



The Institute of Science, Mumbai

**Annual Quality Assurance Report
2015-2016**

The Annual Quality Assurance Report (AQAR) of the IQAC Academic year 2015-2016

Part – A

AQAR for the year : 2015-2016

1. Details of the Institution

1.1 Name of the Institution The Institute of Science, Mumbai

1.2 Address Line 1 15 Madam Cama

Address Line 2 Fort

City/Town Mumbai

State Maharashtra

Pin Code 400032

Institution e-mail address iscmdirector@gmail.com

Contact Nos. 022-22047962, 022-22816750, 022-22829293

Name of the Head of the Institution: Prof. A. S. Khemnar

Tel. No. with STD Code: 022-22816750

Mobile: 09850924991

Name of the IQAC Co-ordinator: Prof. Ajay Chaudhari

Mobile: 9421869109

IQAC e-mail address: iqac.iscmumbai@gmail.com

1.3 NAAC Track ID MHCOGN10212

1.4 NAAC Executive Committee No. & Date: EC(SC)/01/RAR/07/dated 05/05/2014

(For Example EC/32/A&A/143 dated 3-5-2004. This EC no. is available in the right corner- bottom of your institution's Accreditation Certificate)

1.5 Website address:

<http://iscmumbai.org.in>

Web-link of the AQAR:

<http://iscmumbai.org.in/page/3>
AQAR-2015-2016

1.6 Accreditation Details

Sr. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1 st Cycle	B ⁺⁺	81	2003	---
2	2 nd Cycle	A	3.05	2014	May 2019

1.7 Date of Establishment of IQAC :

01/06/2004

1.8 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC ((for example AQAR 2010-11 submitted to NAAC on 12-10-2011))

AQAR 2014-2015 submitted on 18-10- 2015

1.9 Institutional Status

University State Central Deemed Private

Affiliated College Yes No

Constituent College Yes No

Autonomous college of UGC Yes No

Regulatory Agency approved Institution Yes No

(eg. AICTE, BCI, MCI, PCI, NCI)

Type of Institution Co-education Men Women

Urban Rural Tribal

Financial Status Grant-in-aid UGC 2(f) UGC 12B

Grant-in-aid + Self Financing Totally Self-financing

1.10 Type of Faculty/Programme

Arts Science Commerce Law PEI (Phys Edu)
TEI (Edu) Engineering Health Science Management
Others (Specify)

1.11 Name of the Affiliating University (*for the Colleges*)

University of Mumbai

1.12 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc

Autonomy by State/Central Govt. / University	<input type="text" value="No"/>		
University with Potential for Excellence	<input type="text" value="NA"/>	UGC-CPE	<input type="text" value="Yes"/>
DST Star Scheme	<input type="text" value="NA"/>	UGC-CE	<input type="text" value="No"/>
UGC-Special Assistance Programme	<input type="text" value="NO"/>	DST-FIST	<input type="text" value="Yes"/>
UGC-Innovative PG programmes	<input type="text" value="No"/>	Any other (<i>Specify</i>)	<input type="text" value="--"/>
UGC-COP Programmes	<input 115="" 596="" 909="" 927"="" data-label="Page-Footer" type="text" value="---</td><td></td><td></td></tr></table></div><div data-bbox="/> <p>AQAR of IQAC for 2015-2016 The Institute of Science, Mumbai.</p>		

2. IQAC Composition and Activities

2.1 No. of Teachers	<input type="text" value="10"/>
2.2 No. of Administrative/Technical staff	<input type="text" value="02"/>
2.3 No. of students	<input type="text" value="02"/>
2.4 No. of Management representatives	<input type="text" value="01"/>
2.5 No. of Alumni	<input type="text" value="01"/>
2.6 No. of any other stakeholder and community representatives	<input type="text" value="01"/>
2.7 No. of Employers/ Industrialists	<input type="text" value="00"/>
2.8 No. of other External Experts	<input type="text" value="01"/>
2.9 Total No. of members	<input type="text" value="17"/>
2.10 No. of IQAC meetings held	<input type="text" value="04"/>
2.11 No. of meetings with various stakeholders:	<input type="text" value="03"/> No. <input type="text" value="02"/> Faculty
	Non-Teaching Staff <input type="text" value="01"/> Students <input type="text" value="01"/> Alumni <input type="text" value="--"/> Others <input type="text" value="--"/>
2.12 Has IQAC received any funding from UGC during the year?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
If yes, mention the amount	<input type="text" value="Rs. 2,70,000/- for the period 2015-2020"/>
2.13 Seminars and Conferences (only quality related)	
(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC	
Total Nos.	<input type="text" value="0"/> International <input type="text" value="0"/> National <input type="text" value="0"/> State <input type="text" value="0"/> Institution Level <input type="text" value="1"/>
(ii) Themes	<input type="text" value="Art of thesis writing and poster presentation"/>

2.14 Significant Activities and contributions made by IQAC

- Encouraged faculty for increased use of ICT in teaching and learning process, participate in National and International conferences and submit major and minor research projects to various funding agencies. Several minor and major research proposals have been submitted for the financial support to various funding agencies by the faculty.
- National Science Day was celebrated in Feb. 2016. Guest lectures, quiz for high school students and demonstrations were arranged.
- Invited talks were arranged throughout the year by different departments.
- NET/SET guidance workshop was organised
- Programmes and activities likes Annual Sports day, Blood donation camp, Annual day celebration, Degree Certificate distribution function for the M.Sc. and Ph.D. students of the Institute as per the guidelines of University of Mumbai, Publication of Annual Magazine of the Institute etc. were organised through various committees viz. Philosophical Association, NSS, Sports committee, Magazine committee.
- Study tour and Industrial visits were organised for the students.
- National level workshops was organised
- Popular science lecture series was started on different subjects for the benefit of students.
- Organised BIONICS FEST

2.15 Plan of Action by IQAC/Outcome

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year

Academic Calendar is attached as Annexure I

Plan of Action	Achievements
<p>1. To create-</p> <ul style="list-style-type: none"> • Media room facility and additional research laboratory with modern facilities in the Dept. of Botany. • Additional inoculation room in the department of Microbiology. • A smart classroom in mathematics. 	<p>Media Room is created by installing total of new 12 computers and 04 new printers for the utility of the M.Sc. and Ph.D. students. Students are using these facilities for project related work, seminars and to get recent and advanced information related to their topic of academic and research interest.</p> <p>Under consideration of PWD Dept., Govt. of Maharashtra</p> <p>A proposal for smart class rooms is submitted to DPDC.</p>

<p>2. To submit proposals to—</p> <ul style="list-style-type: none"> • MoEF for financial assistance to develop the botanical garden. • UGC, DBT etc for research assistance. • UGC for - <ul style="list-style-type: none"> ▪ Organising seminars/Conferences. ▪ Implementing earn while you learn scheme. ▪ Remedial coaching. ▪ Establishing NET/SLET guidance cell. • University of Mumbai- to increase M.Sc. seats in Zoology and Ph.D. seats in Microbiology. <p>3. To increase the number of research publications.</p> <p>4. To start collaborative research projects in Physics and Microbiology.</p>	<p>Proposal for financial assistance to develop the botanical Garden is submitted to the State Environment Board and awaiting the response.</p> <p>One Major Research Project is submitted in 2015-16 to CSIR from Botany Department. One Major research proposal is submitted by Physics Department to B.R.N.S., Mumbai for financial assistance. Several minor research projects were submitted to UGC and Mumbai University</p> <p>National workshop on “HPTLC and hyphenated HPTLC Technique HPTLC-MS” in collaboration with Anchrom Enterprises was organised on 14th August, 2015. As a tribute to Dr. A.P.J.Abdul Kalam, the Department of Botany organised “Discover Science Lecture Series” and under this programme , 04 guest lectures on useful scientific topics were conducted in the academic session 2015-16. Proposal has been submitted by Chemistry department to UGC for financial assistance to organise National conference. NET/SET guidance workshop for the student of the Institutes was organised.</p> <p>Proposal has been submitted to increase the number of Ph.D. seats in Microbiology to Mumbai University and the committee constituted by Mumbai University visited the Institute. Proposal from the Zoology department is under consideration at University level.</p> <p>Number of research publications is increased in the academic year 2015-2016. Total 195 papers were published by the faculty of the Institute in reputed national and international journals.</p> <p>Collaboration was established by Physics Dept. with the University of Aveiro, Portugal and two joint research papers were published in Int. J. Hydrogen Energy (Impact factor 3.2).</p>
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<p>5. To start an e-journal of The Institute of Science, Mumbai.</p> <p>6. To place M.Sc. /Ph.D. students of various departments for projects/internship in different research institutions and industries.</p> <p>7. To start Ph.D. programme in the subject of Environmental Science.</p> <p>8. To conduct Environmental audit of the campus.</p> <p>9. To start new courses/specializations-</p> <ul style="list-style-type: none"> • M.Phil. course in mathematics. • Specialization in animal physiology in Zoology. • Specialization in material science in Physics. • Short term course on research techniques. • Training course in research methodology and thesis writing. <p>10. To organise lectures of eminent people under various societies of different departments.</p>	<p>Instrumental; analysis carried out in collaboration with IIT Mumbai and NCL Pune by Microbiology dept.</p> <p style="text-align: center;">-----</p> <p>Students from the institute visited different institutes like I.I.T. Mumbai, T.I.F.R., BARC etc. and used the available facilities there for their project/Ph.D. work. M. Sc. Student from EVS dept. completed their research project at JNPT and Common Effluent treatment Plant, Koparkhairane, Navi Mumbai</p> <p>Due to nonavailability of regular teaching faculty we could not start Ph.D. programme in this self financed dept.</p> <p style="text-align: center;">----</p> <p>Several teaching positions in Physics and Mathematics department of the institute are vacant. During 2015-2016 new faculty were expected through MPSC selection. It is expected that they will join in 2016-2017. Due to lack of faculty we could not start these courses and specialization. Mumbai University is not allowing M.Phil programs in any subject to the affiliated colleges. The proposal for starting new specialization-animal physiology in Zoology is under consideration at Mumbai University level.</p> <p>Institute in collaboration with Association of Microbiologist in India unit conducted workshop on Thesis writing and Art of Poster presentation</p> <p>Department of EVS Organized Dr. P. J. Deoras Memorial Lecture on 16th January 2016 in collaboration with SOCLEEN and WTERT-India. Prof. Sanjay Deshmukh, Hon'ble Vice-Chancellor, University of Mumbai has delivered a lecture on the topic "Science based interventions for achieving sustainable rural livelihood</p>
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<p>11. To organise value added programmes like BIONICS and OZONE FEST.</p> <p>12. To undertake renovation of-</p> <ul style="list-style-type: none"> • Maths department. • Biotechnology laboratories. • PTC lab and Inoculation room in botany department. <p>13. To organise botanical excursions, study tours and Industrial visits.</p> <p>14. To organise various co-curricular, extra-curricular and extension activities.</p> <p>15. To establish MoUs with research institutions.</p> <p>16. To send proposal to government to acquire aided status for the departments of Biotechnology and Environmental science.</p>	<p>security". Prof. G.D. Yadav, Vice Chancellor, Institute of Chemical Technology (ICT), Mumbai delivered Prof. B.C. Haldar Memorial Lecture on "Making Excellence A Habit", 20th October, 2015.</p> <p>BIONICS FEST was organised by Biotechnology department in Sept. 2015.</p> <p>Estimates for the renovation have been called from the PWD Department, Govt. of Maharashtra.</p> <p>PTC Lab renovation proposal is submitted to DPDC.</p> <p>Botany department has organised two short and one long excursion in the academic year 2015-2016.</p> <p>Short excursions-1) Karnala Bird Sanctuary and 2) Mahim Nature Park (Oct. 2015). One Long Excursion-Panchmadi Biosphere Reserve, Ghugwa Fossil National Park, Jabalpur, M.P during 16-21 Jan. 2016. Students of MSc Part I and II from EVS department have visited Jim Corbett National Park, Hrishikesh for excursion during 17th -25th January 2016.</p> <p>Various co-curricular, extra-curricular and extension activities were organised through different committees established such as NSS, Sports, Philosophical association etc.</p> <p>-----</p> <p>Proposals to acquire aided status for the unaided departments Biotechnology and Environmental sciences have been submitted to the Govt. of Maharashtra under Cluster University to be established under RUSA</p>
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2.15 Whether the AQAR was placed in statutory body Yes No

Management Syndicate Any other body

Provide the details of the action taken

Part – B

Criterion – I

I. Curricular Aspects

1.1 Details about Academic Programmes

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	08	00	-	-
PG	09	00	02	-
UG	-	-	-	-
PG Diploma	-	-	-	-
Advanced Diploma	-	-	-	-
Diploma	-	-	-	-
Certificate	-	-	-	-
Others	-	-	-	-
Total	17	-	-	-
Interdisciplinary	02	-	02	-
Innovative	-	-	-	-

1.2 (i) Flexibility of the Curriculum: CBCS/Core/Elective option / Open options

(ii) Pattern of programmes:

Pattern	Number of programmes
Semester	09
Trimester	-
Annual	-

Students at M.Sc. II level have a choice to select electives. Four departments viz. Botany, Chemistry, Physics and Zoology have elective options for M.Sc. IInd year students.

1.3 Feedback from stakeholders* Alumni Parents Employers Students
(On all aspects)

Mode of feedback : Online Manual Co-operating schools (for PEI)
(Analysis of the students feedback is attached as Annexure II)

1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

The syllabi are revised by Mumbai University after every five years.

1.5 Any new Department/Centre introduced during the year. If yes, give details.

No

Criterion – II

2. Teaching, Learning and Evaluation

2.1 Total No. of permanent faculty	Total	Asst. Professors	Associate Professors	Professors	Others
	36	23	11	02	CHB-13 Visiting-02

2.2 No. of permanent faculty with Ph.D. 29

2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year	Asst. Professors		Associate Professors		Professors		Others		Total	
	R	V	R	V	R	V	R	V	R	V
	06	12	00	09	00	08	00	00	06	29

2.4 No. of Guest and Visiting faculty and Temporary faculty 04 -- 35

2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended	24	24	01
Presented papers	21	25	01
Resource Persons	02	01	06

2.6 Innovative processes adopted by the institution in Teaching and Learning:

Most of the faculty members make use of ICT for classroom teaching. Traditional blackboard-chalk/OHP teaching methods are also used as and when required. Concept clearing by discussion is always preferred. Help of Audio-Visual aids for teaching, Visits to the scientific institutions and Industrial units, organizing invited talks of eminent personalities in the subjects, organizing excursion to study the flora and fauna of different habitats, use of slides for teaching, models and animal specimen study at different habitat are some of the regular practices of the institute to improve teaching and learning. Surprise tests and students seminars were also conducted. Research assignment, model making and group activity with interactive discussion were also organised.

2.7 Total No. of actual teaching days during this academic year 178 days

2.8 Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions)

Examination/revaluation reforms at institute level cannot be initiated since institute follows the examination pattern of Mumbai University. Mumbai University has a revaluation system and provides photocopy of answer sheets to the students.

2.9 No. of faculty members involved in curriculum restructuring/revision/syllabus development as member of Board of Study/Faculty/Curriculum Development workshop

15	06	06
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2.10 Average percentage of attendance of students

86.37

2.11 Course/Programme wise distribution of pass percentage:

Title of Programme M.Sc.	Total number of students appeared	Division				
		O Grade	A Grade	B grade	C Grade	Pass %
Biochemistry	14	3	5	4	1	92.85
Biotechnology	16	--	10	05	--	93.8
Botany	17	03	09	04	01	100
Chemistry	72	07	36	16	02	84.72
Environmental Science	16	01	09	06	--	100
Mathematics	40	--	--	01	09	25
Microbiology	16	--	10	04	01	93.75
Physics	36	--	16	04	--	55.6
Zoology	18	--	15	02	--	94.4

Total number of students completed Ph.D. and M.Sc.(by research) during 2015-2016

Department	Total number of students completed their Ph.D.	Total number of students completed M.Sc. (By Research)
Biochemistry	--	--
Biotechnology	--	--
Botany	02	---
Chemistry	04	02
Environmental Science	---	---
Mathematics	--	--
Microbiology	--	--
Physics	---	---
Zoology	03	01

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes :

Various committees such as Philosophical association, Sports committees, M.Sc. and Ph.D. admission committee, Academic calendar committee, vigilance committee, NSS unit etc. are constituted to monitor and evaluate the teaching and learning processes. Academic, co-curricular and extracurricular activities are planned at the beginning of the academic year by IQAC. Theory and laboratory timetable of individual department is planned by the departmental committee and monitored by vigilance committee. Ph.D. admission committee takes care of Ph.D. admission within one month after declaration of the result of Ph.D. entrance Test conducted by Mumbai University as per Vice Chancellor directives. Execution of extracurricular activities is done by NSS unit, Philosophical association and sports committee.

2.13 Initiatives undertaken towards faculty development

<i>Faculty / Staff Development Programmes</i>	<i>Number of faculty benefitted</i>
Refresher courses	03
UGC – Faculty Improvement Programme	00
HRD programmes	01
Orientation programmes	01
Faculty exchange programme	00
Staff training conducted by the university	02
Staff training conducted by other institutions	08
Summer / Winter schools, Workshops, etc.	06
Others	05

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	04	02	01	00
Technical Staff	36	36	00	00
Others	05	--		

Criterion – III

3. Research, Consultancy and Extension

3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

- IQAC encouraged the teachers to undertake major/minor research projects sponsored by UGC and other funding agencies
- IQAC encouraged the teachers to present papers in international, national, state level seminars, conferences and workshops.
- IQAC also stimulated the teachers for paper publication in journals, patent filing and book writing.
- IQAC encouraged the faculty to establish collaboration with different national and international institutes.

3.2 Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number	02	06	0	03
Outlay in Rs. Lakhs	24.21	71.45	0	62.00

3.3 Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	01	03	0	06
Outlay in Rs. Lakhs	0.35	4.45	0	27

3.4 Details on research publications

	International	National	Others
Peer Review Journals	184	11	00
Non-Peer Review Journals	00	02	00
e-Journals	00	03	00
Conference proceedings	12	08	02

3.5 Details on Impact factor of publications:

Range Average h-index Nos. in SCOPUS

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant sanctioned	Received
Major projects	2013-2016	CSIR, UGC, BRNS	60.00	40.00
Minor Projects	----	----	----	----
Interdisciplinary Projects	----	----	----	----
Industry sponsored	----	----	----	----
Projects sponsored by the University/ College	2015-2016	Mumbai Univ.	0.35	0.35
Students research projects (other than compulsory by the University)	----	----	----	----
Any other(Specify)	2013-2018	DST-FIST	213 Lakh	175 Lakh
Total			273.35 lakh	215.35 lakh

3.7 No. of books published i) With ISBN No. Chapters in Edited Books

ii) Without ISBN No.

3.8 No. of University Departments receiving funds from

UGC-SAP CAS DST-FIST
DPE DBT Scheme/funds

3.9 For colleges Autonomy CPE DBT Star Scheme
INSPIRE CE Any Other

3.10 Revenue generated through consultancy

3.11 No. of conferences organized by the Institution.

Level	International	National	State	University	College
Number	00	00	00	00	01
Sponsoring agencies	00	00	00	00	00

3.12 No. of faculty served as experts, chairpersons or resource persons

3.13 No. of collaborations International National Any other

3.14 No. of linkages created during this year

3.15 Total budget for research for current year in lakhs :

From Funding agency From Management of University/College DPDC
 Total

3.16 No. of patents received this year

Type of Patent		Number
National	Applied	01
	Granted	00
International	Applied	00
	Granted	00
Commercialised	Applied	00
	Granted	00

3.17 No. of research awards/ recognitions received by faculty and research fellows Of the institute in the year

Total	International	National	State	University	Dist	College
12	01	05	00	02	02	02

3.18 No. of faculty from the Institution who are Ph. D. Guides

and students registered under them

3.19 No. of Ph.D. awarded by faculty from the Institution

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF SRF Project Fellows Any other

3.21 No. of students Participated in NSS events:

University level State level

National level International level

3.22 No. of students participated in NCC events:

University level State level

National level International level

3.23 No. of Awards won in NSS:

University level	00	State level	00
National level	00	International level	00

3.24 No. of Awards won in NCC:

University level	00	State level	00
National level	00	International level	00

3.25 No. of Extension activities organized

University forum	02	College forum	07		
NCC	---	NSS	04	Any other	01

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

The NSS unit enrolled 50 student volunteers. Various programmes and activities were conducted. Nearly 40 students from different departments completed the student training on Entrepreneurship Development Programme under the initiative by Rajiv Gandhi National Institute of Youth Development (RGNIYD), Govt. of India and ICT Academy of Tamil Nadu. The training was given by NSS PO Dr. Bhavita Chavan in the month of August, 2015 for 10 days completing 40 hours with online examination at the end of the programme. Regular activities included notebook making, paper bags from unused newspaper, posters on safety, swatch bhara abhiyaan. Even days NSS residential camp was conducted from 25th January to 31st January, 2016 at Ganeshpuri, Thane. NSS volunteers enjoyed working in the adopted village Dhodadepada, school education and children was the theme for this year's activity. Various sessions were organised like "Andhashraddha Nirmulan" by Shri. Rajendra Koli, Warli painting by Shri. Kishor Ganeshkar, Street play performance by Shri. Sachin Patil, Astronomy and Night Sky observation by our own student Mr. Kunal Borase, M.Sc. I Physics, Power of Mind by Mrs. M. Kulkarni, Career in Administration by Dr. Kishor Bhoir, one of the trustees of Bhimeshwar Nityananda Sanstha, Ganeshpuri, Gandhian thoughts by Mr. Avinash Rokade wherein the volunteers were given books on Gandhiji, followed by Gandhi exam and certificates given by Sarvodaya Mandal.

Prof. (Dr.) G. D. Yadav, Vice Chancellor, Institute of Chemical Technology (ICT), Mumbai delivered Prof. B. C. Haldar Memorial Lecture on "Making Excellence A Habit", 20th October, 2015.

Financial assistance was provided to Ph.D. student (Physics) Mr. Pravin Tirmali for poster presentation in International Conference, M.Sc. I EVS students Mr. Sagar Mane, Miss. Samjukta Mokashi and Miss. Sneha Gunjal for participation in conference.

Financial assistance was provided to the teaching staff Dr. R. B. Kale, Head, Dept. of Physics for participation in International conference.

Financial assistance was provided to Department of Chemistry for conducting three days NET / SET Workshop for Chemistry students in the institute.

Criterion – IV

4. Infrastructure and Learning Resources

4.1 Details of Increase in infrastructure facilities

Facilities	Existing	Newly created	Source of Fund	Total Cost (Rs.)
Campus area	14896.44 sq meters	-----	-----	-----
Class rooms	19	-----	-----	
Laboratories	38	-----	-----	
Seminar Halls	01	-----	-----	
No. of important equipments purchased (\geq 1-0 lakh) during the current year		19	DPDC grant	1,36,02,403
		19	Total	1,36,02,403
Other instruments		205	DPDC	65,53,597
		84	State plan	12,41,500
		289	Total	77,95,097
Others (biometric machine)		01	State plan	18,500
Computers & printers		35	DPDC	10,71,530

4.2 Computerization of administration and library

- Connectivity of administration and all departments through optical fibre.
- Most of the office work in institute office is done using computers.
- Creating individual login ids for all staff and students for internet access.
- Presently 6 Computers are used for library administration and library services.
- Two computers and one printer were purchased for the library in 2015-2016.
- Internet facility is available on all PC used for administration and library.
- e-journals and e-books can be accessed through UGC-INFLIBNET service in the library as well as on any PC in the institute.

4.3 Library services

Library	Existing		Newly added		Total	
	No.	Value In Rs.	No.	Value in Rs.	No.	Value in Rs.
Text Books	26665	1318834/-	414	12,20, 027	Total 27079	2,538861
Reference Books	465	Rs 790109	-----		465	
e-Books	7500	Through subscription to infilibnet	-----		7500	
Journals	23000	Rs. 3142618/-	-----	----- E –journals are used.	23000	-----
e-Journals	3000	Rs 700000/- subscription through infilibnet continued from 2012-13	-----	-----		
Digital database	01	Rs. 355000 available from 2013-2014	-----	-----		

In addition to these, useful reference books are added to the collection of Mathematics books through the scheme of NBHM initiated by department. In this scheme books are received directly from publishers freely through assistance of National board of Higher Mathematics.

4.4 Technology Upgradation (overall)

The institute has got 100 MBPs connectivity through the national knowledge Network.

	Total computer	Computer lab	Internet	Browsing centre	Corporate centre	office	Departments
Existing	185	05	Available	13	13	25	160
Added	8	Nil	-----	Nil	Nil	0	8
Total	193	05	Available	13	13 same	25	168

4.5 Computer Internet access training to teachers and students and any other program for technology upgradation:

All teaching staff is adept in use of internet and use of computers.

Most of the office work in different sections like establishment, finance etc.of the institute administration is done using computers.

Initiatives have been taken to make the admission process online.

Information is usually exchanged electronically.

Initiatives have also been taken to make the campus Wi-Fi. The Institute has been allotted funds of Rs twenty five lakhs by DPDC Mumbai for wireless connectivity.

The administrative staff is well adept in using technology and the budget, pay bills etc. are generated using computers.

4.6 Amount spent on maintenance in Lakhs of Rs.

i) ICT	Rs. 1,20,000
ii) Campus Infrastructure and facilities	Rs. 60,40,701
iii) Equipment	Rs. 00.00
(iv) Others(EPBS)	Rs 2,70,000
Total	Rs. 64,30,701

Criterion – V

5. Student Support and Progression

5.1 Contribution of IQAC in enhancing awareness about Student Support Services

IQAC through academic, administrative and library staff makes the provision of students support in following ways.

- Institute has student centric support systems like earn and learn for economically backward students.
- Display of notices regarding various scholarships and free-ships.
- Career guidance and counseling.
- Motivate students to participate in various sports and competitive examinations..
- Guidance and training to students for on and off campus recruitment
- Special attention towards the slow learners.
- NET/SET guidance workshop organisation

5.2 Efforts made by the institution for tracking the progression

The institution monitors and ensures the achievements of the learning outcome through analysis of the tests, examination results and the pass percentage. The Alumni association of our Institute is very active. They are in touch with students who have passed out from the Institute.

5.3 (a) Total Number of students

UG	PG	Ph. D.	Others
-	513	33	12

(b) No. of students outside the state

06

(c) No. of international students

Nil

Men	No	%	Women	No	%
	198	35.48		360	64.52

Last Year						This Year					
General	SC	ST	OB C	Physically Challenged	Total	General	SC	ST	OB C	Physically Challenged	Total
409	62	13	120	Nil	604	335	69	20	97	513	544

Demand ratio 1: 5.794

Dropout % 3.69%

5.4 Details of student support mechanism for coaching for competitive examinations (If any)

Personal training is given by teachers to students approaching them for their guidance. In addition, workshop was also organised to guide students for NET and SET examinations. A workshop was arranged to popularize Mathematics where in addition to the students at the Institute, outside students also get benefitted.

No. of students beneficiaries : 380

5.5 No. of students qualified in these examinations

NET SET/SLET GATE CAT
 IAS/IPS etc State PSC UPSC Others

5.6 Details of student counselling and career guidance

The staff members provide academic and personal counselling to the students as and when needed. The educationally disadvantaged students or those identified as slow learners during the classroom and laboratory interactions are given personalized attention. Explanation is also provided to the student in languages other than English, if the student has difficulty in understanding.

No. of students benefitted

5.7 Details of campus placement

<i>On campus</i>			<i>Off Campus</i>
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
Nil	Nil	Nil	126

5.8 Details of gender sensitization programmes

Nil

5.9 Students Activities

5.9.1 No. of students participated in Sports, Games and other events

State/ University level National level International level

No. of students participated in cultural events

State/ University level National level International level

5.9.2 No. of medals /awards won by students in Sports, Games and other events

Sports : State/ University level National level International level

Cultural: State/ University level National level International level

5.10 Scholarships and Financial Support

	Number of students	Amount
Financial support from institution	----	-----
Financial support from government	7	Rs. 82,950/-
Financial support from other sources	199	Rs. 30,93,030/-
Number of students who received International/ National recognitions	----	----

5.11 Student organised / initiatives

Fairs : State/ University level National level International level

Exhibition: State/ University level National level International level

5.12 No. of social initiatives undertaken by the students

5.13 Major grievances of students (if any) redressed: Nil

Criterion – VI

6. Governance, Leadership and Management

6.1 State the Vision and Mission of the institution

Vision : Empowerment through Education is the key to Personal, Social and National Development. Our vision is to be a premier Institute providing students with value added higher education in a dynamic environment where today's students meet tomorrow's opportunities.

Mission:

- To strive for excellence in academic and non-academic fields in order to match the global standards.
- To prepare outstanding educators, scholars and researchers and to advance education through research in science and art of teaching and learning.
- To work towards advancement of the knowledge base through research by undertaking research in basic, applied and interdisciplinary sciences.
- To empower students through education to make them strong, self-reliant, responsible and secular human beings, professionals and citizens, so that they chart out their own path of success and possess perfection in their endeavours.
- To foster Regional, National and Global competencies among the students.
- To ensure that every student of Institute becomes an achiever.

6.2 Does the Institution has a management Information System

Yes. Department of Higher Education, Govt. of Maharashtra, Mumbai, Directorate of Higher Education, Pune and Joint Directorate H. E., Mumbai are the managing authorities.

6.3 Quality improvement strategies adopted by the institution for each of the following:

6.3.1 Curriculum Development

The Institutes being an affiliated institute to the Mumbai University follows the syllabus of Mumbai University. Syllabi of Mumbai university are revised after every five years. Several faculty members of different departments of the institute are actively involved in syllabi framing and revision either as a member of BOS or invited BOS member.

6.3.2 Teaching and Learning

Quality of teaching and learning in maintained through :

- Creative learning methods, students' projects and e-learning pedagogies
- Use of ICT technique for effective teaching.
- Extended hands to slow learning students.
- At the beginning of session, the basic concepts and fundamentals of each subject are taught to the new entrants.
- Organising guest lectures
- Vigilance on attendance and academic calendar.

6.3.3 Examination and Evaluation

Internal tests, group discussions, student seminars are some of the methods for internal evaluations. For every paper 40 % marks are for the internal evaluation of students. It also includes provision of 5 marks for more than 75% attendance and active classroom participation. Report writings, review writings, project completion report preparation are research proposal writing are the prominent features. Institute follows examination pattern of Mumbai University and Mumbai University has a Central assessment centre in Exam. House located in its Kalina Campus. Mumbai University also has revaluation system and provides photocopy of answer sheets to the students.

6.3.4 Research and Development

Faculty and research scholars are involved in R & D, while PG students are guided for their research based project in second year. Research grants are procured from various funding agencies. Govt. of Maharashtra also supports for procurement of sophisticated instruments. Faculty publish their research papers in reputed and high impact factor journals. They also participate in National and International conferences to present their work and deliver invited talks. Conferences, workshops, seminars are organised.

6.3.5 Library, ICT and physical infrastructure / instrumentation

Institution has an adequate number of books, computer labs, internet connectivity, scientific instruments, and classrooms.

- Optical fibre cabling on campus.

Library: In academic year 2015-16, total 414 books were purchased by the institute's library which cost Rs. 12,20,027/-. E-journals are available through INFLIBNET. Library automation work is in progress. This year library purchased two computers and a printer. Internet facility is made available in the library for the students and staff.

ICT: KIOSK has been installed from DPDC grants in 2015-2016.

Infrastructure Procurement: Sophisticated instruments have been added almost in all the departments through Govt. plan and non-plan grants, DPDC grant, grant from UGC, DST-FIST scheme, CSIR major project, DBT project, University minor projects, BRNS major project etc.

6.3.6 Human Resource Management

It is done through arranging campus-interviews, recommend students for industrial jobs, recommend students for fellowships available abroad. Several committees are established by the institute to assist the human resource management. Placement Cell: The Institute has a Student's Guidance and Placement Cell to provide guidance and information on various avenues for higher studies and employment options. Campus interviews are also conducted in the Institute as per the requirement of industrial establishment on their approach.

6.3.7 Faculty and Staff recruitment

Faculty recruitment- Maharashtra Public Service Commission is the appointing body and they follow Government of Maharashtra recruitment rules and UGC guidelines for recruiting the faculty. In academic year 2015-16, six Assistant Professors joined the institute in various subjects whereas a total of 42 CHB lecturers were appointed by the Institute by conducting interviews. There are two unaided departments in the institute-Biotechnology and Environmental science. Teaching and nonteaching staff in these two departments were appointed through interviews by a committee formed at the institute level under the chairmanship of Director, The Institute of Science.

Staff recruitment: Director or Joint Director of Higher Education appoints the staff as per the Government of Maharashtra Norms. In 2015-2016, one clerk was appointed.

6.3.8 Industry Interaction / Collaboration

Institute is having collaboration with Pancham Acquaculture for prawn culture.

The Institute has MoU with Institute of Chemical technology, Mumbai for research in material Science.

Institute also has signed MOU's with Malkolak Knowledge Centre, Bio-FD and C Anti Ageing institute, Incheon South Korea, CIFE, Mumbai and BOS Zoology of Mumbai University

6.3.9 Admission of Students

- Admission is purely on merit basis and done in transparent procedure.
- All admission information is placed on Institute's website and/or notice boards.
- Reservations are strictly followed as per state government norms.
- Admission at research level is according to UGC and Mumbai University norms. PET/NET/SET/GATE qualified candidates are admitted for Ph.D. after conducting interviews.

6.4 Welfare schemes for

- **Teaching staff:** UGC Faculty Improvement Program, Mediclaim facility, Medical check-up, Staff Training at YASHADA, Pune Group Insurance.

The Golden Jubilee Corpus fund provides financial assistance to the Institute teaching staff to participate in international conferences or to conduct Workshops. In the year 2015-2016, financial assistance of Rs. 22,000 was provided by the corpus fund.

- **Nonteaching staff :** Co-operative Society Facility, Medclaim facility
Medical check-up, Group Insurance.

- **Students:** Haemoglobin check up facility especially for female students, gymkhana facility, hostel facility, canteen facility

Scholarships and fellowships: Students are offered various scholarships fellowships as per merit and requirements. Students from SC/ST,OBC and economically weaker sections are supported financially by the provision of freeships and scholarships received from the Government and other agencies. e.g. Government of Maharashtra Minority scholarship, EBC/PTC/STC Scholarship, Open Merit Scholarship, Daxina fellowship, Post graduate Indira Gandhi Scholarship scheme for Single Girl Child, J.N. Tata Endowment Loan scholarship etc.

The Golden Jubilee Corpus fund provides financial assistance to the Institute students to participate in international and national conferences. In the year 2015- 2016, financial assistance of Rs. 7,500/- was provided by the corpus fund to the students.

6.5 Total corpus fund generated

The corpus of Golden Jubilee fund is Rs. 1,018,507.
(Reference: Audit report dated 10 Feb 2016)

6.6 Whether annual financial audit has been done

Yes No

6.7 Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	Yes	Directorate, Higher Education, Maharashtra state	Yes	Director and Head of Dept.
Administrative	Yes	Directorate, Higher Education, Maharashtra state	Yes	Director of the Institute.

6.8 Does the University/ Autonomous College declares results within 30 days?

For UG Programmes Yes No

For PG Programmes Yes No

Mumbai University declares results in 45 days.

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

External and internal assessment scheme is in practice. Revaluation, Recounting, Provision of photocopy of Answer books, ATKT are common practices. Semester pattern is implemented for theory and practical examinations. Examination/revaluation reforms at institute level cannot be initiated since institute follows the examination pattern of Mumbai University. Mumbai University has a revaluation system and provides photocopy of answer sheets to the students.

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

Mumbai University encourages the affiliated colleges to apply for the academic autonomy.

6.11 Activities and support from the Alumni Association

The alumni association helps in mentoring the students in research. Besides this, lectures and workshops for the overall development of students are also organised. A seminar on '*Enterpreneurship–Awareness in youth, Perspectives of research fellows to entrepreneurs*' was organized by alumni Prachi Nimkar. Alumni association also contributes for the placement of students after M.Sc. or Ph. D.

6.12 Activities and support from the Parent – Teacher Association

Nil

6.13 Development programmes for support staff

Nil

6.14 Initiatives taken by the institution to make the campus eco-friendly

The Botanical Garden of the Institute provides a covering of Green Canopy to maintain eco-friendly atmosphere to the area. Some important tree plants exists are (Couropita ginensis) Coconut trees, Timbertree (Coryophylum enophylum), Mangifera indica, Ashoka tree,etc. It houses rare gymnosperm plants like Aurocaria and Cycus plants (Tinospora, Aegle marmalosa) and other angiosperm herbs and shrubs which are collected from different habitats.

During the year 2015-2016, the plantation program was conducted. Around 100 saplings were planted in the Institute's botanical garden. The Garden biomass is collected and stored in the concrete pits for composting. Later it is used as organic manure in the garden. One additional plastic pit is also erected in the garden. Varmi composting is also carried out using garden biomass.

To save electricity, solar panels are used in the Institute Library.

Criterion – VII

7. Innovations and Best Practices

7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

Various innovations are being used by different Departments of the Institute.

- Science Lecture series – Different Departments are organising popular science lecture series on different subjects that will benefit students. Department of Botany has started a new lecture series under the title “Discover Science” as a tribute to Dr. A.P.J. Abdul Kalam. Experts from the fields of Education, Industry and Healthcare were invited to deliver a talk. Some of the subjects included ‘Science in a bar of Soap’, ‘Moving from Academics to Industry’, ‘Linking Homeopathy to Basic Sciences’, ‘Drug Development’, ‘Pathology in Homeopathy’, ‘Botany and Infertility’, ‘Medico Surgical cases’, ‘Learning Disabilities’ etc.
- Another innovation used is to develop effective teaching and learning methods. For this the goal was to establish and implement standardized protocols using audio-visual aids, give hands on training to the students and to give field exposure. All Departments in the Institute equipped with LCD projectors, screens and computer system with internet connections so that faculties can make use of power point presentations as well as online tools available for teaching. Screening of Short films about environment and case studies are used for awareness of the students. This has created favourable and encouraging atmosphere for both faculties as well as students. National level workshops was organised by Botany Department for the HPTLC, hyphenated HPTLC technique and HPTLC-MS. Excursion / study tours are organised by the Departments.

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

Achievements on action plane decided in the beginning of the academic year 2015-2016 are as per 2.15 of Part A.

7.3 Give two Best Practices of the institution (*please see the format in the NAAC Self-study Manuals*)

- Student training
- Research Environment

Details are given in Annexure III.

7.4 Contribution to environmental awareness / protection

- Various activities are undertaken keeping in mind energy conservation and waste (including hazardous and e-waste) management. Proper disposal of waste material generated after practical work as per the guidelines of CPCSEA and Environmental Department Guidelines is done. The garden waste is not thrown outside and it is used to prepare compost in composting pits thus maintaining cleanliness and administrating recycling of waste. Small projects are assigned to the M.Sc. Students to assess toxicity in the plants, pollution level testing, heavy metal deposition in the plant leaves and soil.
- For environmental awareness: Students are encouraged / challenged through different competitions to take up environmental issues. A visit to Mangroves on occasion of World wetland day (2nd February) is organized. Students are made aware of Biosafety, Hygiene, Good Laboratory Practices & waste disposal practices. Places of Environmental interest are visited by the M.Sc. students as a part of Excursion.

7.5. Whether environmental audit was conducted? Yes No

7.6 Any other relevant information the institution wishes to add. (for example SWOT Analysis)

Strength:

- Most Departments are well equipped with installed sophisticated instruments.
- Conducive working atmosphere for research activities on various innovative aspects.
- Qualified and experienced faculty.
- Availability of Molecular Biology / Endocrinology Laboratory facilities, Animal House facility for the advanced research.
- Institute runs many PG Departments that University doesn't have.
- Different Departments have prestigious research and infrastructure grants from various funding agencies.
- Institute is run by the state government, making it easier to access various educational funding avenues.

Weakness:

- Half of the teaching posts in some of the departments are vacant. Lab Assistants in the departmental Laboratories and Mali in the Garden required on regular basis.
- No extra funds are available for instruments repair & maintenance or AMC.
- Laboratory support staff is not adequately qualified / trained.
- Non-availability of sufficient technical, administrative and support staff.
- Some Departments do not have sufficient space for the laboratories, classrooms & seminar halls.
- Many senior faculty positions are vacant.

Opportunities:

- As a Post-graduate Research Institute with basic sciences Departments, there is a lot of scope for inter-disciplinary research and exchange of knowledge within the Institute.
- Scope to introduce short-term training programmes for both PG and UG students that could make students better equipped practically.
- Scope to attract corporate and recruiting agencies for campus recruitments.
- Huge scope for Networking and collaborations with other academic and research Institutes
- Good opportunities for follow-up of research i.e. Ph.D. work.

Threats:

- Competition with professional and vocational courses is resulting in merit decrease.
- Weakness pertaining to insufficient technical, support and administrative staff can be a threat for efficiency and effectiveness on the academic and research functions.
- Vacant /non-filled senior faculty positions could be an impediment in the progress and much needed requirement for Departmental leadership. This could become a motivational threat for the working faculty.
- Due to financial stress in case of some of the students, their attentions and attendance is affected.
- Superficial high class physical atmosphere/appearance/projection, irrespective of any academic and scientific excellence, is now attracting students more and it is becoming a serious threat.

8. Plans of institution for next year (2016 - 2017)

1. To organize two Days Botanical FEST-'PLANTA' in Botany Department
2. To create media room facilities with Wi-Fi connectivity for the Research and PG students of the institute.
1. Renovation of PTC lab in Botany Dept. and cold room in Biochemistry Dept.
3. To arrange guest lectures through - Discover Science Lecture series in different subjects
4. To submit a proposal to the University of Mumbai to increase total number of sanctioned Ph. D. seats in Botany from 20 to 45. It is also planned to submit proposals to Mumbai University to increase number of PG seats for the academic year 2016-2017.
5. To submit Major and Minor Research Projects to various funding agencies.
6. To undertake short and long academic excursions
7. To organise Prof B.C. Haldar memorial Lecture.
8. To organise conference, Workshops, Seminars and short training courses in different subjects
9. To organise NET/SET guidance workshop.
10. To make the entire campus Wi-Fi.
11. To make the admission process online.
12. To arrange Study tours, industrial visits, one day visit to Sanjay Gandhi National Park and Visit to Pollution Treatment Facility, Navi Mumbai
13. To celebrate World Ozone day, Wetland Day, Wildlife week, Sigmatics FEST and Ramnujan day.
14. To inaugurate Microbiologists Society
15. To upgrade the infrastructure of the Biotechnology department after conducting technical audit of the functioning/reparability of the equipments.
16. To provide proper locker/storage facility to the students of Biotech. Dept.
17. To reorganize Biotech. Dept laboratory and storage space by providing proper storage racks.
18. To establish linkage of Biotech. Dept. with other Research Facilities around that can help, guide, and provide opportunities for the students.
19. To establish doctoral research facility in the Biotech. Department.
20. To assess revival feasibility of tissue culture facility in the Biotech. Department and take action accordingly.
21. To establish computer lab for bioinformatics experiments for the M.Sc. Biotechnology students.



Prof. Ajay Chaudhari
Co-ordinator IQAC



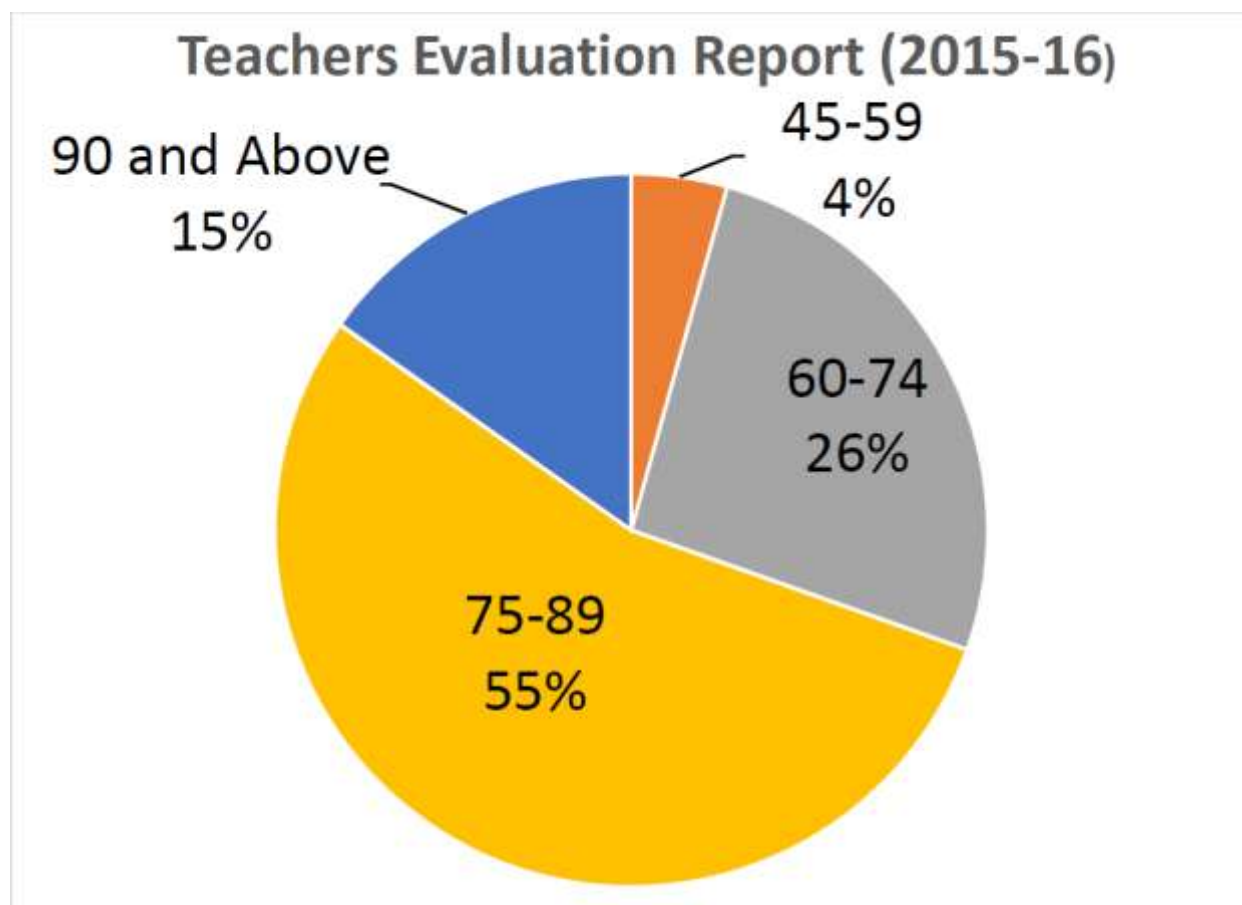
Name : Prof. A. S. Khemnar
Director, The Institute of Science

Annexure I: Academic Calender for 2015-2016

2015 - 2016		IMPORTANT DATES																																																
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Annexure II Students evaluation report

% Index	Number of teachers
45-59	02
60-74	12
75-89	25
90 and above	07



Annexure III : Best practices of the Institute

Practice 1) Title: Student training

Goal: To develop culture of thinking and learning in students.

The context: Ours is Post Graduate Institute with nine different subjects taught and researched. Different Departments have different needs to bring about innovation that could ultimately benefit students.

The practice: Some Departments are regularly conducting tests on completion of topics followed by individual counselling taking into account the individual as well as academic needs of the students. Some Departments are using field exposure strategy wherever possible so that students have actual exposure / experience of the topic / problem / issue. Department of Botany and Department of Environmental Science have initiated composting of garden waste. Botany Department is also involved in conservation of old trees. Organizing guest lectures of experts in the field and also giving hand on experience to students for various techniques and software programmes is also a part of the student training. Collaborations and student visits to other Institutes as well as visits of students from other Institutes to our Institute are arranged so that students can learn through interaction.

Evidence of success: Some of the Departments have witnessed improved performance of the students in the exams.

Problems encountered & resources required: Though all these practices have profound positive effect the efforts get limited due to shortage of time as well as faculty to attend individualised academic needs of the students.

Practice 2) Title: Research environment

Goal: To create conducive environment for undertaking research activities.

The context: Ours being a Post-Graduate Institute, research is a major component of our student development programme.

The practice: Internal Research Student Meet is organized so that students can express and exhibit research work undertaken by them. Students are trained through their project work and through various workshops organised by the Institute. Students are also encouraged to attend various conferences, meetings and workshops. Students are provided access to modern laboratory facilities and instrumentation facilities within and outside the Institute.

Evidence of success: This has resulted into many students as well as faculties guiding them presenting their work at national and international conferences. There are also numbers of quality publications in good impact factor journals.

Problems encountered & resources required: Several faculty positions in the institute are vacant. The teaching staff recruitment in the Institute is through Maharashtra Public Service Commission (MPSC) by following the norms of Maharashtra Govt. Therefore there is a delay in faculty recruitment. The requirement has already been sent to Govt. of Maharashtra and MPSC has already advertised the faculty positions. Six new faculty members at Asst. Prof. level have joined the Institute in 2015-2016. Shortage of faculty as well as technical and laboratory support staff puts limitations on optimal usage of the facilities developed.