40% of undergraduate students have done projects with industries/ institutes.
2011 – 2012: 100% of undergraduate students have completed in house projects as part of the autonomous system.
30% of undergraduate students have done projects with industries/institutes.
One postgraduate student conducted the project in collaboration with the DBT-ICT-Centre for Energy Biosciences.
2006 – 2012: 100% of postgraduate students have completed in house projects

Details:

A] Undergraduate students complete summer programmes in various research institutions, Pathology Labs and Microbiology/Biotechnology companies for a duration of 3 - 6 weeks
B) In addition, several in house research projects are carried out in the department as part of the Honour’s Programme, a co-curricular programme of excellence. The duration of these projects: 1 week to 6 weeks

C) Post graduate students completed a 3-4 month in-house project as part of their curriculum

In 2011-12: One postgraduate student conducted the project ‘Characterization of cellulase produced by micro-organisms growing on specific cellulose substrates’, in collaboration with the DBT-ICT-Centre for Energy Biosciences

A. Undergraduate students – summer programmes

<table>
<thead>
<tr>
<th>NO.</th>
<th>INSTITUTION</th>
<th>YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Micro. Lab, Clariant Chemicals</td>
<td>2009</td>
</tr>
<tr>
<td>2.</td>
<td>Vaccine dept., Bharat Serum</td>
<td>2009</td>
</tr>
<tr>
<td>3.</td>
<td>Several Path Labs eg Bombay Hospital, PH Medical centre</td>
<td>2009</td>
</tr>
<tr>
<td>4.</td>
<td>Bharat Serum</td>
<td>2010</td>
</tr>
<tr>
<td>5.</td>
<td>Intas Pharma</td>
<td>2010</td>
</tr>
<tr>
<td>6.</td>
<td>Several Path Labs eg Bombay Hospital, PH Medical centre, Tata Memorial, Sea wood Hospital</td>
<td>2010</td>
</tr>
<tr>
<td>8.</td>
<td>Several Path Labs eg Bombay Hospital, PH Medical centre, Tata Memorial</td>
<td>2011</td>
</tr>
<tr>
<td>9.</td>
<td>Summer course at Bath University, UK from 12th May to 4th of June, 2012. They had lecture series, practicals and project work in the fields on Molecular Biology, Developmental Biology, Cell Biology and Bioinformatics during that period at Bath University.</td>
<td>2012</td>
</tr>
</tbody>
</table>

B. Undergraduate students – in house projects (2009-10)
- Project on Biosurfactants
- Service learning project in collaboration with students of the University of California, Berkeley which involved testing the potability of water in specific slums in Mumbai followed by educational interventions
- Microbial Biotechnology Project- involving Solid Waste Management and the study of Antimicrobial properties of Herbs and Spices
- Summer teaching and learning project on Global Health Crisis – TB and HIV in collaboration with Western Connecticut State University

C. M.Sc Part II In house projects – Part of Annexure 1

19. Awards / recognitions received at the national and international level by
- Faculty
  Dr. Ms. Vivien Amonkar: Awarded The American Society for Microbiology (ASM) and the UNESCO ‘Leadership Grant for International Educators’ May 2009 which allowed for participation in the ASM 16th Annual Conference for Undergraduate Educators (ASMCUE) and a pre-meeting
workshop May 28-31, 2009 at Colorado State University in Ft. Collins, Colorado, USA
- Doctoral / post doctoral fellows
- Student Rima Bist (M.Sc Part II student) was selected for a six month DBT-ICT-Centre for Energy Biosciences project ‘Studying soil community DNA (Metagenomics) for endo GH’s and cellulose Binding’ 2011-12

20. Seminars/Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any. An international conference on “Advances in Pharmaceutical Microbiology” organized by Dept. of Microbiology in collaboration with Mumbai University as part of Sesquicentennial Celebrations of the Mumbai University was held on 6th & 7th Jan 2007. Outstation participants from St. Xavier’s College, Goa

21. Student profile course-wise:

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>Applications received</th>
<th>Selected Male</th>
<th>Selected Female</th>
<th>Pass percentage Male</th>
<th>Pass percentage Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG(FY, SY, TY)2007-2008</td>
<td>200</td>
<td>19 /91</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>UG(FY, SY, TY)2008-2009</td>
<td>216</td>
<td>19 /86</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>UG(FY, SY, TY)2009-2010</td>
<td>190</td>
<td>19 /90</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>UG(FY, SY, TY)2010-2011</td>
<td>190</td>
<td>20 /90</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>UG(FY, SY, TY)2011-2012</td>
<td>206</td>
<td>17/ 89</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>MSc(Part I and II)2006-2007</td>
<td>20</td>
<td>2 /2</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>MSc (Part I and II)2007-2008</td>
<td>19</td>
<td>1/ 3</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>PG(Part I and II)2008-2009</td>
<td>19</td>
<td>1 /3</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>PG(Part I and II)2009-2010</td>
<td>21</td>
<td>1/ 3</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>PG(Part I and II)2010-2011</td>
<td>20</td>
<td>2 /2</td>
<td></td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>PG(Part I and II)2011-2012</td>
<td>20</td>
<td>1 /3</td>
<td></td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

22. Diversity of students

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>% of students from the College</th>
<th>% of students from the State</th>
<th>% of students from other States</th>
<th>% of students from other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG(FY, SY, TY)2007-2008</td>
<td>40</td>
<td>86</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>UG(FY, SY, TY)2008-2009</td>
<td>42</td>
<td>92</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>UG(FY, SY, TY)2009-2010</td>
<td>43</td>
<td>94</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>UG(FY, SY, TY)2010-2011</td>
<td>45</td>
<td>88</td>
<td>12</td>
<td>-</td>
</tr>
<tr>
<td>UG(FY, SY, TY)2011-2012</td>
<td>40</td>
<td>92</td>
<td>8</td>
<td>-</td>
</tr>
<tr>
<td>PG(Part I and II)2006-2007</td>
<td>50</td>
<td>100</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>PG(Part I and II)2007-2008</td>
<td>100</td>
<td>100</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>PG(Part I and II)2008-2009</td>
<td>50</td>
<td>100</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Name of the Course (refer question no. 2)</td>
<td>% of students from the College</td>
<td>% of students from the State</td>
<td>% of students from other States</td>
<td>% of students from other countries</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>-------------------------------</td>
<td>-----------------------------</td>
<td>--------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>PG(Part I and II)2009-2010</td>
<td>50</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PG(Part I and II)2010-2011</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PG(Part I and II)2011-2012</td>
<td>100</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

23. How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations?

30% of our students have cleared competitive exams

Examples:
Andrew Salazar - Cleared CSIR-UGC NET
Keith Frank - Cleared the NET June 2011 Exam.
Anannya Bhattacharya - Cleared ICMR JRF 2010, GATE 2010 (94\textsuperscript{th} percentile)
Sindhu Vangeti - GATE 2011: 96th percentile
Adnan Faizullahbouy: Academic merit scholarship funded by the University of Sheffield and Bardhan Research Trust -2010

24. Student progression

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Percentage against enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>2007-2008 69</td>
</tr>
<tr>
<td></td>
<td>2008-2009 80</td>
</tr>
<tr>
<td></td>
<td>2009-2010 93</td>
</tr>
<tr>
<td></td>
<td>2010-2011 82</td>
</tr>
<tr>
<td></td>
<td>2011-2012 90</td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td></td>
</tr>
<tr>
<td>PG to PhD.</td>
<td>2007-2008</td>
</tr>
<tr>
<td></td>
<td>2008-2009 50</td>
</tr>
<tr>
<td></td>
<td>2009-2010</td>
</tr>
<tr>
<td></td>
<td>2010-2011 50</td>
</tr>
<tr>
<td></td>
<td>2011-2012</td>
</tr>
<tr>
<td>PhD. to Post-Doctoral</td>
<td></td>
</tr>
<tr>
<td>Employed (details given below)</td>
<td></td>
</tr>
<tr>
<td>Campus selection</td>
<td>-</td>
</tr>
<tr>
<td>Other than campus recruitment</td>
<td></td>
</tr>
<tr>
<td>UG to PG</td>
<td>2007-2008 31</td>
</tr>
<tr>
<td></td>
<td>2008-2009 20</td>
</tr>
<tr>
<td></td>
<td>2009-2010 7</td>
</tr>
<tr>
<td></td>
<td>2010-2011 18</td>
</tr>
<tr>
<td></td>
<td>2011-2012 10</td>
</tr>
<tr>
<td>Student progression</td>
<td>Percentage against enrolled</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td>-</td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td>2007-2008 100</td>
</tr>
<tr>
<td></td>
<td>2008-2009 50</td>
</tr>
<tr>
<td></td>
<td>2009-2010 100</td>
</tr>
<tr>
<td></td>
<td>2010-2011 50</td>
</tr>
<tr>
<td></td>
<td>2011-2012 100</td>
</tr>
<tr>
<td>PhD. to Post-Doctoral</td>
<td>-</td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>-</td>
</tr>
</tbody>
</table>

25. Diversity of staff

<table>
<thead>
<tr>
<th>Percentage of faculty who are graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>of the same parent university</td>
</tr>
<tr>
<td>From other universities within the State</td>
</tr>
<tr>
<td>From other universities from other States</td>
</tr>
</tbody>
</table>

26. Number of faculty who were awarded PhD., D.Sc. and D.Litt. during the assessment period.
None.

27. Present details about infrastructural facilities
a) Library: Main college library and department library with 200 books
b) Internet facilities for staff and students - In the Knowledge Center, Library, MMR, SCAVI and Department
c) Total number of class rooms - 41 (Shared by all the departments)
d) Class rooms with ICT facility – All 41
e) Students’ laboratories – 1 Undergraduate and 1 postgraduate
f) Research laboratories – 1 (additional facilities available – Centralized Instrumentation Facility and Caius Research Lab for PhD research)

28. Number of students of the department getting financial assistance from College. 2-5 per year
The department has established 5 scholarships from alumni donations.

29. Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology.
No

30. Does the department obtain feedback from:
   Faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it?
   Yes through weekly faculty meetings. Remedial measures are adopted on the basis of the feedback

   Students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?
   • Yes through Formal TAQ administered to all students
   • Annual feedback at the Khandala seminar of the department.
• The department adopts remedial measures on the basis of the feedback
Alumni and employers on the programmes and what is the response of the department to the same?
Yes from alumni through informal discussions. The department adopts remedial measures on the basis of the feedback

31. List the distinguished alumni of the department (maximum 10)
   a. Late Dr. Janardhan.V. Bhat : Class of 1939  Ex Head of Department, was an eminent internationally renowned Microbiologist whose research interests were many eg environmental microbiology who joined Indian Institute of Science, Bangalore.
   b. Late Dr. Fabian Fernandes: Class of 1941  Ex Head of the Department with Medical Microbiology as his key interest area. He left the department in 1959 to join the Ciba Geigy Research Centre.
   c. Major General Eustace D’Souza : Class of 1941
   d. Late Dr. Ms. Yvonne Freitas : Class of 1949, Head of Dept, First Lady Vice Principal of the college and Dean of science faculty , University of Bombay
   e. Dr.Bhanu Pavri : Retired as Director of National Institute of Virology , Pune
   f. Dr. Lancy Pereira: Ex Principal of St. Xavier’s College, ExHead of Dept.
   g. Dr. Girish Vyas : Professor of laboratory medicine and director of the UCSF School of Medicine Transfusion Research Program
   h. Mr Gerson D’Cunha: Served as head of Lintas. He then moved on to work with the UNICEF in Latin America and New York. He is the Chief Executive of Bombay First , a trustee of NAGAR and convenor of AGNI.
   i. Late Dr. Edgar DaSilva joined the UNESCO and rose to be Head of its Life Sciences section
   j. Dr. Ms. Zimra Israel Served as Director, Science Policy, Vaccines and Biologics, Pfizer New York

32. Give details of student enrichment programmes (special lectures/workshops/seminar) with external experts.
A. An international conference on “Advances in Pharmaceutical Microbiology” organized by Dept. of Microbiology in collaboration with Mumbai University as part of Sesquicentennial Celebrations of the Mumbai University was held on 6th & 7th Jan 2007.

B. Guest Lectures –often with collaborations

2007-08
• A lecture ‘LEVERAGING TECHNOLOGIES IN LABORATORY DIAGNOSIS’ by Dr. Pascoal Carvalho was also organized by the department in collaboration with the Prof. J.V.Bhat Memorial Committee in November 2007.

2008-09
• The Departments of Microbiology and Biotechnology and The American Centre, Mumbai presented a talk on ‘GMOs: Facts and Fantasies’ by Prof. Bruce M. Chassy on 11th August, 2008.
2009-10

- **Rupa Iyer, Ph. D.**, Director, Center for Life Sciences Technology and Biotechnology, University of Houston presented her work on pesticide degraders.
- **Dr. Faith Pereira**, an alumna of the department counseled the students through her talk.

2010 - 11

- **Ruth A. Gyure, PhD**, Western Connecticut State University spoke on Environmental Microbiology.
- **Foster Gonsalves, PhD**, New York University on Drug Design.
- **Niyati Parekh, PhD.**, New York University on Obesity, insulin resistance, hypoglycemia and cancer.
- **Sriram Balakrishnan**, Sanofi Pasteur India Pvt Ltd on Pharmaceutical Marketing.
- **Sindhu Vangeti**, a postgraduate student at NIV on Viral Cultivation

2011-12

- **Dr. Bhal Dave** gave an inspiring lecture to students on aspects related to Agricultural Microbiology
- **Dr. Ms. Shailaja Rabindran** gave an elaborate talk to the students on the use of plant tissue culture in vaccine development, on 12th December 2011.
- **Tarang Sharma** explained aspects of public health and career opportunities in the field – 20th December, 2011
- **Viveka Roy Chowdhury** Editor of Pharma Express gave a talk on Popular Science Writing

D. **One day seminar**

Jointly organized by the Departments of Biotechnology and Microbiology on the 6th of Jan 2011 on ‘Infectious diseases –staying ahead’.

Speakers for the seminar: **Dr. B.R Das**, Executive Director- Research and Innovation Super Religaire Laboratories Limited, **Dr. Sanish Davis**, DGM Clinical Research Drug Discovery, Glenmark Research Centre, **Dr. Aamir Shaikh**, Founder Assansa, Health Care consultant, **Dr. Zimra Israel**, Director, Science Policy, Vaccines and Biologics, Pfizer New York, **Mr. Vishal Jajodia**, Executive Director, Swati Spentose and **Ms. Teja Thorat**, a public health student, Boston, discussed her course.

E. **Workshops**

**Dr. Foster Gonsalves**, New York University conducted a workshop on PCR
**Hussein Dohadwala** (Wockhardt) conducted a workshop on Bioinformatics

E. **Poster Presentations** by SYBSc students.

Students presented the projects they had completed as part of their practicals in the form of posters which were judged by professionals from the Science Writing industry.

33. List the teaching methods adopted by the faculty for different programmes. Besides the classical chalk and talk methods other methodologies used by the department are:
a. Multimedia- PowerPoint presentations, films, animations, specialized software (Bioinformatics).
b. Problem based learning (for practicals and other courses).
c. Peer Learning.
d. Group discussions, Group presentations.
e. Project based learning (to develop inquiry based learning).
f. Role play.
g. Service learning.
h. Experiential learning.
i. Problem solving.
j. Skills practices.
k. Use of open courseware.
l. Use of Moodle.

34. How does the department ensure that programme objectives are constantly met and learning outcomes monitored?
The Head of Dept and the faculty of the department meet every week for formal meetings in which the objectives of the department, the programmes to be implemented, the achievement of learning outcomes and the remedial measures to be adopted (if relevant) are discussed. Student feedbacks on various programmes are obtained on a regular basis both orally and in writing. An annual feedback is obtained at the annual Khandala seminar followed by discussions and follow up action.

35. Highlight the participation of students and faculty in extension activities.

- For three consecutive years, the Department conducted a service learning programme for the students of Microbiology in collaboration with the University of California, Berkeley at low-income group communities. Microbiological testing of water samples of households was carried out every month followed by community workshops to teach hygienic practices to ensure safe drinking water. Coordinated by Dr. Ms. Vivien Amonkar and Ms. Karuna Gokarn.
- SYBSc students also conduct a Microbiological analysis of the college drinking water to check its potability on a monthly basis. Coordinated by Ms. Karuna Gokarn.
- In 2007-08, an Interdisciplinary Environment Studies Honours Programme was introduced. The course was introduced and coordinated at the college level by Dr. Ms. Vivien Amonkar and Ms. Sangeetha Chavan was the department coordinator. The theme for the year was Environment and Society with emphasis on Water. In 2008-09 the theme was ‘Environment Degradation and Mitigation’. The course involved, lectures, visits and an annual exhibition. Students of the department were also involved.
- Students of the department are involved in the Social Involvement Programme of the college.

36. Give details of “beyond syllabus scholarly activities” of the department.
A. An international conference same as Point No32
B. Honours Programme Activities of the Department

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2007-2008</strong></td>
<td><strong>Workshops</strong></td>
</tr>
<tr>
<td></td>
<td>- Elisa And Western Blot</td>
</tr>
<tr>
<td></td>
<td>- Bioassays Of Penicillin And Vitamin B12</td>
</tr>
<tr>
<td></td>
<td>- Basic Bioinformatics</td>
</tr>
<tr>
<td></td>
<td><strong>Biotechnology Project</strong></td>
</tr>
<tr>
<td></td>
<td>- Solid Waste Mushroom Cultivation, Antimicrobial Activities of herbs and spices</td>
</tr>
<tr>
<td><strong>2008-2009</strong></td>
<td><strong>Workshops</strong></td>
</tr>
<tr>
<td></td>
<td>- Polymerase Chain Reaction Technique</td>
</tr>
<tr>
<td></td>
<td>- Bioassays Of Penicillin And Vitamin B12</td>
</tr>
<tr>
<td></td>
<td>- Basic Bioinformatics</td>
</tr>
<tr>
<td></td>
<td><strong>Projects</strong></td>
</tr>
<tr>
<td></td>
<td>- Absorption of dyes by dead Fungal Dried mass</td>
</tr>
<tr>
<td></td>
<td>- A Survey of and Assessment of methods of Hygiene and Food preparation practices employed in the Canteen of St. Xavier’s College according to FDA regulations</td>
</tr>
<tr>
<td></td>
<td>- Biotechnology Module</td>
</tr>
<tr>
<td><strong>2009-2010</strong></td>
<td><strong>Workshops</strong></td>
</tr>
<tr>
<td></td>
<td>- Elisa And Western Blot</td>
</tr>
<tr>
<td></td>
<td>- Bioassays Of Penicillin And Vitamin B12</td>
</tr>
<tr>
<td></td>
<td>- Basic Bioinformatics</td>
</tr>
<tr>
<td></td>
<td><strong>Biotechnology Project</strong></td>
</tr>
<tr>
<td></td>
<td>- Solid Waste Mushroom Cultivation, Antimicrobial Activities of herbs and spices</td>
</tr>
<tr>
<td></td>
<td><strong>Summer Teaching And Learning Project</strong></td>
</tr>
<tr>
<td></td>
<td>- ‘Global Health Crisis’: Environmental Factors And Emerging Drug – Resistant Infections Emphasis On: Tuberculosis And HIV/AIDS In Collaboration With Dr. Ruth A. Gyure, Western Connecticut State University (WCSU) In Danbury, Ct, USA.</td>
</tr>
<tr>
<td></td>
<td><strong>Haat Mein Sehat</strong></td>
</tr>
<tr>
<td><strong>SUMMER INTERNSHIPS:</strong></td>
<td>Four students spent their summer vacation training at Pathological Laboratories in various Hospitals, one student trained at Clariant Chemicals (India.)</td>
</tr>
<tr>
<td>Year</td>
<td>Workshops</td>
</tr>
<tr>
<td>--------------</td>
<td>---------------------------------------------------------------------------</td>
</tr>
<tr>
<td>2010 - 2011</td>
<td>Polymerase Chain Reaction Technique, Bioassays Of Penicillin And Vitamin B12</td>
</tr>
<tr>
<td>2011 - 2012</td>
<td>Animal Tissue Culture, Biostatistics</td>
</tr>
<tr>
<td>2012-2013</td>
<td>Elisa And Western Blot, Bioassays Of Penicillin And Vitamin B12, Bioinformatics, Polymerase Chain Reaction Techniques using 16SrDNA, Plasmid isolation</td>
</tr>
</tbody>
</table>

C. Other academic activities

a. **An annual Department Exhibition** in which Second Year Student groups exhibit microbial Biotechnology aspects in the Medical, Food, Industrial, Agriculture and Environment fields.
b. **MICRO DAY:** An annual Academic celebration
c. **Khandala Seminar:** An annual seminar at the Human Resource centre of the college. Each year has a different theme. eg. Public health in 2012 where students made presentations on the following topics: H1N1, Safer and Healthier Foods, Public Health in India, Eradication of Malaria, Polio, Influenza, Tuberculosis- Drug resistance.
d. **Guest Lectures –often with collaborations -same as Point No.32**

e. **One day seminar -same as Point No.32**

f. **Workshops**

- HACCP principles conducted for canteen staff of the college. **Ms Asha Sridhar**, Head- Food Safety, TUV India Pvt. Ltd. was the resource person. (December 2011)
• Awareness of Infectious diseases for the non-teaching staff of the college – with the help of SY and TY students. (December, 2011)

g. **Poster Presentations** by SYBSc students.
   Students presented the projects they had completed as part of their practicals in the form of posters which were judged by professionals from the Science Writing industry.

h. **Michronicle**: The annual magazine of the department

i. **UMAX**: The Undergraduate Microbiology Association of Xavier’s

37. State whether the programme/ department is accredited/ graded by other agencies. Give details. – no

38. **Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department**

**Strengths**

1. **Faculty and support staff of the department.**
   Faculty who are involved in: (Refer to Annexure 1 for faculty activities)
   a. Quality teaching reflected in the high (good, Very good) TAQ scores
   b. Continuous professional development: See Annexure 1
   c. Sincere, Dedicated work reflected by the large number of Cocurricular activities of the department that require demanding and challenging faculty support. Refer to Q.36
   d. Modern goal based teaching-learning methodologies Refer to Q.33
   e. Research projects that emphasize teaching students research skills (Refer to Q.36 and Annexure 1) the success of which is reflected in the number of students who join research programmes in renowned Universities in India and abroad. Egs.
      India: Indian Institute of Science Bangalore, National Institute of Virology, Pune
      UK: Oxford University, University of Sheffield
      USA: Cornell University, University of Michigan
      Others: University of Queensland, Australia; University of Singapore; Okazaki, Japan
   f. Mentoring of students on career, academic and personal issues.

   **Support Staff:**
   Very hard working, sincere, committed staff who always put the interest of the department students before theirs.

2. **Curricular and Cocurricular Programmes of the department**
   **Curricular:** From 2006 – 2010 the department followed the syllabi of Mumbai University using modern teaching learning pedagogies. (Refer to Q.33)
   From 2010, as St. Xavier’s College became autonomous, the department designs its own syllabi and assessments with the help of a Board of Studies that includes industry experts and faculty of other Microbiology departments. Modern teaching learning pedagogies are used.
   **Co-curricular Programmes** of the Dept.: (Refer to Q. 36)

3. **Infrastructure**
Good lab facilities and basic instrumentation for conducting both undergraduate and postgraduate practicals and research projects. The department was renovated in 2009 mainly through the donation of our alumna Dr. Fiona and her husband Luis Miranda.

4. Students, both present and past
Majority of the students are intelligent, sincere and motivated, who are keen to learn the principles of Microbiology, laboratory techniques and soft skills as a Bioscience related career is a significant goal in their lives. They are extremely cooperative and help in the organization of several department co curricular activities.

DEPARTMENT ALUMNI have contributed to several of our activities.

Department Renovation: Dr. Fiona and Luis Miranda
Instruments: Dr. C. Chopra and the Prema Arya Funds, Dr. Sharad Parikh
Scholarships: Late Dr. Bhal Dave, Dr. C. Chopra, Family members of late Dr. Edgar DaSilva
75 years Celebrations: Dr. Girish Vyas (USA), Dr. Zimra Israel (USA), Dr. Shailaja Rabindran (USA), Dr. Taposhi Dasgupta (former faculty member, Canada) who made presentations at the International conference without any compensation. They personally bore all travel and stay expenses. Dr. Nagesh Mhatre, Dr. Fiona and Luis Miranda for Financial support

Industrial projects: - Francis Baretto and Dr. Sailaja Chandrapati who introduced us to our industry partners.

Lectures, Workshops: Dr. Foster Gonsalves, Viveka Roychowdhury, Rucha Kurtkoti, Dr. Sailaja Chandrapati, Dr. Mehul Vora, Dr. Zimra Israel, Shubhanjali Gadgil, Sriram Balakrishna, Teja Thorat, Dr. Tarang Sharma, Dr. Ritwick Sawarkar, Dr. Faith Pereira

5. Good working atmosphere in the department
Teaching and nonteaching faculty and students of the department share a very warm relationship which includes a lot of cooperation and understanding. The students have often appreciated the concern and mentoring they have received.

Weaknesses
1. Lack of Faculty Publications: The faculty has been involved in research projects that train students in research skills but have not resulted in a large number of research publications.
2. A decrease in the academic quality of students entering the department: as students have a greater attraction to professional courses as compared to pure science ones.

Opportunities
1. Academic Autonomy - As the faculty now design their own syllabi and assessments
2. Post graduate courses – as we have just introduced an autonomous M.Sc course in Microbiology with an intake of 20 students per year from June 2012.
3. Research due to the increased emphasis
4. Collaboration with institutes and industries that have a Microbiology focus
5. Interdisciplinary work

Challenges
1. To provide Quality UG & PG teaching with publication based research
2. To provide Quality education that prepares students for a global work
39. Future plans of the department

- To teach globally relevant Microbiology courses within the autonomy system of the college by continuously reviewing and changing syllabi and teaching methodologies.
- Increasing the interdisciplinary nature of the courses.
- Increasing publication based research.
- Increasing collaborations with industry and other institutes.
- To build a proteomics and genomics lab for teaching and research.

ANNEXURE – 1

DEPARTMENT FACULTY ACTIVITIES

A. Dr. Ms. Vivien Amonkar

2007-08

At the College level:

- Associate Prof. - Head of the Dept. of Microbiology
- Coordinator of the M.Sc. Biotechnology Course
- Coordinated the introduction of the Post Graduate Department of Biotechnology
- Organized an interdepartmental Bioskit competition.
- Coordinator of an inter-disciplinary course on Environment studies
- Vice Principal – Academic Improvement of the college

In this capacity:

- Co-ordinator of the Honour’s Programme of the college
- Convenor of IQAC
- Member of the Council for International Programmes
- Member of the Finance Committee of the college
- Made a presentation on Assessment Techniques at the Xavier’s Faculty Seminar on Student Evaluation held on 9th & 10th October
- Was on the organizing committee of:


  Xavier’s Faculty Seminar on Student Evaluation held on 9th & 10th October National Conference on ‘Plants in Relation to Man and Biosphere’ organized by the Department of Botany from Nov. 16 to 17, 2008

At the University of Mumbai level

- Member of the Board of Studies – Microbiology, University of Mumbai
Member of the Faculty of Science, University of Mumbai
Member of the Syllabus Committee for Microbiology
Chairperson of the Examination Committee for M.Sc Microbiology I
Member of the Examination Committee for M.Sc Biotechnology
Invited Member of panels for selection and confirmation of teaching faculty of Departments of Microbiology of several colleges in Mumbai.
Judged: The intercollegiate paper presentation competition and poster competition organized by Wilson College
The intercollegiate Biotechnology Project/ Model Competition organized by Khalsa College

Other Universities
Nominated as subject expert for UG Syllabus Review Committee of Sikkim University in the subjects of Microbiology and Environmental Studies March 2008

Continuous Professional Development
National Seminar on ‘Commercialization Of Biotechnology In India- Opportunities and Challenges’ Modern College, Vashi 29th – 30th September, 2007
Workshop on ‘Validation, Calibration and Traceability’ at VES College in December, 2007
International Colloquium on “Inclusion and Exclusion: Exploring Issues and Practices, 27.02.2008; organized by Liverpool Hope University- UK, St. Xavier’s College, Mumbai at St. Xavier’s College, Mumbai.
Xavier’s Faculty Seminar on Student Evaluation held on 9th & 10th October
Attended a workshop (in collaboration with the Board of Studies) on the Revised Pattern of the M.Sc University Practical Examinations in Microbiology, for the M.Sc Faculty in the subject. – October 2007

2008 -09
At the College level:
Associate Prof. - Head of the Dept. of Microbiology
Coordinator of the M.Sc. Biotechnology Course
Coordinator of an inter-disciplinary course on Environment studies
Vice Principal – Academic Improvement of the college In this capacity:
- Co-ordinator of the Introduction of Autonomy in the college
- Co-ordinator of the Honour’s Programme of the college
- Convenor of IQAC
- Member of the Council for International Programmes
- Member of the Purchase Committee of the college
- Organized Faculty Seminars
- Orientation Programme for new Teaching faculty - June 2008
- VISIONING FOR 2015 – 26th and 27th February, 2009
- ‘Systems in Autonomy – Credits and Syllabi’: October 2008 (also made a presentation)
  - Member of the faculty team that visited Eminent Autonomous Colleges in Chennai (Loyola & Stella Maris) to study the systems implemented under the autonomy status – August 2008
  - Helped organize the Alumni Dinner on 3rd January 2009 to mark the beginning of the 140 years celebration of the college
  - Member of The Institutional Biosafety Committee – Caius Research Laboratory

At the University of Mumbai level
- Member of the Board of Studies – Microbiology, University of Mumbai
- Member of the Faculty of Science, University of Mumbai
- Member of the Syllabus Committee for Microbiology
- Chairperson of the Examination Committee for M.Sc Microbiology I
- Invited Member of panels for selection and confirmation of teaching faculty of Departments of Microbiology of several colleges in Mumbai.
- Judge of several intercollegiate competitions involving Microbiological aspects organized by various colleges affiliated to the University of Mumbai

International level
- Awarded The American Society for Microbiology (ASM) and the UNESCO ‘Leadership Grant for International Educators’ May 2009 which allowed for participation in the ASM 16th Annual Conference for Undergraduate Educators (ASMCUE) and a pre-meeting workshop May 28-31, 2009 at Colorado State University in Ft. Collins, Colorado, USA
  - Headed the Faculty team that framed the syllabus for a Post Graduate Diploma in Industrial Biotechnology and Enterprise at St. Xavier’s College, leading to a Masters Degree from the University of Bath, U.K. 2009

Research Related
Oral Presentations:
- ‘Teaching, Learning, Evaluation Component of NAAC’
  At the lecture-cum-workshop for faculty of Dr. Bhanuben Mahendra Nanavati College of Home Science affiliated to S.N.D.T. University, November, 2008.

Poster Presentations
- “Service Learning – Intervention Strategies in Malaria and Water Borne Disease Awareness Programs in Low Income Communities”
  At the ASM Conference for Undergraduate Educators (ASMCUE). 2009 at Colorado State University Colorado, USA: Dr. Ms. Vivien Amonkar & Ms. Karuna Gokarn

Continuous Professional Development
Attended
- Food Safety Workshop: June 2008, Bhavan’s Research Centre
- Faculty Seminars in college
  - VISIONING FOR 2015 – 26th and 27th February, 2009
‘Systems in Autonomy – Credits and Syllabi’ : October 2008 (also made a presentation)
Attended a workshop (in collaboration with the Board of Studies) on Designing the University syllabus grid in Microbiology, for the Faculty in the subject. – October 2008
International Colloquium on Higher Education and Society at St. Xavier’s College 15th Dec. 2008

2009-10
At the College level:
• Associate Prof. - Head of the Dept. of Microbiology
• Coordinator/ Head of the M.Sc. Biotechnology Course
• Vice Principal – Academic Improvement of the college upto June 2011

In this capacity:
• Co-ordinator of the Introduction of Autonomy in the college
• Co-ordinator of the Honour’s Programme of the college
• Convenor of IQAC
• Member of the Council for International Programmes
• Member of the Purchase Committee of the college
• Co-ordinated several staff workshops/ seminars
• Orientation Programme for new Teaching faculty – 16th & 17th June 2009
• Workshop on ‘Lecturing and Assessments for Large Group Teaching’: Dr. (Ms.) Momna Hejmadi, University of Bath, U.K June, 2009
• Alternatives in Continuous Internal Assessments – November 2009
• Semester System, Credits and Syllabi under the autonomy system December 2009
• Assessment of Practicals – December 2009
• Service Learning – January 2010
• Faculty Research Presentations – February 2010
• Faculty Seminar May 2010
• Made presentations at the
• Orientation Programme for new Teaching faculty
• Alternatives in Continuous Internal Assessments – November 2009
• Semester System, Credits and Syllabi under the autonomy system – December 2009
• Assessment of Practicals – December 2009
• Service Learning – January 2010
• Faculty Seminar May 2010
• Helped organise the Alumni Dinner on 3rd January 2010 to mark the end of the 140 years celebration of the college
• 2010 -Interacted with the Eureka Forbes Institute of Environment which guided students who carried out the environment audit of the college.
• Co-ordinated Environment day celebrations of the college on 14th January, 2010. This included an exhibition in which students displayed their environment related initiatives and a talk by Sir Robert Swan, titled Walk the Talk (organised in collaboration with Sanctuary Asia)
• Member of The Institutional Biosafety Committee – Caius Research Laboratory
At the University of Mumbai level
- Member of the Board of Studies – Microbiology, University of Mumbai
- Member of the Faculty of Science, University of Mumbai
- Member of the Syllabus Committee for Microbiology
- Chairperson of the Examination Committee for M.Sc Microbiology I
- Member of the Committee as Subject Expert in Microbiology for recommending University Minor Research Grants for Science Faculty
- Appointed member of the Local Inquiry Committee:
  - Karmaveer Bhaurao Patil College, Vashi Navi Mumbai - July 2009
  - Continuation of recognition to enroll students for M.Sc (by research) degree
  - CHM College - Continuation of recognition to enroll students for M.Sc (by research) and PhD degree
- Vice Chancellor nominee for selection of teacher for Teacher Fellowship Scheme - XI Plan RKT College – May 2009
- Subject Expert (Microbiology) on Interview Panel for selecting candidates for the award of the Teacher Fellowship Scheme - XI Plan Period – 30th June, 2009, Sophia College.
- Lecturer in Senior Grade – 24th September, 2009, Wilson college
- Subject Expert (Biotechnology) on Interview Panel for selecting candidates for the Lecturer’s post – 4th September, 2009, K.C. College.
- Gave the Inaugural Address at the National Seminar on Expanding Panorama of Microbiology – Changu Kana Thakur College, New Panvel 26th February 2010
- Judge at the poster presentation at the Research Scholar’s Meet 2009- 10 Institute of Science 11th Feb 2010
- Judge at the debate competition at the annual Biotechnology festival at Jai Hind College- 12th September

Other Universities
- Invited Member of the QAC of Dr. Bhanuben Mahendra Nanavati College of Home Science affiliated to S.N.D.T. University
- Appointed as Examiner for a Ph. D. thesis, Pune University, October 2009
- Subject Expert (Microbiology) on Interview Panel for selecting candidates for Assistant professor - 20th March, 2010, Technical Education Sanchalaya, Government of Maharashtra

International level
- Participated in the International Conference – ‘Shaping the future’ Networking Jesuit Higher Education for a Globalizing World 21 – 25th April, 2010 at Universidad Iberoamericana, Mexico
Research Related
Oral Presentations:
• ‘Continuous Assessment – A Quality Strategy?’ At the conference on Examination Reforms in Higher Education for Universities and Colleges held in Christ University, Bangalore - December 2010

Poster Presentations
• “International Pairing of Two Student Populations Studying the Same Global Health Issues: Mumbai, India and Danbury, Connecticut, U.S.A.”
  At the ASM Conference for Undergraduate Educators in San Diego, California U.S.A. May 2010: Ruth Gyure (Connecticut State University U.S.A) & Dr. Ms. Vivien Amonkar

Projects
• Minor Research Project from the University of Mumbai –
  “Assessment of drinking water quality in slums– source and storage waters”
  : 2009-10

Continuous Professional Development
Conferences, Seminars, Workshops Attended
• International Conference -ASM 16th Annual Conference for Undergraduate Educators and a pre-meeting workshop May 28- 31, 2009 at Colorado State University, Colorado USA
• International Conference – ‘Shaping the future’ Networking Jesuit Higher Education for a Globalizing World 21 – 25th April, 2010 at Universidad Iberoamericana, Mexico
• National Level Conference on ‘ Academic Staff Development : Strengthening Institutional Links’ February 5-7, 2009 at Christ University, Bangalore
• Workshop on Revised TYBSc University Syllabus in Microbiology -April 29th, 2010. at Wilson College (Resource Person)
• Workshop on ‘Lecturing and Assessments for Large Group Teaching’:
  Dr. (Ms.) Momna Hejmadi, University of Bath, U.K June, 2009 at St. Xavier’s College
• Faculty Seminars at St. Xavier’s College
  ▶ Alternatives in Continuous Internal Assessments – November 2009
  ▶ Semester System, Credits and Syllabi under the autonomy system – December 2009
  ▶ Assessment of Practicals – December 2009
  ▶ Service Learning – January 2010
  ▶ Faculty Seminar May 2010

2010- 11
At the College level
• Associate Prof. - Head of the Dept. of Microbiology
• Head of the M.Sc. Biotechnology Course
• Vice Principal – Academic Improvement of the college
  In this capacity:
Co-ordinator of the Introduction of Autonomy in the college
Co-ordinator of the Honour’s Programme of the college
Convenor of IQAC
Member of the Council for International Programmes
Member of the Purchase Committee

- Co-ordinated several staff workshops/ seminars
- Orientation Programme for new Teaching faculty – 30th June & 1st July, 2010
- Workshop - ‘Criteria for Continuous Assessment’ – 7th July 2010
- Workshop – Reviewing Autonomy Systems – 18th August, 2010
- Seminar in Khandala: Organisational behaviour team building and teacher leader- 7th to 9th October 2010
- Faculty Research Presentations – February 2011
- Faculty Seminar – April 2011
- Made a presentation at the
- Orientation Programme for new Teaching faculty – 30th June & 1st July, 2010
- Workshop - ‘Criteria for Continuous Assessment’ – 7th July 2010

- Member of the Management Board, Academic Board and Examination Committee of St. Xavier’s College – autonomous
- Organised ‘College Environment Day’ which involved an exhibition and a talk by Sir Robert Swan, the first person to walk to both Poles.

At the University of Mumbai level
- Member of the Board of Studies – Microbiology, University of Mumbai up to 31st August 2010.
- Member of the Faculty of Science, University of Mumbai, up to 31st August 2010.
- Member of the Syllabus Committee for Microbiology
- Chairperson of the Examination Committee for M.Sc Microbiology I
- Member of the Committee as Subject Expert in Microbiology for recommending University Minor Research Grants for Science Faculty
- Subject Expert for selection of teacher for Teacher Fellowship Scheme - XI Plan Jai Hind College – December 2010
- Subject Expert (Microbiology) on Interview Panel for Assistant Professor – 10th July, 2010, Wilson college

Other Universities
- Invited as subject expert for Unitization of the UG Syllabus of Sikkim University in the subjects of Microbiology and Environmental Studies June 2010
- Invited Member of the QAC of Dr. Bhanuben Mahendra Nanavati College of Home Science affiliated to S.N.D.T. University

International level
- Selected by the college to participate in a faculty visit to the University of Bath, UK which was partially sponsored by British Council. May 2011
Research

- **M.Sc Projects guided (Papers students)**
  - Synthesis and Characterization of Silver Nanoparticles from Biological Sources.

- **Oral Presentations:**
  - ‘Continuous Assessment – A Quality Strategy?’ At the conference on Examination Reforms in Higher Education for Universities and Colleges held in Christ University, Bangalore- December 2010
  - ‘Academic Autonomy: Curriculum Development & Continuous Assessment’ At the seminar of the Teacher’s Academic Forum of Jai Hind College titled ‘Teaching Gen X and Beyond’ February, 2011
  - ‘Autonomy to Colleges’ At the 2 day workshop on ‘ Autonomy to Colleges in Maharashtra State ‘ at Birla College, Kalyan , April, 2011 with Dr. Frazer Mascarenhas, SJ
  - ‘Honour’s Programme at St. Xavier’s College’ At the Innovations in Learning and Teaching Swap Shop –University of Bath Innovation Day , May 2011

- **Poster Presentations**
  - Was involved in an International Presentation as a collaborator- ‘Engaging international students in biotechnology and enterprise’ at the ‘Effective Learning in the Biosciences Conference 2011, University of Edinburgh. Dr. Momna Hejmadi, Dr.Madhuri Hambarde & Dr. Ms. Vivien Amonkar.

**Continuous Professional Development**

Conferences, Seminars, Workshops Attended

- Conference on Examination Reforms in Higher Education for Universities and Colleges held in Christ University, Bangalore- December 2010
- The Innovations in Learning and Teaching Swap Shop –University of Bath Innovation Day , May 2011
- Several staff workshops/ seminars
  - Workshop - ' Criteria for Continuous Assessment’ – 7th July 2010
  - Workshop – Reviewing Autonomy Systems – 18th August, 2010
  - Seminar in Khandala: Organizational behavior team building and teacher leader- 7th to 9th October 2010
  - Faculty Research Presentations – February 2011
  - Faculty Seminar – April 2011
- Participated in a faculty visit to the University of Bath, UK which was partially sponsored by British Council. May 2011

**2011-12**

At the College level:

- Associate Prof. - Head of the Dept. of Microbiology
- Head of the M.Sc. Biotechnology Course
- Member of the Management Board, Academic Board and Examination Committee of St. Xavier’s College – autonomous
- Member of the Custodian Committee
• Made a presentation on Grids for Group Presentations

**At the University of Mumbai level**

• Member of the Syllabus Committee for Microbiology
• Chairperson of the Examination Committee for M.Sc Microbiology I up to October 2011
• Member of the Examination Committee for M.Sc Microbiology II

**International level**

• Member of the ASM Journal of Microbiology & Biology Education (JMBE) Editorial Board as reviewer
• Selected by the college to participate in a faculty visit to the University of Bath, UK which was partially sponsored by British Council. May 2011
• Member of a St. Xavier’s college team which collaborated with Fairfield University Connecticut, USA and Loyola college, Chennai on a joint research project 2011-12
• Organized and coordinated a Faculty Development Programme – a British Council sponsored Knowledge Economy Partnerships 2011 Programme – in which St. Xavier’s College partnered with two UK universities – University of Bath and Liverpool Hope University. Visited several UK universities as part of this program to study teaching learning practices, May, 2012
• Coordinated the Collaboration between St. Xavier’s College and the University of Bath UK which involved a Summer Exposure Program in which eleven Bioscience students of St. Xavier’s College spent three weeks of lectures, practicals and exposure to research labs at the University of Bath.

**Research Related**

• **Oral Presentations:**
  - ‘The Xavier’s Experience of turning Autonomous’ at the Professional Development Programme organized at St. Xavier’s College by the Academic Staff College for academic administrators and principals of colleges in Maharashtra: Feb, 2012
  - Plenary Session ‘Approaches to Teaching and Learning – an Indian Perspective’ at the conference ‘Enhancing the International Student Learning Experience in the Biosciences’ organized by the Higher Education Academy STEM Biosciences and the Dept. of Biology & Biochemistry, University of Bath, UK: May, 2012

**Continuous Professional Development Attended**

• Conference ‘Enhancing the International Student Learning Experience in the Biosciences’ organised by the Higher Education Academy STEM Biosciences and the Dept. of Biology & Biochemistry, University of Bath, UK: May, 2012
• Visited several UK universities to study teaching learning practices, May, 2012 as part of a Faculty Development Programme – a British Council sponsored Knowledge Economy Partnerships 2011 Programme – in which St. Xavier’s College partnered with two UK universities – University of Bath and Liverpool Hope University.
• A 3 day workshop on animal tissue culture and gas chromatography in June conducted in the college
• A workshop on Bioinformatics in College- June.
• Seminar on “Scientific Communication Skills” – April 16th ,2012

B. Ms. Miriam Stewart

2007-2008

At the College level
• Convenor and Member of the Infrastructure Committee of The College

At the University of Mumbai level
• Paper setter and Examiner for T.Y.B.Sc Microbiology Practicals.
• T.Y.B.Sc Practical Examiner And Paper Setter Oct 2007

Continuous Professional Development -
• Attended Seminars Held In College
• Attended a workshop on the Revised Pattern of M.Sc University Practical Examination in Microbiology, for the M.Sc Faculty in the subject. – October 2007 held at St Xaviers College
• Judged Paper Presentations For Selection Of 2 Papers To Be Sent Up For An Interdisciplinary Competition In Biological Sciences In The College.
• Organized Talk On ‘Leveraging Technologies In Laboratory Diagnosis’ By Dr. Pascoal Carvalho Through The Prof. J.V. Bhat Memorial Committee.
• Involved in the Organization of International Conference on Recent Advances in Pharmaceutical Microbiology held as part of the Platinium Jubilee celebrations of the Department.
• Involved in the Organization of the Alumni dinner as part of the Platinium Jubilee celebrations of the Department.

Research
• M.Sc Projects guided (Papers students)
  1) The Study of Bacterial and Fungal Xylanases and their application in saccharification.
  2) Characterization of Alkaline Proteases from Bacillus spp. and study of its potential applications

2008-2009

At the College level
• Convenor and Member of the Infrastructure Committee of The College

At the University of Mumbai level
• Paper setter and Examiner for T.Y.B.Sc Microbiology Practicals- April 2009.
• Examiner For MSc Biotechnology Practicals- April 2009

Continuous Professional Development
• Attended Seminars On Autonomy Held In College

2009-2010

At the College level
• Member of The Placement Committee, Of The College.
• Helped in organising an event for the Alumni Dinner on 3rd January 2010 to mark the end of the 140 years celebration of the college

Co-curricular Activities
• Conducted Workshop On Western Blot And Elisa Techniques for Honours Programme
• Honour’s programme- Involved in the organization of Annual department exhibition

At the University of Mumbai level
• Examiner For T.Y.B.Sc Microbiology Practicals/ April 2010.
• Examiner For Msc I Biotechnology Practicals- April 2010

Continuous Professional Development
• Attended Seminars On Autonomy – Continuous Internal Assessment & Service Learning Seminars, Research Paper Presentations
• Attended Seminar On’ When To Use Which Statistical Tool To Analyze Data And Conclude’ Held On 6th And 7th May, 2010 At SIES College Of Management Studies, Nerul

2010-2011
At the College level
• Member of the Placement Committee,

Department Co-curricular Activities
• Conducted Workshop On Polymerase Chain Reaction Techniques,
• Involved in the organization of Annual department exhibition

At the University of Mumbai level
• Paper setter and Examiner For T.Y.B.Sc Microbiology Practicals/ April 2011.
• Examiner For Msc I Biotechnology Practicals- April 2011
• Examiner For Msc I Microbiology Theory- April 2011

Continuous Professional Development -
• Attended Faculty Autonomy Seminars and Research Paper Presentations
• Attended Faculty Seminar On Management Skills Of Autonomy Seminar, In Khandala.
• Member of Mumbai Immunology Group (MIG)
• Participated in a faculty visit to the University of Bath, UK which was partially sponsored by British Council. May 2011

2011-2012
At the Department level
• Honours Programme Co-ordinator of Department

At the College level
• Member of the Infrastructure Committee in College.

At the University of Mumbai level
• TYBSc Univ Practical exam Oct 2011 , Paper Setter and Examiner
• MSc I Panel member Paper Setter and Examiner March 2012

Continuous Professional Development
• Attended 3 days workshop on animal tissue culture and gas chromatography in June conducted in the college by Caius laboratory.
Attended workshop on Bioinformatics organized by Biotechnology Dept in June.
Attended DBT sponsored Conference: Interdisciplinary Strategies in Biology 16th and 17th Dec 2011 in Ramnarain Ruia college.
Seminars conducted by College- Seminar on “Scientific Communication Skills” – April 16th, 2012
Attended’ Khandala seminar’ organized by the college

C. Ms. Sangeetha Chavan

**2007-2008**

**At the College level**

- Worked as the Convenor of the Scholarship Committee in College which oversees distribution of various scholarships for students of the College, handles the Students’ beneficiary fund-a fund for financially disadvantaged students’ and facilitates the distribution of books through the book bank for financially disadvantaged students.

**At the University of Mumbai level**

- Examiner for TYBSc Practical exams
- Conducted M.Sc Part I lectures in Microbiology

**Research**

- Received Rs 25000/- Minor Research Grant from Mumbai University-
  Production and activity studies of biosurfactants using waste substrates -6 months project

**Continuous Professional development**

- Attended a seminar on Student evaluation- St Xavier’s College
- Organized and attended a workshop on the revised pattern of the MSc university Practical examinations in Microbiology –St Xavier’s College

**2008-2009**

**At the College level**

- Worked as the Convenor of the Scholarship Committee of the College which oversees distribution of various scholarships for students of the College, handles the Students’ beneficiary fund-a fund for financially disadvantaged students’ and facilitates the distribution of books through the book bank for financially disadvantaged students.

**At the University of Mumbai level**

- Examiner for TYBSc Practical exams
- Examiner for MSc Biotechnology Practical exams
- Conducted M.Sc Part I lectures in Microbiology

**Research**

- Guided M.Sc research projects
  - Evaluation of probiotic potential of a Lactobacillus sp isolated from a lactic acid fermented product based on in vitro tests and oral administration tests in mice
  - Synthesis of silver nanoparticles from chemical, fungal and bacterial sources and evaluation of its antibacterial activity of nanoparticles impregnated on textiles.
Continuous Professional development
- Attended a Teachers training workshop on techniques in Molecular Biology at St. Xavier’s College
- Participated in a seminar on Systems in autonomy – credits and syllabi-St Xavier’s College
- Attended a seminar-Visioning for 2015-St Xavier’s College
- Organized and attended a workshop on Designing the University syllabus grid in Microbiology - Board of studies, Microbiology, Mumbai University and St Xavier’s College.

2009-2010
At the College level
- Worked as the Convenor of the Scholarship Committee of the College which oversees distribution of various scholarships for students of the College, handles the Students’ beneficiary fund-a fund for financially disadvantaged students’ and facilitates the distribution of books through the book bank for financially disadvantaged students.

At the University of Mumbai level
- Examiner for TYBSc Practical exams and Theory exams
- Examiner for MSc Biotechnology Practical exams
- Conducted M.Sc Part I lectures in Microbiology

Research
- Received Rs 22500/- Minor Research Grant from Mumbai University- Isolation of lactobacilli from lactic acid fermented products and evaluation of its probiotic potential

Continuous Professional development
- Participated in a workshop on Transaction of Revised syllabus of Microbiology for SYBSc –KC College
- Attended seminars on autonomy – continuous internal assessment & service learning seminars, research paper presentations –St Xavier’s College.

Other Activities
- Participated in a two days workshop on Issues related to Social justice and Diversity in Higher Education conducted by Centre for Study of Culture and Society, Bangalore, supported by Ford Foundation

2010-2011
At the College level
- Worked as the Convenor of the Scholarship Committee of the College which oversees distribution of various scholarships for students of the College, handles the Students’ beneficiary fund-a fund for financially disadvantaged students and facilitates the distribution of books through the book bank for financially disadvantaged students.

At the University of Mumbai level
- Examiner for TYBSc Practical exams and Theory exams
- Examiner for MSc Biotechnology Practical exams
- Conducted M.Sc Part I lectures in Microbiology

Research
• Received Rs 22500/- Minor Research Grant from Mumbai University- Isolation of lactobacilli from lactic acid fermented products and evaluation of its probiotic potential

**Continuous Professional development**
• Attended Workshop on Flow cytometry-ACTREC
• Participated in the faculty seminar on Organisational Behaviour and Team building-St Xavier’s College.
• Organized and attended a one day seminar on Infectious Diseases: Staying Ahead-St Xavier’s College.

**Other Activities**
• Coordinator-Pathways Cell, Pathways programme for Higher Education supported by Ford Foundation.
  ➢ Organized a 3 days’ Technology workshop for disadvantaged students
  ➢ Coordinated various student activities through the Pathways Cell.
• Coordinator –Equal Opportunity Centre, UGC XI Plan Development Assistance grant
  ➢ Equal Opportunity Centre was set up in college to oversee the effective implementation of policies and programmes for disadvantaged groups, to provide guidance and counseling with respect to academic, financial, social and other matters
  ➢ Conducted a soft skills workshop for students of the Commerce College
• Attended a two days seminar on Development of new pedagogic strategies and curricular innovation in the context of Social Justice and Diversity conducted by Centre for Study of Culture and Society, Bangalore, supported by Ford Foundation

**2011-2012**

**At the College level**
• Worked as a member of the Scholarship Committee in college which oversees distribution of various scholarships for students of the College, handles the Students’ beneficiary fund—a fund for financially disadvantaged students’ and facilitates the distribution of books through the book bank for financially disadvantaged students.

**At the University of Mumbai level**
• Paper setter and moderator for TYBSc exams
• Examiner for MSc Practical exams
• Conducted M.Sc Part I lectures in Microbiology

**Research**

**Continuous Professional development**
• Participated in a 3 days’ workshop on animal tissue culture and gas chromatography–St Xavier’s College
Workshop in Bioinformatics—St Xavier’s College
Selected by the college to participate in a faculty visit to Study healthy practices in Higher Education the University of Bath, UK which was partially sponsored by British Council. May 2011

Other Activities
- Coordinator—Pathways Cell—Pathways programme for Higher Education supported by Ford Foundation.
  - Organized a three days’ Technology workshop for disadvantaged students.
  - Coordinated various student activities through the Pathways Cell—Ford programme.
  - Conducted a needs analysis to recommend changes in the English language curricula for Science and Commerce students in College—supported by Ford Foundation.
- Coordinator—Equal Opportunity Centre, UGC XI Plan Development Assistance Grant
  - Equal Opportunity Centre was set up in college to oversee the effective implementation of policies and programmes for disadvantaged groups, to provide guidance and counseling with respect to academic, financial, social and other matters.
  - Three separate orientations were conducted at the beginning of the term for Science/Arts and Commerce students. Students were made aware of various scholarships/freeships/schemes and other facilities offered by the government and College.
  - Organized Soft skills workshops for 50 students—mainly from Commerce section in batches of 10-15 students per batch for a month.

D. Ms. Karuna Gokarn

2007-2008
At the College level
- Worked as a member on the examination committee of the college

At the University of Mumbai level
- TYBSc Theory examiner
- Conducted M.Sc lectures in Microbiology

Continuous Professional development
- Attended a workshop on the revised pattern of the M.Sc university practical examinations in microbiology conducted by the board of studies and dept. Of microbiology, St. Xavier’s college, Mumbai, held in October 2007.
- Attended a seminar on in October 2007 at St. Xavier’s college, Mumbai.
- Attended a workshop on validation in the laboratory at VES College in December 2007.
- Attended a workshop on bioinformatics at ACTREC in January 2008.

Other Activities
- Judged paper presentations for selection of 2 papers to be sent up for an interdisciplinary competition in biological sciences in the college.

2008-2009
At the College level
- Worked as a member on the examination committee of the college
At the University of Mumbai level
- TYBSc Theory examiner
- Conducted M.Sc lectures in Microbiology

Research
- Received a minor research university grant for a project on Biosorption of industrial dyes using dead fungal biomass
- Helped in making poster presentation on “Service Learning – Intervention Strategies in Malaria and Water Borne Disease Awareness Programs in Low Income Communities” at the ASM Conference for Undergraduate Educators (ASMCUE). 2009 at Colorado State University Colorado, USA: Dr. Ms. Vivien Amonkar & Ms. Karuna Gokarn

Continuous Professional development
- Attended seminars on autonomy held in college

2009-2010
At the College level
- Worked as a member on the examination committee of the college

At the University of Mumbai level
- TYBSc Theory examiner
- Conducted M.Sc lectures in Microbiology

Research
- Guided M.Sc research projects:
  - Study of Nutraceutical properties of Morinda citrofolia (Noni) fruit extract and its comparative analysis with traditional Noni juice.
  - Extraction & characterization of Silk Sericin protein & its applications in industry

Continuous Professional development
- Attended seminars on autonomy – continuous internal assessment & service learning seminars, research paper presentations
- Participated in a workshop on bioinformatics at Ruia college
- Life membership of Mumbai Immunology Group

2010-2011
At the College level
- Worked as a member on the examination committee of the college

At the University of Mumbai level
- TYBSc Theory examiner
- Conducted M.Sc lectures in Microbiology

Research
- Completed a research project and published a paper on Siderophores & pathogenicity of microorganisms in the Journal of Biosciences & Technology in October 2010

Continuous Professional development
- Attended a workshop on proteomics at ACTREC
- Attended autonomy seminars, research paper presentations

2011-2012
At the College level
• Worked as a member on the examination committee of the college

At the University of Mumbai level
• TYBSc Theory and Practical examiner
• Conducted M.Sc lectures in Microbiology

Continuous Professional development
• Participated in 3 weeks Summer exposure program at the University of Bath, UK in the month of May 2012
• Participated in Plenary Session ‘Approaches to Teaching and Learning – an Indian Perspective’ at the conference ‘Enhancing the International Student Learning Experience in the Biosciences’ organised by the Higher Education Academy STEM Biosciences and the Dept. of Biology & Biochemistry, University of Bath ,UK: May , 2012
• Attended seminar conducted by college- seminar on “Scientific communication skills” – April 16, 2012
• Helped to organize a workshop on awareness of infectious diseases for the non-teaching staff of the college
• Also participated in the workshop on HACCP principles conducted for canteen staff of the college
• Participated in 3 days workshop on animal tissue culture and gas chromatography at St. Xavier’s College
• Participated in Bioinformatics workshop at St. Xavier’s College

Department of Physics

1. Name of the Department & its year of establishment:
   DEPT OF PHYSICS, 1884

2. Names of Programmes / Courses offered:
   UG (6 UNITS B.Sc. with physics)

3. Interdisciplinary courses and departments involved:
   (1) ‘Computer Science’ as applied component at third year (5th and 6th sem) departments involved are Geology, Mathematics, Statistics, Chemistry, Physics.  
   (2) ‘Astronomy, Physics and its impact on the world’ offered to 4th sem students of Arts Faculty, 
   (3) ‘The scientific Revolution and the shifting paradigm’ offered to 4th sem students of Arts Faculty. (4) A member of another department is involved in the syllabus development to bring in the interdisciplinary perspective.

4. Annual/ semester/choice based credit system: semester based credit system

5. Participation of the department in the courses offered by other departments:
   A Few teachers from the physics department participate in the courses offered by the IT department.
6. Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associate Professors</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>4</td>
<td>4</td>
</tr>
</tbody>
</table>

7. Faculty profile with name, qualification, designation, specialisation (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 in the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. Shyamala P. Bodhane</td>
<td>M. Sc., M.Phil, Ph.D.</td>
<td>Associate Professor and HOD</td>
<td>Electronics, Thin film technology</td>
<td>28yrs, 4 months</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. K. Vedasankari</td>
<td>M.Sc., Ph.D.</td>
<td>Associate professor</td>
<td>Electronics, Xray crystallography</td>
<td>23yrs, 6 months</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Jyoti Singh</td>
<td>M.Sc., Ph.D.</td>
<td>Associate Professor</td>
<td>Electronics, Exptal Astronomy</td>
<td>17years</td>
<td>Nil</td>
</tr>
<tr>
<td>Rajesh Singh</td>
<td>M.Sc.</td>
<td>Assistant Professor</td>
<td>Electronics</td>
<td>9 years</td>
<td>Nil</td>
</tr>
<tr>
<td>Ajay Yadav</td>
<td>M. Sc.</td>
<td>Assistant Professor</td>
<td>Electronics</td>
<td>4 years, 6 months</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Rohan Jadhav</td>
<td>M.Sc., Ph.D.</td>
<td>Assistant Professor</td>
<td>Electronics, Material science</td>
<td>2 years, 5 months</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Ashwin Kale</td>
<td>M.Sc., Ph.D.</td>
<td>Assistant Professor</td>
<td>Nuclear physics, Thin film coating</td>
<td>6 months</td>
<td>Nil</td>
</tr>
</tbody>
</table>

8. Percentage of classes taken by temporary faculty – programme-wise information:
   no temporary faculty exist in the dept

9. Programme-wise Student Teacher Ratio
   FYBSc: 26/1,
   SYBSc: 20/1,
   TYBSc: 20/1

10. Number of academic support staff (technical) and administrative staff:
    sanctioned and filled: Lab Attendants: 7, Lab Assistants: 2
11. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise. :NIL

12. Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received
1. Minor Research project funded by University of Mumbai was undertaken by Prof. S. Bodhane in 2011-12 with total grant of Rs 25000/-.
2. Minor Research project funded by University of Mumbai is undertaken by Prof. A. Yadav during the current year, 2012-13, with total grant of Rs 27400/-. 
3. Star College Grand: Non Recurring Rs. 5,00,000/-, Recurring Rs. 2,00,000/- per year for 5 years
4. DST-FIST grant of Rs. 3,00,000/-

13. Research facility / centre with
- state recognition
- national recognition
- international recognition
Nil.

14. Publications:
* number of papers published in peer reviewed journals (national / international)
Following is the list of publications in last five years:
I. Dr. Ashwin Kale:

II. Dr. Rohan Jadhav:
1. ‘Computation of X-ray powder diffractograms of cement components and
its application to phase analysis and hydration performance of OPC cement’

III. Dr. S. Bodhane


* Monographs
* Chapter(s) in Books
* Editing Books
* Books with ISBN numbers with details of publishers
* number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)
* Citation Index – range / average
* SNIP
* SJR
* Impact factor – range / average
* h-index

15. Details of patents and income generated Nil.

16. Areas of consultancy and income generated Nil

17. Faculty recharging strategies
   Prof. Bodhane attended a 3 day workshop on ‘Nano Science and Materials’ AT Univ of Pune in Jan 2010.
   Prof. Bodhane attended a 2 day workshop on ‘Examination Reforms’ at Christ Univ, Bangalore in 2010.
   Prof. Bodhane attended a 3 day workshop on ‘Leadership Programme for HOD’s’ at Christ Univ, Bangalore in 2012.
   Prof. Bodhane participated an academic visit arranged and funded by college to two universities in U.K. in May 2011.
   Prof Vedasankari attended a 2 day workshop on ‘Unfolding the Universe’ at R.D. National college, Mumbai in 2010.
   Prof Jyoti Singh attended a one day workshop on ‘Applications of Special Relativity to Astrophysics’ held at Khalasa college, Mumbai in Jan 2009.
   Prof Jyoti Singh participated an academic visit arranged and funded by college to two universities in U.K. in May 2011.
   Prof. Ajay Yadav participated in a one day workshop on ‘Constructing
Embedded Technology System using microcontroller’ in Jan 2011.

Prof Rohan Jadhav attended an international conference, ICWNCN, organized by Delhi University in April 2012.

All our teachers have attended the workshops conducted for university college teachers for discussions on revised syllabi of Mumbai

18. Student projects
- percentage of students who have done in-house projects including inter-departmental: 20%
- percentage of students doing projects in collaboration with industries / institutes: 2%

19. Awards / recognitions received at the national and international level by
- Faculty
- Doctoral / post doctoral fellows
- Students

20. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.

21. Student profile course-wise:

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>Applications received</th>
<th>Selected Male</th>
<th>Female</th>
<th>Pass percentage Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.Sc – (Physics)</td>
<td>295</td>
<td>232</td>
<td></td>
<td>FY: 75</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY: 90</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TY: 90</td>
<td></td>
</tr>
</tbody>
</table>

22. Diversity of students

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>% of students from the College</th>
<th>% of students from the State</th>
<th>% of students from other States</th>
<th>% of students from other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental data not available</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

23. How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations?
Data not available
24. **Student progression**

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Percentage against enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>60%</td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td></td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td></td>
</tr>
<tr>
<td>• Campus selection</td>
<td></td>
</tr>
<tr>
<td>• Other than campus recruitment</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td></td>
</tr>
</tbody>
</table>

25. **Diversity of staff**

<table>
<thead>
<tr>
<th>Percentage of faculty who are graduates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>of the same parent university</td>
<td>86%</td>
</tr>
<tr>
<td>from other universities within the State</td>
<td>nil</td>
</tr>
<tr>
<td>from other universities from other States</td>
<td>14%</td>
</tr>
</tbody>
</table>

26. **Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period.**: ONE

27. **Present details about infrastructural facilities**
   a) Library: **around 400 books in dept library**
   b) Internet facilities for staff and students **internet connection on two terminals in the dept for staff**
   c) Total number of class rooms: 40 classrooms used in common
   d) Class rooms with ICT facility: All
   e) Students’ laboratories **4 labs covering roughly 6000sq. ft. area.**
   f) Research laboratories: Nil.

28. **Number of students of the department getting financial assistance from College.** An average of 5 per year

29. **Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology.**
   Yes. We did contact our students who have undertaken various courses for post graduate degrees and obtain feedback from them regarding the shortcomings of our syllabus and the treatment given to it. This helped us in planning new courses or upgrading the existing ones.

30. **Does the department obtain feedback from**
   1. **faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it?**
      YES. We discuss positive changes sitting together and put them forth in the Board of Studies Meetings for further discussion and action.
   2. **students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?**
      YES. The concerned staff is advised to make sue of some solutions to the
problems if any, and encouraged if the feedback is positive.

3. **alumni and employers on the programmes and what is the response of the department to the same?**
   They are part of BOS, their suggestions are incorporated after proper discussions.

31. **List the distinguished alumni of the department (maximum 10):**
   - **Dr. Aseeem Paranjape:** Ph.D. in Cosmology from TIFR presently a post-doc fellow at the univ of zurich;
   - **Dr. Sanhita Dikshit:** Ph.D. in Biophysics;
   - **Dr. Sharvari Nadkarni:** Visiting Faculty at IIT Kanpur, Ph. D. Cornell University, USA,
   - **Mr. Sushil Chejara:** M.Sc from IIT Roorkey working at GCI Sikar;
   - **Mr. Abhimanyu Radhakrishnan:** Vice President, India times;
   - **Mr. Jimmy Shroff:** Program Manager, Zeus Learning;
   - **Ms. Amruta Gadge:** Univ Rank holder of 2008-09 batch, M. Sc. Physics From Poona Univ., pursuing PhD in Quantm Optics from Raman Research Institute, Bangalore.
   - **Mr. Sharanya Ghosh:** pursuing Phd. at TIFR with High Energy Physics group in collaboration with LHC, CERN, Switzerland.
   - **Mr. Achintya Rao:** Science communicator with CERN lab.
   - **Ms. Sania Zaidi:** pursuing PhD in Science Education from Univ. of Michigan

32. **Give details of student enrichment programmes (special lectures / workshops / seminar) with external experts.**
   1. A work shop on science communication was arranged in Sept 2012 for second year students wherein Mr. James Dacey, Multimedia Projects Editor of Physics World, U.K., talked to students about science reporting as a field. He also talked to few students regarding physics education in India.
   2. A seminar on Higg’s Boson was arranged on 1st Augst 2012. Prof Kajouri Mazumdar and Prof Amol Dighe, the scientists from TIFR, were invited to give detail information about the latest discovery of Higgs Boson to our students.
   3. A special lecture of Prof T. P. Singh, TIFR was arranged for SYBSc students on Quantum Physics in Sept 2011.
   4. Prof Punit Purmanan, IIT Mumbai was invited in Jan 2011 to talk on ‘Chaos’.
   5. Prof Vandana Nanal, TIFR, was invited to deliver a special lecture on ‘Exploring the Nuclea world’ in Jan 2011.
   6. A two day workshop ‘Opening windows of Physics’ was arranged for career guidance to the physics students in April 2011.
   7. A two day workshop on ‘Cosmology’ was arranged for Physics teachers and students of Mumbai University UG colleges in Jan 2010 where scientists from TIFR, IIUCA and Mumbai University were invited as speakers.
   8. An inter college quiz competition in physics, ‘spectaculum’, was arranged in January 2009.
33. List the teaching methods adopted by the faculty for different programmes.
1. Some lecture courses are given with the help of PPT presentations.
2. Working demonstrations are arranged in the class for some topics.
3. Some demonstrations are downloaded from different websites and presented in the class.
4. At least six Demonstrations on various concepts of physics are part of FY as well as SY syllabus.
5. Skills required for performing practicals are taught with proper emphasis and tested separately during internal assessment.

34. How does the department ensure that programme objectives are constantly met and learning outcomes monitored?
1. The students are frequently asked to give their feedback about the courses and the methods adopted to handle them. Based on the feedback an appropriate action is taken as early as possible.
2. Every assessment is carefully judged and the reasons for good or bad performance of students are identified, discussed with them and necessary action is taken in the next part of the course.
3. The TAQ administered by the College is used as feedback by each teacher in consultation with the Vice Principal.

35. Highlight the participation of students and faculty in extension activities.
1. Each student spends 60 hrs over the three years of graduation in Social Involvement Programme of the College.
2. One of the teachers is actively working as a committee member for one school.
3. One teacher is involved in the activities of Homi Bhabha Center for Science Education.

36. Give details of “beyond syllabus scholarly activities” of the department.
1. For past four years we are taking FYBSc students to visit Homi Bhabha Center for science Education, a branch of TIFR, where they get a chance to experience and handle some working models through which they learn and understand basic concepts of physics.
2. Second year students, with the help of teachers, have been arranging an exhibition, for past four years, to demonstrate the juniors how interesting and simple the Physics is through some demonstrations.
3. The third year students are taken to visit TIFR, Mumbai.
4. Our department is publishing a magazine for past four years, earlier named as ‘VOID’ now changed to ‘CELERITAS’, with major component of work and articles put in by students of all the three years.
5. Every year number of students undertake various projects under the guidance of department faculty members and complete them successfully to get Honour’s credits.
6. Each third year student takes up a project in the 5th as well as 6th semester as one component of practical course.
7. A group of first year students have started ‘the physics circle’ through which they get chance to discuss physics of their interest, beyond syllabus,
and will in future take help of scientists and researchers in various fields to upgrade their knowledge.

37. **State whether the programme/ department is accredited/ graded by other agencies. Give details.** No.

38. **Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department:**

1. There is good cooperation among the teaching staff as well as the non-teaching staff of the department.
2. The teaching staff is willing to upgrade their knowledge and handle different teaching and evaluation methods. This helps in making required changes in the courses.
3. The number of good, interested students coming for Physics is increasing every year, we have to keep providing them enough challenge and support to maintain their interest in the subject.
4. We also get a large number of students coming to our subject at the first year level, who are not much interested in the subject and have not made up their mind to select the subject for final graduation. It is a challenge to us to develop interest in them for Physics and make them comfortable with the subject.
5. To make the students aware of opportunities in the field of Physics, they should be sent out to various industries, institutes for visits, internship programmes or should be given chance to meet people working in different fields after having graduated in physics.

39. **Future plans of the department.**

The department would like every student graduating with Physics to go out with full satisfaction of having done physics with us. We would like to give good, valuable projects for our third year students and an opportunity to do internship with good institutes or industries to our second year students. We would also like to start M.Sc. by Research in Physics.

**Department of Statistics**

1. **Name of the Department & its year of establishment**
   Department of Statistics. Estd: 1987

2. **Names of Programmes / Courses offered**
   BSc.

3. **Interdisciplinary courses and departments involved**
   The department offers a Cross Faculty Course on Descriptive Statistics – for Sociology/ Psychology /Economics /BMM /BMS students.
   It also works with the Microbiology department to give an interdisciplinary perspective.
4. Annual/ semester/choice based credit system
   Semester Choice based credit system

5. Participation of the department in the courses offered by other departments
   Our Science students take up courses offered by the Arts Departments and vice versa.

6. Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Associate Professors</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

7. Faculty profile with name, qualification, designation, specialisation (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 in the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pooja Ochaney</td>
<td>M.Sc</td>
<td>Assoc. Prof. &amp; Head of Dept.</td>
<td>Statistics</td>
<td>26</td>
<td>NIL</td>
</tr>
<tr>
<td>Myrtle Fernandes</td>
<td>M.Sc</td>
<td>Assoc. Prof.</td>
<td>Statistics</td>
<td>29</td>
<td>NIL</td>
</tr>
<tr>
<td>Ayesha Dias</td>
<td>M.Sc</td>
<td>Assoc. Prof.</td>
<td>Statistics</td>
<td>23</td>
<td>NIL</td>
</tr>
<tr>
<td>Saju George</td>
<td>M.Sc, M.Phil</td>
<td>Assoc. Prof.</td>
<td>Statistics</td>
<td>23</td>
<td>NIL</td>
</tr>
<tr>
<td>S. Annapurna</td>
<td>M.Sc</td>
<td>Asst. Prof.</td>
<td>Statistics</td>
<td>20</td>
<td>NIL</td>
</tr>
<tr>
<td>P. Unnikrishnan</td>
<td>M.Sc</td>
<td>Asst. Prof.</td>
<td>Statistics</td>
<td>15</td>
<td>NIL</td>
</tr>
</tbody>
</table>

8. Percentage of classes taken by temporary faculty – programme-wise information
   NIL

9. Programme-wise Student Teacher Ratio
   FY - 30 : 1; SY – 25 : 1; TY – 20:1

10. Number of academic support staff (technical) and administrative staff: sanctioned and filled
    Part-time Laboratory Assistant

11. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise.
    NIL

12. Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received
    NIL
13. Research facility / centre with
   - state recognition  NIL
   - national recognition  NIL
   - international recognition  NIL

14. Publications: NIL
   * number of papers published in peer reviewed journals (national / international)
   * Monographs
   * Chapter(s) in Books
   * Editing Books
   * Books with ISBN numbers with details of publishers
   * number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)
   * Citation Index – range / average
   * SNIP
   * SJR
   * Impact factor – range / average
   * h-index

15. Details of patents and income generated : NIL

16. Areas of consultancy and income generated : NIL

17. Faculty recharging strategies
1. Attending interactive sessions/ seminars/ workshops conducted by other colleges.
2. Attending faculty improvement programmes conducted by the college.
   i) Seminar on Publishing Academic Research
   ii) Seminar on how to deal with underachievers
   iii) Seminar on Alternatives in Continuous Internal Assessment.
3. Teachers were sent to U.K. to visit University of Bath to have an experience on their Administrative and Teaching methods.

18. Student projects
   - percentage of students who have done in-house projects including inter-departmental Approx. 10%
   - percentage of students doing projects in collaboration with industries / institutes 1 – 2%

19. Awards / recognitions received at the national and international level by
   - Faculty : NIL
   - Doctoral / post doctoral fellows : NIL
   - Students : NIL
20. **Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.**

- Events conducted on a larger scale, which involves intercollegiate participation like the Statistics festival ‘Xstatic’ are funded by industry sponsors like Sankhya Consultants, Future Track & Direxions Global Solutions

21. **Student profile course-wise:**

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>Applications received</th>
<th>Selected Male</th>
<th>Selected Female</th>
<th>Pass percentage Male</th>
<th>Pass percentage Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>T.Y.B.Sc</td>
<td>215</td>
<td>140</td>
<td></td>
<td>FY:90</td>
<td>SY:95</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T.Y.B.A. (Double Major)</td>
<td>170</td>
<td>142</td>
<td></td>
<td>FY:85</td>
<td>SY:95</td>
</tr>
</tbody>
</table>

22. **Diversity of students**

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>% of students from the College</th>
<th>% of students from the State</th>
<th>% of students from other States</th>
<th>% of students from other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Departmental data not available</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

23. **How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations?** No data available.

24. **Student progression**

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Percentage against enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>50%</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>
<tr>
<td>Employed</td>
<td>15%</td>
</tr>
<tr>
<td>● Campus selection</td>
<td>95%</td>
</tr>
<tr>
<td>● Other than campus recruitment</td>
<td>5%</td>
</tr>
</tbody>
</table>

25. **Diversity of staff**

<table>
<thead>
<tr>
<th>Percentage of faculty who are graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>of the same parent university</td>
</tr>
<tr>
<td>from other universities within the State</td>
</tr>
<tr>
<td>from other universities from other States</td>
</tr>
</tbody>
</table>
26. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period.
NIL

27. Present details about infrastructural facilities
a) Library About 80 books
b) Internet facilities for staff and students A lease line connection in the department for the faculty. Students have common facilities in the Library and Knowledge Centre.
c) Total number of class rooms: 40 used in common.
d) Class rooms with ICT facility: Yes all of them.
e) Students’ laboratories NA
f) Research laboratories NA

28. Number of students of the department getting financial assistance from College.
About 2 persons per year.

29. Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology. NIL

30. Does the department obtain feedback from
a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize it?
Yes. Based on their inputs, we organise lecture series and software courses for the students. Faculty members are on the Board of Study.
b. students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?
Yes.
Feedback on staff: Informal discussions in the department to improve strategies. The TAQ provides information from students on each faculty member.
Feedback on curriculum: We try to incorporate their suggestions while framing the syllabus or in our Add On courses.
c. alumni and employers on the programmes and what is the response of the department to the same?
Yes.
We are in contact with our alumni and experts from industry who give us input as to the relevant topics which would equip our students for enhancement in their future careers.

31. List the distinguished alumni of the department (maximum 10)

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Name of student</th>
<th>Posts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Malika Bhandarkar</td>
<td>Policy integration &amp; Analysis United Nations Organisations</td>
</tr>
<tr>
<td>2.</td>
<td>Vikram Vaswani</td>
<td>CEO – Melonfire</td>
</tr>
<tr>
<td>3.</td>
<td>Prashant Godiwala</td>
<td>Senior Manager – CISCO Systems</td>
</tr>
<tr>
<td>4.</td>
<td>Rohit D’costa</td>
<td>Senior Manager – Bank of America</td>
</tr>
</tbody>
</table>
32. Give details of student enrichment programmes (special lectures / workshops / seminar) with external experts.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Course Name</th>
<th>Resource person</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Clinical Trials</td>
<td>Ms Anagha Bhatkande, Ms Supriya Brahme - TATA Consultancy Service</td>
</tr>
<tr>
<td>2.</td>
<td>Case studies</td>
<td>Dr Anjali Panigrahi - Raheja College</td>
</tr>
<tr>
<td>3.</td>
<td>Market Research Programme</td>
<td>Anthony Fernandes -</td>
</tr>
<tr>
<td>4.</td>
<td>Categorical Data Analysis</td>
<td>Dr Rajan - MVLU College</td>
</tr>
<tr>
<td>5.</td>
<td>Research project for undergraduate students</td>
<td>Dr Anjali Panigrahi - Raheja College</td>
</tr>
<tr>
<td>6.</td>
<td>Geogebra</td>
<td>Dr Subramanyam, Dr Chowdhary - TIFR, Smita Patil - Homi Bhabha Science Center</td>
</tr>
<tr>
<td>7.</td>
<td>Operation Research using EXCEL</td>
<td>Sarah Vaidyan - Human Consulting Capital</td>
</tr>
<tr>
<td>8.</td>
<td>Discriminant Analysis</td>
<td>Dr Geeta Zankar - Cartesian Consulting</td>
</tr>
<tr>
<td>9.</td>
<td>Financial Mathematics</td>
<td>Sanjeev Gupta - Reserve bank of India</td>
</tr>
<tr>
<td>10.</td>
<td>Data analysis using Statistical packages</td>
<td>Dr Chowdhary - TIFR</td>
</tr>
<tr>
<td>11.</td>
<td>Advanced Operation Research</td>
<td>Dr Rajan - MVLU College</td>
</tr>
<tr>
<td>12.</td>
<td>Applications of Time Series</td>
<td>Shobna Balsubramanyam - National Stock Exchange</td>
</tr>
<tr>
<td>13.</td>
<td>Total Quality management</td>
<td>Dr Shilpa Khare - Mumbai University</td>
</tr>
<tr>
<td>14.</td>
<td>A Beginners Course in Minitab</td>
<td>N.R. Hedge - SIES College</td>
</tr>
<tr>
<td>15.</td>
<td>Application of Derivatives</td>
<td>Shobna Balsubramanyam - National Stock Exchange</td>
</tr>
</tbody>
</table>

33. List the teaching methods adopted by the faculty for different programmes.
   1. Blackboard  2. Computer.  3. O.H.P.

34. How does the department ensure that programme objectives are constantly met and learning outcomes monitored?
   1. Evaluation process  2. Asking questions in class  3. Through the practical sessions. 4. Regular department meetings of the faculty to take stock.
35. Highlight the participation of students and faculty in extension activities.

- Encouraging students to take part in intercollegiate festivals/workshops/exhibitions.
- To organize and participate in Statistics based events within the college. (Statistics festival – Xstatic, Department Magazine – The Plot, Khandala Seminar)
- First Year students have a mandatory 2 credit Social Involvement Programme.

36. Give details of “beyond syllabus scholarly activities” of the department.

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Course Name</th>
<th>Resource person</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Time Series</td>
<td>Ms. Niyati Jhalaria</td>
</tr>
<tr>
<td>2.</td>
<td>Mumbai road transport project</td>
<td>Ms. Antara Ganguly &amp; Ms. Anwesha Chowdhary</td>
</tr>
<tr>
<td>3.</td>
<td>Statistics in EXCEL</td>
<td>Ms. R. Madhura, XIMR</td>
</tr>
<tr>
<td>4.</td>
<td>Qualitative analysis in politics and policy making</td>
<td>Ms. Shruti Jagirdar</td>
</tr>
<tr>
<td>5.</td>
<td>SPSS</td>
<td>Statistics department, SXC</td>
</tr>
<tr>
<td>6.</td>
<td>Goal programming</td>
<td>Prof. S.V George</td>
</tr>
<tr>
<td>7.</td>
<td>Integer programming</td>
<td>Prof. Pooja Ochaney</td>
</tr>
<tr>
<td>8.</td>
<td>Markov analysis</td>
<td>Prof. Piyali Unnikrishnan</td>
</tr>
<tr>
<td>9.</td>
<td>Queueing Theory</td>
<td>Prof. S. Annapurna</td>
</tr>
<tr>
<td>10.</td>
<td>A Beginners course in JAVA programming</td>
<td>Prof. Ashok Bindi</td>
</tr>
<tr>
<td>11.</td>
<td>Simulation</td>
<td>Prof. Felix Almeida</td>
</tr>
<tr>
<td>12.</td>
<td>PERT-CPM</td>
<td>Prof. J.B Mistry</td>
</tr>
<tr>
<td>13.</td>
<td>Individual projects</td>
<td>Prof. Myrtle Fernandes &amp; Prof. S. Annapurna</td>
</tr>
</tbody>
</table>

In addition please refer to pt. 31 above

37. State whether the programme/ department is accredited/ graded by other agencies. Give details.: NIL

38. Detail any five Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department

|          | 1. Highly motivated staff.  
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengths</td>
<td>2. Academically strong teaching faculty.</td>
</tr>
<tr>
<td></td>
<td>3. Enthusiastic set of students.</td>
</tr>
<tr>
<td>Weaknesses</td>
<td>Not ventured into publishing</td>
</tr>
<tr>
<td>Opportunities</td>
<td>1. Teaching at M.Sc / M.B.A. / B.M.S classes.</td>
</tr>
<tr>
<td></td>
<td>2. Extending help for Data Analysis and teaching of statistical software.</td>
</tr>
<tr>
<td>Challenges.</td>
<td>1. Large class strength – To reach out to each student.</td>
</tr>
<tr>
<td></td>
<td>2. To motivate student interest in the subject and encourage them to go beyond the syllabus.</td>
</tr>
</tbody>
</table>
39. Future plans of the department.
1. To increase and enhance our Add-on courses.
2. To introduce a compulsory data collection and analysis, which will start in semester one and end in semester four.
3. To increase student exposure to industry by inviting experts from various fields to give guest lectures of the application of Statistics to the real world.
4. To provide opportunities of hands on experience to students in the subject.

Department of Zoology

1. Name of the Department & its year of establishment:
   DEPARTMENT OF ZOOLOGY, Established in the Year 1970

2. Names of Programmes / Courses offered:
   - B.Sc. with 3 units (Zoology- Biochemistry and Zoology – Botany)
   - Ph.D.in Zoology,
   - M.Sc. IBE (a joint venture between St. Xavier’s College Society and University of Bath).
   - Diploma in Forensic Science,
   - Certificate course in Criminal law and Jurisprudence ,
   - Certificate course in Cyber Forensic and Criminal Investigation,

3. Interdisciplinary courses and departments.
   - Honours program (Open to Botany, Microbiology and Life Sciences)
   - CUBE (Collaborative Undergraduate Biological Education)
   - Cross Faculty Programme on “Secret lives of animals” (offered to students of S.Y.B.A., S.Y.B.M.M, S.Y.B.M.S.)
   - Applied component course in “Economic Entomology” (offered to T.Y.B.Sc. students of Life Science, Botany and Microbiology)
   - Diploma in Forensic Science (offered to any stream of Science and students from Sociology, Psychology, Law and Medicine)
   - Certificate course in Criminal law and Jurisprudence (offered to anyone interested)
   - Certificate course in Cyber Forensic and Criminal Investigation (offered to students with basic computer knowledge)

4. Annual/ semester/choice based credit system:
   - The department follows a choice-based credit system with two semesters in a year for a three year graduation programme.
   - Inter departmental choices in the S.Y. and T.Y.B.Sc levels between Botany/Chemistry/Bio-Chemistry.
   - Interdisciplinary choice for the T.Y.B.Sc. Applied Component.
   - Cross faculty Special course.
   - Course in Scientific Communication skills.
5. Participation of the department in the courses offered by other departments.

Students
- Students of the S.Y.B.Sc. Zoology have to take a Cross Faculty course offered by the Arts departments.
- Students of T.Y.B.Sc have the freedom to choose an applied component course offered by either Chemistry or Life Sciences departments.

Faculty
- Staff from the department were resource persons for the M.Sc. Biotechnology course from 2007-2009.
- Staff members of the department are also part time faculty for the M.Sc. IBE course from 2009 to date.

6. Number of teaching posts sanctioned and filled (Professors/Associate Professors/Asst. Professors)

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Associate Professors</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

7. Faculty profile with name, qualification, designation, specialisation (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 in the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dr. C.Vaman Rao</td>
<td>Ph.D</td>
<td>Associate Professor</td>
<td>Bio-Chemistry</td>
<td>26 (retd in 2009)</td>
<td>1</td>
</tr>
<tr>
<td>Dr. Smita Krishnan</td>
<td>Ph.D</td>
<td>Associate Professor</td>
<td>Marine Zoology</td>
<td>22</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Pushpa Sinkar</td>
<td>PhD, B.Ed.</td>
<td>Assistant Professor</td>
<td>Marine Zoology</td>
<td>19</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Madhuri Hambarde</td>
<td>Ph.D</td>
<td>Associate Professor</td>
<td>Endocrinology</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>Conrad Cabral</td>
<td>M.Sc.</td>
<td>Assistant Professor</td>
<td>Molecular Biology</td>
<td>5</td>
<td>Nil</td>
</tr>
<tr>
<td>Dr. Sujata Deshpande</td>
<td>Ph.D</td>
<td>Assistant Professor</td>
<td>Biological Sciences</td>
<td>1</td>
<td>Nil</td>
</tr>
</tbody>
</table>

8. Percentage of classes taken by temporary faculty – programme-wise information
- Undergraduate programme in Zoology (3 units) – 0%
- Diploma in Forensic Science – 100%
- Certificate course in Criminal law and Jurisprudence – 100%
- Certificate course in Cyber Forensic and Criminal Investigation – 100%
• M.Sc. IBE – 60%

9. Programme-wise Student Teacher Ratio

<table>
<thead>
<tr>
<th>Class</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate programme in Zoology (3 units)</td>
<td>20:1</td>
</tr>
<tr>
<td>Diploma in Forensic Science</td>
<td>15:1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Class</th>
<th>Sanctioned</th>
<th>Filled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Lab Assistant</td>
<td>1(part time)</td>
<td>1 (part time)</td>
</tr>
<tr>
<td>Technical Lab Attendant</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Administrative staff</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Certificate course in Criminal law and Jurisprudence</td>
<td>15:1</td>
<td></td>
</tr>
<tr>
<td>Certificate course in Cyber Forensic and Criminal Investigation</td>
<td>20:1</td>
<td></td>
</tr>
<tr>
<td>M.Sc. IBE</td>
<td>10:1</td>
<td></td>
</tr>
</tbody>
</table>

10. Number of academic support staff (technical) and administrative staff: sanctioned and filled: Part time Laboratory Assistant

11. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Mention names of funding agencies and grants received project-wise.

   International funding agency
   • UKIERI – £ 14,000 (2009-2012) for M.Sc. IBE

12. Departmental projects funded by DST-FIST; DBT, ICSSR, etc.; total grants received

<table>
<thead>
<tr>
<th>Name of funding agency</th>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>UGC major</td>
<td>2004-2007</td>
<td>Rs. 4,69,600/-</td>
</tr>
<tr>
<td>University of Mumbai Minor project</td>
<td>2008-09</td>
<td>Rs.30,000/-</td>
</tr>
<tr>
<td>University of Mumbai Minor Project</td>
<td>2009-10</td>
<td>Rs.15,000/-</td>
</tr>
<tr>
<td>Star College</td>
<td>2012-15</td>
<td>Rs.11,00,000/-</td>
</tr>
<tr>
<td>DST-FIST</td>
<td>2012-13</td>
<td>Rs. 2,00,000/-</td>
</tr>
</tbody>
</table>

   Total Grants received – Rs.18,14,600/-

   DST-FIST grant of Rs. 34.20 lakhs for Equipments and Infrastructure facility (2004-07) to Dept. of Biological Sciences (Life Science, Botany, Microbiology and Zoology)

13. Research facility / centre with

   state recognition

   Department of Zoology has a research laboratory with life time recognition for PhD from the University of Mumbai.

   Department of Zoology has recognition for Ph.D. in Zoology from University of Mumbai
• **national recognition**
  Department of Zoology has an Animal house facility registered with the CPCSEA.

• **international recognition**
  NIL

14. **Publications:**
   * number of papers published in peer reviewed journals (national / international)
   * STAFF

• **STUDENTS**

* Monographs -NIL
* Chapter(s) in Books - NIL
* Editing Books - NIL
* Books with ISBN numbers with details of publishers - NIL
* Number listed in International Database (For e.g. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.) - NIL
* Citation Index – range / average - NIL
* SNIP - NIL
* SJR - NIL
* Impact factor – range / average
* h-index

15. **Details of patents and income generated**
   NIL
16. **Areas of consultancy and income generated**

NIL

17. **Faculty recharging strategies**

a) Seminars/Workshops/Conferences attended by faulty

- Dr. Madhuri Hambarde attended an International symposium on MIF in health and disease at Piramal Life Sciences from 1\textsuperscript{st} – 2\textsuperscript{nd} November 2012.
- Conrad Cabral attended a workshop in “Classical Genetics and Molecular Genetics” at Banares Hindu University from 22\textsuperscript{nd} to 24\textsuperscript{th} January 2012.
- Dr. Madhuri Hambarde attended a 14 Day workshop on Animal Tissue Culture conducted by Medicine and Biomedicine and National Centre for Cell Science held at National Centre for Cell Science from 16\textsuperscript{th} to 28\textsuperscript{th} June 2008.
- Dr. Madhuri Hambarde attended a three day workshop on “Basics of Bioinformatics and its application” at Biomedical informatics Centre, NIRRH from 5\textsuperscript{th} to 7\textsuperscript{th} June 2012.
- Conrad Cabral participated in a workshop on “Bioinformatics: Emerging tool in Biological Sciences” at Ruia College from Feb 1\textsuperscript{st} to 5\textsuperscript{th} 2010.
- Conrad Cabral participated in hands on workshop in “Applied Genetics and Genetic Counselling” at CREMERE Malad (Mumbai) from Sept 5\textsuperscript{th} to 8\textsuperscript{th} 2007.
- Dr. Smita Krishnan and Dr. Pushpa Sinkar attended the IATBS 1st convention 2006 - Recent trends in Biological Sciences on Feb 11\textsuperscript{th} 2006 at the Homi Bhaba Centre for Science Education.
- Dr. Smita Krishnan, Dr. Pushpa Sinkar and Dr. Madhuri Hambarde attended a National Seminar on Development of Innovative Strategies and Higher Academics (DISHA) from February 3\textsuperscript{rd} to 5\textsuperscript{th} 2006 at St. Xavier’s College.
- Mr. Conrad Cabral attended a conference “Modern trends in Science” at IISER, Pune organized on 3\textsuperscript{rd} and 4\textsuperscript{th} September 2008.
- Dr. Pushpa Sinkar attended the IATBS National Workshop on Methods of Instrumental Analysis for Biological Sciences from Nov 2\textsuperscript{nd} to 4\textsuperscript{th}, 2006 at Jhunjhunwala College.
- Dr. Pushpa Sinkar attended a Workshop on Wonderful World of Insects on 26\textsuperscript{th} August 2008 at Bandodkar College, Thane.
- Dr. Smita Krishnan attended a Workshop on Wonderful World of Insects on 16\textsuperscript{th} January, 2008 at Bandodkar College, Thane.

b) **Refresher course**

- Dr. Pushpa Sinkar participated in a Refresher Course in Biotechnology at Khalsa College from Oct 1\textsuperscript{st} to 22\textsuperscript{nd} 2008.
- Dr. Pushpa Sinkar participated in a Refresher Course in Biosciences at Mithibai College from Oct 11\textsuperscript{th} to 30\textsuperscript{th} 2010.

c) **Faculty as resource persons**

- Dr. Madhuri Hambarde was a member of the organizing committee for Lecture workshop on techniques in animal tissue culture and gas chromatography conducted by CIF and Dept. of Life Science, St.Xavier’s College from 16\textsuperscript{th} to 18\textsuperscript{th} June 2011.
Dr. Madhuri Hambarde was a resource person for a seminar on Alternatives in Continuous Internal Assessment organized by St. Xavier’s College on Nov 20th 2009.

Dr. Madhuri Hambarde is a reviewer for 4 Journals namely: Journal of Food Biochemistry, Natural Product Radiance and Food and Chemical Toxicology and Saudi Journal of Gastroenterology.

Conrad Cabral was one of the resource persons for the various workshops on “Moodle” conducted for the staff of St. Xavier’s College Mumbai in 2010.

Conrad Cabral is a visiting faculty for a diploma course in “Bioinformatics” at Sophia College, Mumbai. From 2008 till date.

Conrad Cabral was invited for a guest lecture in “Intracellular Trafficking: Microtubules the cellular tracks” for the Second and Third year students and “Molecular Phylogeny” for the Post graduate students of H.P.T. / R.Y.K. college, Nashik on 13th December 2011.

Conrad Cabral was invited for a guest lecture in “Tips on Immunology” to aid clear the NET exam at Vaze-Kelkar College, Mumbai on the 14th September 2011.

Conrad Cabral was a resource person for a half day orientation for the Non-teaching staff of St. Xavier’s College.

d) Faculty exchange programs with foreign Universities

Dr. Madhuri Hambarde as co-ordinator of M.Sc. IBE was deputed to participate in the UKEIRI sponsored program for the M.Sc. IBE syllabus development from 28th February to 7th March 2009.

Dr. Madhuri Hambarde as co-ordinator of M.Sc. IBE was deputed to participate in the UKEIRI sponsored program for the M.Sc. IBE progress meeting from 5th – 13th March 2010.

Dr. Madhuri Hambarde as co-ordinator of M.Sc. IBE was deputed to participate in the UKEIRI sponsored program for the MSc IBE course development review meeting from 12th – 21st December 2010.

Dr. Pushpa Sinkar and Dr. Smita Krishnan were deputed by St. Xaviers College to visit the University of Bath, UK from 6th – 15th May 2011.

e) Seminars organized by St. Xaviers College for faculty

Dr. Smita Krishnan, Dr. Pushpa Sinkar, Dr. Madhuri Hambarde and Conrad Cabral attended all Wednesday staff seminars held in college during 2009-2011.

Dr. Smita Krishnan, Dr. Madhuri Hambarde and Conrad Cabral attended the faculty seminar held in Khandala in September 2012.

18. Student Projects

percentage of students who have done in-house projects including interdepartmental
2006-2009 = during these years about 20% of the students did year long research projects under the Honours program.
2009-2012 = during these years 100% of the students had to do projects as part of their curriculum in the Applied Component.

percentage of students doing projects in collaboration with industries / institutes
Ms. Pearl Prabal completed a 3 week internship at the University of Bath in
May 2012.


- Ms. Abigail Pais has completed her summer internship at HBCSE through the CUBE program from April to May 2012.

- Ms. Sharon Maria Jacob completed her summer internship at Holy Spirit Hospital, Andheri from April to May 2012.

- Ms. Janice Vaz completed her summer internship at Dr. Gadge’s Veterinary clinic from March to June 2012.

- Ms. Priyanka Pereira completed her summer internship at Nova Medical Centre, Deonar, from April to May 2012.

- Ms. Shirley Dias completed her internship at Dr. Asha Makde’s Pet Clinic for the month of May 2012.

- Mr. Hussain Shaikh completed his summer internship in the Pathology Laboratory at Bombay Hospital from March to June 2011.

- Mr. Hussain Shaikh attended a week long workshop on Animal handling and Maintenance at Haffkine Institute in December 2011.

19. **Awards / recognitions received at the national and international level by Faculty**

- Dr. Smita Krishnan has been appointed as Chairman, Board of Studies in Applied Component (Entomology) for T.Y.B.Sc. by the University of Mumbai.

- Dr. Smita Krishnan is the Chairman for IAEC for St. Xavier’s College.

- Dr. Madhuri Hambarde has been appointed as member of Syllabus Committee for M.Sc. Part I by the University of Mumbai.

- Dr. Madhuri Hambarde is a recognized PhD guide in Zoology at the University of Mumbai.

- Dr. Madhuri Hambarde is the Secretary for IAEC for St. Xavier’s College.

- Dr. Pushpa Sinkar has been appointed as Chairman, Board of Studies for Zoology at S.N.D.T. University.

- Dr. Pushpa Sinkar has been appointed as Co-convener of Syllabus Committee for T.Y.B.Sc. by the University of Mumbai.

- Conrad Cabral has been appointed as member of Syllabus Committee for T.Y.B.Sc. by the University of Mumbai.

- Doctoral / post doctoral fellows

- Ms. Norine D’souza is presently a doctoral fellow at the department.

- **Students**

- Ms. Smruti Deoghare from S.Y.B.Sc. was selected for the student exchange program to Berkeley University, California, U.S.A. in the year 2009.

- Rohit Jha and Rishiddh Jhave from S.Y.B.Sc were awarded First prize in the Quiz Competition at the inter-collegiate festival “Ozone Fest 2009” held at Institute of Science, Mumbai.
• Ms. Shruti Jadhav and Jeneshmary Nadar from S.Y.B.Sc. secured Second position in powerpoint presentation on “Environmental Adaptations” at the inter-collegiate festival at Ratnam College, Bhandup, in 2009.
• GANGGREEN - Nature Club members (students from Zoology and Botany departments) won the First prize and Best Speaker Award for, Methodology Used in Biodiversity Studies, in a competition organized by National College, Mumbai. in 2009.
• Ms. Payal Gupta won the First prize for presenting a poster Nature Vs Nurture at the Inter-collegiate event ENTERNO organized by SIES College, Nerul, Mumbai, in 2010.
• Ms. Payal Gupta won the Consolation Prize and a Certificate Of Merit in an Essay Writing Competition held by University Of Mumbai, in 2011. The topic for essay was Should There Be Positive Discrimination in Higher Education.
• Ms. Payal Gupta won the State Merit Scholarship awarded by University Of Mumbai, in 2009.
• Ms. Payal Gupta won the Fifth prize in Treasure Hunt at the Inter-collegiate event CHEMEXTREME organized by St. Xavier’s College, Mumbai in 2011.
• Ms. Payal Gupta won the Third prize in a Quiz at the Inter-collegiate event CHEMEXTREME organized by St. Xavier’s College, Mumbai in 2012.
• Mr. Faisal Khan and Mr. Clinton D’Silva won the First prize in Treasure Hunt at the Inter-collegiate event ENTERNO organized by SIES College, Nerul, Mumbai in 2011.
• Mr. Faisal Khan and Mr. Clinton D’Silva won the Third prize in Floral Rangoli at the Inter-collegiate event ENTERNO organized by SIES College, Nerul, Mumbai in 2011.
• Mr. Faisal Khan and Mr. Clinton D’Silva won the First prize in Treasure Hunt at the Inter-collegiate event CONVERGENCE organized by K.J. Somaiya College, Vidyavihar, Mumbai in 2011.
• Mr. Faisal Khan won the Best Actor Award at the Inter-collegiate event KIRAN organized by K.C. College, Churchgate, Mumbai in 2011.
• Mr. Faisal Khan won the First prize in Bollywood Quiz at the Inter-collegiate event FANTASIES organized by SIES College, Sion, Mumbai in 2012.
• Mr. Faisal Khan won a prize in House in Housie at the Inter-collegiate event CONVERGENCE organized by K.J. Somaiya College, Vidyavihar, Mumbai in 2011.
• Mr. Snobbin Jacob, Mr. Orville Nazareth, Mr. Nikit Surve and Ms. Pallavi Ghaskadbi won the First prize at the inter-collegiate Festival Kshithij in Water Wars organized by Mithibai College Mumbai in 2012.

20. Seminars/Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.
• The department conducted a Syllabus upgradation workshop in Entomology on behalf of the University of Mumbai in July 2010.
21. Student profile course-wise:

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>Applications received</th>
<th>Selected Male</th>
<th>Female</th>
<th>Pass percentage Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate programme in Zoology (3 units)</td>
<td>225</td>
<td>160</td>
<td></td>
<td>FY: 90</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SY: 90</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>TY: 90</td>
<td></td>
</tr>
<tr>
<td>Diploma in Forensic Science</td>
<td>45</td>
<td>30 overall</td>
<td></td>
<td>100% overall</td>
<td></td>
</tr>
<tr>
<td>Certificate course in Criminal law and Jurisprudence</td>
<td>30</td>
<td>20 overall</td>
<td></td>
<td>100% overall</td>
<td></td>
</tr>
<tr>
<td>Certificate course in Cyber Forensic and Criminal Investigation</td>
<td>30</td>
<td>20 overall</td>
<td></td>
<td>100% overall</td>
<td></td>
</tr>
<tr>
<td>M.Sc. IBE</td>
<td>30</td>
<td>10</td>
<td></td>
<td>100% overall</td>
<td></td>
</tr>
</tbody>
</table>

22. Diversity of students

<table>
<thead>
<tr>
<th>Name of the Course (refer question no. 2)</th>
<th>% of students from the College</th>
<th>% of students from the State</th>
<th>% of students from other States</th>
<th>% of students from other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate program in Zoology (3 units)</td>
<td>40%</td>
<td>50%</td>
<td>10%</td>
<td>NIL</td>
</tr>
<tr>
<td>Diploma in Forensic Science</td>
<td>10%</td>
<td>90%</td>
<td>NIL</td>
<td>NIL</td>
</tr>
<tr>
<td>Certificate course in Criminal law and Jurisprudence</td>
<td>60%</td>
<td>40%</td>
<td>NIL</td>
<td>NIL</td>
</tr>
<tr>
<td>Certificate course in Cyber Forensic and Criminal Investigation</td>
<td>10%</td>
<td>90%</td>
<td>NIL</td>
<td>NIL</td>
</tr>
<tr>
<td>M.Sc. IBE</td>
<td>5%</td>
<td>80%</td>
<td>15%</td>
<td>NIL</td>
</tr>
</tbody>
</table>

23. How many students have cleared Civil Services, Defense Services, NET, SLET, GATE and any other competitive examinations?

NET – 2 Cleared Pune University Entrance Exam in Zoology – 3

24. Student progression

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Percentage against enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td>20%</td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td>----</td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td>5%</td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td>5%</td>
</tr>
<tr>
<td>Employed</td>
<td></td>
</tr>
<tr>
<td>Student progression</td>
<td>Percentage against enrolled</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>• Campus selection</td>
<td></td>
</tr>
<tr>
<td>• Other than campus recruitment</td>
<td>80%</td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td>2%</td>
</tr>
</tbody>
</table>

25. Diversity of staff

<table>
<thead>
<tr>
<th>Percentage of faculty who are graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>of the same parent university</td>
</tr>
<tr>
<td>from other universities within the State</td>
</tr>
<tr>
<td>from other universities from other States</td>
</tr>
</tbody>
</table>

26. Number of faculty who were awarded Ph.D., D.Sc. and D.Litt. during the assessment period: NIL

27. Present details about infrastructural facilities

a) **Library** – The department has a well stocked library of about 1000 books which is open to the students and faculty of the department and other Biological departments. The department also subscribes to 6 research journals. Apart from this students also have access to the two college libraries – the Lending and the Reference library, which are well stocked with books and journals.

b) **Internet facilities** for staff and students – Personal internet facility with each staff member accessible to students. A lease line connection is available in the department for use of faculty.

c) Total number of class rooms: 40 common classrooms

d) Class rooms with ICT facility: All have ICT.

e) Students’ laboratories – 03 (One of which is shared with Botany and Life Science)

f) Research laboratories – 01

28. Number of students of the department getting financial assistance from College:

25 (between 2007-2012)

29. Was any need assessment exercise undertaken before the development of new program(s)? If so, give the methodology. No

30. Does the department obtain feedback from

a. **Faculty on curriculum as well as teaching-learning-evaluation?** If yes, how does the department utilize it? YES

   • Oral feedback from the faculty and students is taken and relevant suggestions are put forward to the BOS for approval.
   • H.O.D conducts a formal “sit-in”, i.e. an unannounced observation of the lecture conducted by unconfirmed teachers. A detailed report is prepared and discussed with the concerned staff member before the report is submitted to the Vice Principal.

b. **Students on staff, curriculum as well as teaching-learning-evaluation and what is the response of the department to the same?** YES
A formal TAQ is conducted by the college to assess the quality of teaching and the results are analyzed and a hard copy of the report followed by a discussion of the analysis is provided to the faculty by the Vice Principal.
Feedback is obtained from the students during Mentoring sessions.
Two student representatives are nominated to the BOS and student feedback regarding the syllabi is conveyed through them to the members of the BOS.

c. **Alumni and employers on the programs and what is the response of the department to the same?**
YES Alumni are part of the BOS and their valuable suggestions are discussed.

31. **List the distinguished alumni of the department (maximum 10)**
- Dr.Rohan Arthur – Director Nature Conservation Foundaion, Mysore.
- Dr. Roshan D’Souza – Vice principal and Head Dept. of Zoology, Sophia College.
- Dr. Aldon Fernandes – Deputy General Manager, R&D, Bharat Serums.
- Mr. James Pereira – President and Director, Pereira Wilcock Solutions Incorporated, Canada
- Mr. Kiran Kapadia- Advocate High Court, Mumbai.
- Mr. Ashish Bhasin- Chairman India and CEO S.E Asia, Aegis India Media Pvt.Ltd.
- Dr. Advait Edgaonkar – Asst Professor, Indian Institute of Forestry Management.
- Dr. Ryan Pereira – Senior Education Advisor, US India Educational Foundation.
- Mr. Charles Assisi – Executive Editor Forbes India and Editor Forbes Life India.
- Dr. Nandita Mangalore – Vice Principal and Head of Life Science and Biochemistry St. Xavier’s College.
- Mr. Hans Athaide- Regional Development & Regulatory Manager, Asia Pacific, BASF, Singapore.
- Dr. Pushpa Sinkar – Assistant Professor Dept. of Zoology St. Xavier’s College
- Dr. Samit Chakrabarty – Lecturer in Neurrosciences, School of Biomedical Sciences University of Leeds, UK.

32. **Give details of student enrichment programs (special lectures / workshops / seminar) with external experts.**
- “Gene Necklace” a lecture and practical hands on workshop on DNA isolation was conducted by Dr. Moumna Hejmadi From University of Bath
- A lecture on “Large Carnivore Research and Conservation” was conducted by Dr. Yadavendra Jhalla from WII, on 30th June 2012.
- A lecture on “Conservation and Snakes” was conducted by Dr. Leon Pereira, on 27th August, 2012.
- A workshop for the honours students on “Orthinology and Herpetology” was conducted by Dr. Leon Pereira in 2009-10 and 2010-11
A lecture on “Conservation of the Jungle fowl” was conducted by Dr. Mervyn Fernandes from WII, on 13th July 2012.

The department undertakes an annual study tour for the TY students to the Rural Sericulture Unit at Wai and the Central Bee Keeping Research Institute at Pune.

The department undertakes an annual study tour for the SY students to the Agricultural University (KKV) at Dapoli.

Besides these the department organizes a 10 day field excursion to various wild life Sanctuaries/National parks. Places visited are


b) October 2008 – Bhitarkanika and Chilka Lake, Orissa.

c) October 2010 – Gulf of Kutch Marine Sanctuary, Gujarat.

d) October 2012 - Corbett National Park, Uttaranchal

33. List the teaching methods adopted by the faculty for different programs.
   - Power point presentations and Multi media
   - Movies
   - Chalk and Talk
   - Quiz
   - Use of Models
   - Case studies
   - Experimental demonstration
   - Field Trips
   - Learning through Projects and Internships

34. How does the department ensure that program objectives are constantly met and learning outcomes monitored?
   - Monthly departmental meetings and discussions

35. Highlight the participation of students and faculty in extension activities
   - Students from the department are actively involved in the annual Beach cleanup organized by WWF India.
   - Some students participate in the Rural camp organized by SSL at Talasari
   - All first year students have a mandatory 2 credit Social Involvement Programme.

36. Give details of “beyond syllabus scholarly activities” of the department.
   - Students participated in the Science Exhibition of the college during the intercollegiate Science exhibition ‘Paradigm’ in December 2012
   - Students participated in a Departmental Exhibition to commemorate 140 years of St. Xavier’s College.

37. State whether the program/ department is accredited/ graded by other agencies. Give details.
   No

38. Detail any five Strengths, Weaknesses, Opportunities and Challenges
(SWOC) of the department.

**Strengths:**
- Good repository of insects and bones
- Department runs several part time courses
- Relevant and up to date library
- Multimedia enabled labs (Sound and LCD projector)
- Ph.D. lab with life time recognition
- Four out of five staff members hold Doctorates
- Dedicated, enthusiastic and committed staff members
- Freedom to voice one’s opinion both for staff and students
- Extremely devoted and loyal non teaching staff

**Weaknesses:**
- Lack of sufficient publications
- No Post Graduate Programme
- No industrial tie up or consultancies

**Opportunities:**
- Freedom to design relevant syllabi with autonomy
- Encourage students towards internships during their summer vacations
- Improved infrastructure with increased grants
- Freedom to evaluate students using a variety of evaluation methods

**Challenges:**
- To encourage students to pursue basic science
- Increasing the department involvement in extension activities
- Majority of the students who enroll, do not do so by choice, our challenge is to capture their interest and motivate them to pursue further studies in Zoology

39. **Future plans of the department.**
- Promoting research and publishing papers
- Working towards starting a Post Graduate programme
- Continue encouraging student participation in inter-collegiate activities
- Continue sending non teaching staff for workshops in skill enhancement
- Working with our students to continue enhancing the core values of our department of Harmony with the Environment, striving towards academic excellence and personal integrity.
- Adopt a rural institution and sensitize our students by taking them to rural areas and experiencing the rural life style
- Getting experts from the industry to disseminate current quality standards required by the industry to the students.
- Starting a Department Magazine featuring articles by students

***************