



## **7.2.1 - Describe two best practices successfully implemented by the Institution as per the NAAC format provided in the Manual.**

### **Best Practice No.1**

#### **1. Title of the Practice: Disabled to Enabled**

#### **2. Objectives:**

- To provide equal opportunities for the differently-abled students.
- To lend financial and academic support to educationally disadvantaged students.
- To encourage, instil confidence and create awareness about opportunities reserved for them.
- To enable disabled students to be self-reliant, socially empowered and financially independent.
- To establish linkages with NGOs and government organisations to support the differently-abled students.
- To encourage faculty members and students to lend moral support to disabled students to pursue higher education.

#### **3. Context:**

As per the Rights of Persons with Disabilities Act 2016, higher education is everyone's right, irrespective of physical capabilities and disabilities. The assessment of UGC reveals that a meagre number, namely less than three per cent of differently-abled students, have access to higher education in our country. The schools for differently-abled students in Nashik, namely, the National Association for the Blind, the National Federation for Blind, and Anand Niketan, provide only primary education. These students usually garner education till higher secondary level under an inclusive education scheme, but they are generally not encouraged to pursue higher education. They are forced to discontinue their education and depend on others because they lack a teaching environment conducive to their needs and economic constraints. Many students are from economically deprived families, so it becomes a significant hurdle for their parents to support them financially. Therefore, the College intends to lend a helping hand so they can fulfil their dreams without being invaded by their disabilities. The Institution underlines everyone's right to education, information, and empowerment. Therefore, 'Disabled to Enabled' is chosen as a best practice by the College.



#### **4. Practice:**

Being a socially committed institution, K. R. T. Arts, B. H. Commerce & A.M. (K. T. H. M.) Science College believes in the 'well-being' of the masses and intends to provide an equal platform for disabled and other students. Therefore, the College plans to offer them higher education without incurring any financial burden on their parents. One of the initiatives is the Institution charges only Rs.10, a nominal amount as admission fees from these students, and sometimes, they are not charged at all. The representatives of the College are in constant touch with the NGOs and nearby blind schools and junior colleges. The differently abled are often diffident as they consider themselves a social burden and are unaware of the special privileges and schemes offered by the government and other philanthropic organisations. Therefore, Faculty members and student volunteers of our College often visit these schools to guide them in the right direction. Their continuous counselling and strenuous efforts motivate visually challenged students to pursue higher education. Awareness programmes are organised to make them understand the need to be financially independent and socially empowered. The college representatives convince them that higher education can make a difference in their lives. Thus, constant support, awareness programmes, and motivational sessions encourage them to avail themselves of education at KTHM College with other students.

Conducive environments created by the College, like ramps at every entrance and exit point, nominal admission fees, exemption of exam fees, expert video lecture series for visually challenged students to use NVDA Screen Reader Software, unique classrooms with Braille Books, 12 DOT Mini devices that can read any PDF text, Free Laptops, training to use Jaw Software, monetary support through MOU 's are the initiatives that are implemented by KTHM college solely to encourage more and more visually challenged students to the arena of higher education. Our ambassadors are our successful alums, who are visually challenged and have proved their mettle in various fields like the Paralympics and National and International competitions.

Forty-five disabled students were admitted to the College in the academic year (2022-23) by parents who were convinced by the college authorities that their children would have a bright future in our College.



#### **4.1 Infrastructure Facilities**

The College believes in Equity and inclusion of all students, irrespective of their abilities and disabilities. Hitherto, it assumes that the excellence of an educational institution largely depends on its accessibility to all students. Hence, the College has provided infrastructure facilities that cater to the needs of differently-abled, namely, standard separate, non-slippery ramps, wheelchairs, restrooms, examination rooms, unique study rooms near the library and scribes during examinations. In addition to this, spacious washrooms make for easy movement and use, and washbasins and taps are at a lower level for their convenience. Besides, wide stairs with multiple entrances and exit points to the College help students disperse quickly without crowding on stairs and ramps. Hence, the College has a disabled student-friendly campus.

#### **Ramps For the Disabled at multiple entrances to the College**





#### 4.2 Library facilities:

Library facilities for Disabled Students: Library facilities include computers with headphones with speakers and specialized software, a hundred Braille books, a thousand Audio cd's Audiobooks, Jaws screen recording software, twelve Dot Mini devices and a Kibo book reader specifically for disabled students. The details of the facilities are as follows.

Most differently-abled students are visually challenged, so the College has developed many facilities to alleviate their difficulties in gaining knowledge and skills.

- K.T.H.M. College library has a Differently Able Students Center
- Dedicated 05 computers with headphones and specialized JAWS (Job Access with Speech) Professional-V.17 software for visually challenged students.
- The library provides special facilities to the physically challenged so that they do not need to wait in queue for books. They are offered direct access to the circulation counter.



- The library staff assist them at a personal level for searching the required sources of information.
- More than 2000 audiobooks are available through Yashowani. Yashowani, Pune is helping to record books on demand for visually impaired students.



- Book Bank facility is given to physically challenged students. For the academic year, the whole book set is allowed for recording and learning purposes of relevant students.
- The library has 150 Braille Books syllabi and motivational and competitive examinations for the overall development of students.
- Students demand some Braille book titles that are unavailable in the KTHM College Library. Such Braille books are provided by NAB (**National Association for the Blind**), Satpur, Nashik, through the Inter Library Loan facility.
- Borrowing Braille periodicals such as Reliance Drishti and Sparshdynan Magazine, published fortnightly from NAB (**National Association for the Blind**), Satpur, Nashik for increasing reading habits amongst students.
- **DOT Mini Device:** The library Department Provides 12 DOT Mini Devices to Visually impaired students. The DOT Mini device is like a recorder with an 8GB memory card and a Braille words key.
- **KIBO XS Devices:** The library Department has three KIBO XS devices. KIBO XS is a device like a book scanner that scans the book page and is recorded in audio format on the Cloud server. Students retrieve data through their Android Mobile phone using the KIBO app from the Google Play Store. Three KIBO XS Devices are in the library for student's usage. The College has spent 96,443/- to purchase KIBO XS devices.
- **Jaws Software:** JAWS is a screen reader that works with the Windows operating system to access today's popular software applications and the Internet. JAWS uses an integrated voice synthesizer and a computer's sound card to output the content of the computer screen to speakers. It costs around 3,70,500/- and makes learning easier for students.
- **SAARTHI Device: Blind Welfare Organisation of India**, Nashik, in collaboration with **IndusInd Bank**, distributed a Saarthi Device with a charger supported to stick for Visually Impaired Persons (**VIP**). One stick with the whole set (Saarthi Device + Charger) is in College for differentially able students' usage.

➤ **On-Demand Service:**

The library department takes the initiative to motivate and increase reading habits among users. New books (new Arrivals), famous books in PDF, audiobooks, etc. Listed on notice boards and announced in the break of lectures on Google Classroom. Students make demands through WhatsApp numbers or e-mails as requirements are fulfilled that same day. The library has 2000+ audiobooks and 1800+ free e-books downloaded from



various Marathi websites like e-Sahitya, netbhet, etc. Our students are primarily in demand for Marathi e-books.

- **Referral Service:** In the academic year 2022 – 23, For Visually disabled students, the National Association for Blind (NAB), Satpur Unit, Nashik, held Four workshops and seminars on various activities and two guest lectures on the Importance of Reading and preparation of competitive examinations. For such activities, the KTHM College Library provides information and guidance regarding workshops and seminars. This service is termed a referral service.

#### Expenditure on DAS Centre

<i>Sr. No.</i>	<i>Particulars</i>	<i>Quantity</i>	<i>Price (Rs./-) Approximately</i>
1	Braille Books	128	38,400/-
2	Audio CD's	271	16,159/-
3	1 TB Hard Disk (For Audio Books)	1	4,450/-
4	Computers	5	1,58,000/-
5	JAWS Screen Reading Software License Copy	5	3,70,500/-
6	Head Phones	5	2,250/-
7	Speaker	1	800/-
8	Dot Mini Devices	12	2,40,000/-
9	KIBO Device (Book Scanner)	3	96,443/-
10	SAARTHI Device (Electronic Stick)	1	2,500
<b>Total</b>			<b>Rs.9,29,502/-</b>

The College continuously monitor the academic progress of visually challenged students. It helps students to overcome their disability and even outshine normal students. Hence, the College provides them with laptops and intensive training to use assistive technology. They have become tech-savvy and instilled confidence to train other visually impaired students. It has helped to create a comfort zone for blind students. The strategy has worked well, as many blind students are part of the KTHM family today.

#### 4.3 Sports Facilities:

The College provides not just the primary education required to attain a source of income for disabled students but also helps them soar in their skills. A world-class archery training centre has been established in the College for interested students. The entry to the training centre has ramps and gyms that facilitate the needs of differently-abled students. Chavhan



Shreyas Deepak and Wad Nikitha Eknath have participated in swimming and Rope Mallakhamb in various national competitions and bagged ten medals in 22-23. They are given support and guidance from time to time. The College hopes to add a medal for India in the history of Paralympics in the years to come.

Name	Type	2022-23			
		Level	Venue	Date	Medals Won
<b>Shreyas Madhukar Chavan</b>	Swimming	National	Indore, MP	15-19/02/2023	Gold (4X50 M MED RY)
	Swimming	National	Indore, MP	15-19/02/2023	Gold (4X50 M FREE RY)
	Swimming	National	Indore, MP	15-19/02/2023	Bronze (200 MTR) BACK
	Swimming	National	Indore, MP	15-19/02/2023	Bronze (50 M BREAST
	Swimming	National	Pune	13-14/08/2022	Gold BIATHLE
	Swimming	National	Nashik	15-18/12/2022	Gold 50 M BREASTSTROKE
	Swimming	National	Nashik	15-18/12/2022	Silver 100 M BREASTSTROKE
	Swimming	National	Nashik	15-18/12/2022	Silver 200 M BREASTSTROKE
	Swimming	National	Nashik	15-18/12/2022	Silver 200 M I.M

#### 4.3 MOU to enable the disabled:

The College has established MOUs with various schools in and around Nashik: NAB, NFB, Anand Niketan, NGO, School, and Jr.Colleges. The representatives of the College continuously visit these schools and interact with the differently abled students. These fruitful interactions have dispelled their fears and uncertainties and encouraged them to pursue higher education. Hence, numerous blind students have become part of KTHM College and they have proved that they can excel in various fields despite their disabilities if society can provide a favourable platform.

The College has signed an MOU with the Brand Amba Chennai Blind Foundation. They have provided scholarships to these students.

The College has signed an MoU with DOT INCORPORATION, South Korea, and the Blind Welfare Organization of Nasik. Under this MoU, 12 Dot Mini devices worth three lakh rupees were procured for the visually challenged in 2018-19. They are placed in the library so that students can use them. The MoU aims to teach visually impaired students to use Braille so that they can read on their own. These students, in turn, teach students of



blind schools to use the Dot Mini device. The students were trained to use the Device for effective reading and increasing Braille literacy. One of our students, Mr. Hrishikesh Pagare, is a trainer and conducts various training sessions for blind schools and institutions.



Three Kibo books have been purchased to help visually impaired students to read books. It helps scan books and store them in clouds so that they can retrieve them often, read them, and learn using the KiboBook App.<sup>3</sup>

#### **4.4. Assistive Technology for Visually Challenged:**

Technology in education has been proven to be a turning point in disseminating knowledge in traditional classroom settings. Integrating technology with teaching and learning has developed an interactive environment. With advanced technological development, technology has paved the way to create equal opportunities for differently-abled learners to engage and be a part of traditional classroom settings. Our College has used the Non-Visual Desktop Access (NVDA) window for disabled students to engage, participate and overcome the hurdle of being disabled and have the same educational experience as regular students.

In many cases, there is a possibility of a student experiencing more disabilities. For these students to cope with their disability and complete tasks and challenges is quite difficult. Hence, assistive technology has been a powerful tool in helping students perform tasks they previously would not have been able to achieve.





Despite his disability, our student, Akash Chavan, prepared some videos on NVDA and its uses for differently-abled students. He stresses the role of NVDA in education and highlights its value and scope. Currently, our College provides disabled students facilities like NVDA, and JAW software, free software for visually challenged students. The video lectures on Assistive technology are created to cater to the needs of visually impaired students.

Sr. No	Title of the Video	YouTube Video Link
1	Introduction to Lecture Series: Assistive Technology for Visually Challenged	<a href="https://youtu.be/Qa3CGodaR3s">https://youtu.be/Qa3CGodaR3s</a>
2	Assistive Technology for Visually Challenged: Lecture 1 Desktop Orientation with Screen Reader NVDA	<a href="https://youtu.be/k7TQWzheTNO">https://youtu.be/k7TQWzheTNO</a>
3	Assistive Technology for Visually Challenged: Lecture 2 Orientation of This PC by screen reader NVDA	<a href="https://youtu.be/KqybUZ1rM6s">https://youtu.be/KqybUZ1rM6s</a>
4	Assistive Technology for Visually Challenged: Lecture -3 Cut, Copy, Paste and Delete by using NVDA	<a href="https://youtu.be/t_cqnGA1udI">https://youtu.be/t_cqnGA1udI</a>
5	Assistive Technology for Visually Challenged: Lecture-4 How to Install NVDA & Uninstall a Software by it	<a href="https://youtu.be/DB2nBUYdw3U">https://youtu.be/DB2nBUYdw3U</a>
6	Assistive Technology for Visually Challenged by Akash Chavan: Lecture -5 Important Settings of NVDA	<a href="https://youtu.be/UwZz4A-OpR4">https://youtu.be/UwZz4A-OpR4</a>
7	Assistive Technology for Visually Challenged by Akash Chavan Lecture 6: What is extension & Enabling it	<a href="https://youtu.be/pyqPO9wYfy8">https://youtu.be/pyqPO9wYfy8</a>
8	Assistive Technology for Visually Challenged by Akash Chavan Lecture 7 Create Desktop Icon in Windows 10	<a href="https://youtu.be/feb9LI2D1-c">https://youtu.be/feb9LI2D1-c</a>
9	Assistive Technology for Visually Challenged by Akash Chavan: Lecture 8 Creating New Folder with NVDA	<a href="https://youtu.be/qKPYPwxJTmQ">https://youtu.be/qKPYPwxJTmQ</a>
10	Assistive Technology for Visually Challenged by Akash Chavan: Lecture 9 Empty Recycle Bin & Restore Data	<a href="https://youtu.be/HdOxA9pGssU">https://youtu.be/HdOxA9pGssU</a>
11	Assistive Technology for Visually Challenged by Akash Chavan Lecture 10 Internet Shortcut Icon with NVDA	<a href="https://youtu.be/APOVeWr5deA">https://youtu.be/APOVeWr5deA</a>
12	V.D. Savkar, Help the Blind Foundation, Nashik	<a href="https://youtu.be/9mqns7iuvpo">https://youtu.be/9mqns7iuvpo</a>

## 5. Evidence of Success

Thirty-three differently-abled students were admitted to senior College in 2022-23. Around two hundred and forty-three disabled students have been admitted to College during



the last four years. The College has played a pivotal role in instilling confidence, nurturing their dreams and conquering new heights beyond their physical limitations. The strenuous efforts of our College have made them self-reliant and financially independent. Consequently, many have obtained jobs, pursuing higher studies in law.

#### **6. Problems Encountered and Resources Required:**

- Difficulties in supporting students who intend to pursue their dreams in science streams.
- Budget allocation to create laboratories for differently-abled students.
- To create conducive environments to carry out research for differently-abled students.
- To attract more differently-abled students to conventional and non-conventional courses.

However, the College is keen to support and encourage differently-abled students so that they will carve a niche of their own and stand independent in the future.



## Best Practice No.2

### 1. Title of the Practice: Development of Scientific Temper and Fostering Research Culture

#### 2. Objectives of the practice:

- ✚ To motivate and create a platform for faculties and budding research scholars to undertake the experiment and invent.
- ✚ To encourage faculties to invent new ideas/ methodologies and protocol to publish research papers in high repute journals.
- ✚ To encourage faculties to invent new ideas/ methodologies and protocol to file the patent.
- ✚ To acclimatize teachers and research scholars with the changing research climate and thereby to nurture a scientific temper.
- ✚ Faculties are encouraged to pursue Ph.D. and apply for sponsored projects from various external funding agencies.
- ✚ To promote multi-disciplinary research leading to innovative projects in science and technology.
- ✚ To establish linkages and collaborations with other institutions/industries and universities in and abroad for research.
- ✚ To organize national and international Conferences/Seminars/Workshops periodically in a year to disseminate knowledge and also to create an awareness among the faculty and student community.

#### 3. The Context:

*"Research is creating new knowledge" – Neil Armstrong.*

Research is the core element of the higher education and its promotion reflects both in the vision and mission statement of the KTHM College. Research not only fulfills the basis of the fundamental concept of the college but also contributes for the economic and social development of the region and nation, which determines the status and the quality of college.



KTHM College is one of the prominent institutions affiliated to Savitribai Phule Pune University and North Maharashtra. Therefore, the college intends to utilize the research capability to resolve the major challenges of the times. The College has a long-standing history of successful imparting of education. It is a key player in the field of higher education in Maharashtra with around 32 Departments, 511 PhD research students pursuing PhD degree, 57 enrichment courses, and 23 research programmes. Therefore, the Institution does not want to limit itself to just disseminating knowledge to students. On the other hand, the college is keen to create scientific environment and instil research aptitude in students and academicians so that they will become an asset for socio-economic development of our nation. The college has taken a step forward in the field of education by opening the doors of research to all faculties and students. Hence it has been selected as one of the best practises of the college. The initiative also provides financial aids and scholarships to research scholars. Veterans in the field train novices to sharpen their research skills and direct their inquisitive spirit in the right direction.

#### **4. The Practice:**

The institution has a Research Advisory Committee and also every Department has a Research Coordinator to promote research culture among the staff and students. The college has established a research ethics committee to look into the compliance of the various research activities with the institutional values. Thirteen Departments of the college are approved PhD research centres of Savitribai Phule Pune University, Pune. In which, 177 PhD guides are working on their core research. In last academic year, Five hundred eleven budding research scholars taken the admission Ph.D in various department of the college. Among these, seventy-four Ph.D. scholars have been awarded Junior Research Fellowship (JRF) and Senior Research Fellowship (SRF) from CSIR, UGC and other funding agencies. The college always cater to the needs of the research scholars, the infrastructure is updated from time to time with well-equipped laboratories, computing and internet facilities, e-journals, INFLIBNET, DELNET, etc. it has paved to productive outcome in research. Consequently, in 2022-23 academic calendar, many faculties have published more than 226 research papers in peer reviewed



journal and also successfully filed the 04 patents on their ongoing research. Besides this, twenty faculties have published book chapters in national and international reputed publication.

#### **Workshops/seminars:**

College with IQAC has organized 22 workshops/seminar to upgrade the knowledge of faculties and students throughout the year. Faculties and students were actively participated and benefited through this various national and international conferences/workshops on Research Methodology, Intellectual Property Rights (IPR) and to develop entrepreneurship ideas from the research. This activity led the foundation to develop new research ideas and also to encourage their ideas for the development of new startup venture.

Sr. No.	Name of the Workshop / Seminar	Number of Participants	Dates
1	Participation in IIC Regional Meet at Symbiosis International University, Pune	02	01-08-2022 to 01-08-2022
2	MIC Driven Activity: Innovation & Entrepreneurship in HEIs for Aatmanirbhar Bharat & Celebrating 75 Years of Independence -Azadi Ka Amrit Mahotsav.	310	11-08-2022 to 17-08-2022
3	Celebration of World Entrepreneurs Day	55	21-08-2022 to 21-08-2022
4	Session on Accelerators/Incubation - Opportunities for Students & Faculties - Early Stage Entrepreneur	140	06-09-2022 to 06-09-2022
5	Session on Angel Investment / VC Funding Opportunities for Early Stage Entrepreneurs	45	07-09-2022 to 07-09-2022
6	College Level Innovative Project Competition Avishkar 2022-23	197	22-09-2022 to 22-09-2022
7	Workshop on Entrepreneurship, Attitude and Behaviour Development	185	23-09-2022 to 23-09-2022



8	Workshop on Problem Solving and Ideation	138	30-09-2022 to 30-09-2022
9	Workshop on Entrepreneurship and Innovation As Carrier Opportunity	185	11-10-2022 to 11-10-2022
10	Orientation Session of National education Policy 2020	150	04-02-2023 to 04-02-2022
11	World Creativity and Innovation day	95	21-04-2023 to 21-04-2023
12	Workshop on Intellectual Property Rights (IPR) and IP mangement for Startups	82	29-04-2023 to 29-04-2023
13	Workshop on CCTV installation & Maintenance	86	16-02-2023 to 16-02-2023
14	Building research capacities on understanding and researching gender and social reality	77	10-11-2022 to 21-11-2022
15	Printing Technology [Employment Opportunities]	113	11-03-2023 to 11-03-2023
16	Workshop on Techniques in Molecular Biology	60	14-02-2023 to 14-02-2023
17	A Ten-Day Faculty Development Program on English for Teachers	43	23-01-2023 to 01-02-2023
18	Workshop on Android app development	47	19-11-2022 to 22-11-2022
19	Management Skills in Interior Design	80	23-04-2023 to 23-04-2023
20	One day Workshop on Learn Physics Through Experiments	180	15-10-2022 to 15-10-2023
21	One Day Make -Up & Skin Care Workshop	20	16-01-2023 to 16-01-2023



22	7 days beekeeping program	25	13-03-2023 to 19-03-2023
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#### **Avishkar/ Research Competition for UG, PG and Ph.D. Student**

To inculcate the research interest in students, College organizing research competition for UG, PG and Ph.D every year, after this competition, selected students present research outcome at District level, University level and finally at State level. This year also successfully organized College Level Innovative Avishkar Project Competition for UG, PG and Ph.D students in which 197 students were participated and presented their research work and innovative ideas. This is worth mentioning that 10 students were selected for **University level Avishkar/ Research competition** and our two students got 2<sup>nd</sup> prize at State level.

**Table 1. List of students selected for University level Avishkar/ Research competition.**

Sr. No.	Name of the Participant	Faculty	Level
1.	Thakare Neha Sambhaji	Pune Science	PhD
2.	Bachhav Viraj Santosh	Pure Science	PG
3.	Viadya Yojana Narendra	Medicine and pharmacy	PG
4.	Kale Sneha Balasaheb	Medicine and pharmacy	PG
5.	Kamlakar Bhavesh Devkisan	Humanitis, Language and fine arts	PG
6.	Derle Mayur Ramdas	Commerce, Management & Law	PG
7.	Kawade Sankita Gotulal	Agriculture and animal husbandry	PG
8.	Dukale Vishakal Vilas	Agriculture and animal husbandry	UG
9.	Patel Bhavi Jagdish	Agriculture and animal husbandry	UG
10.	Jadhav Chandan Ramesh	Medicine and pharmacy	UG

**Table 2. List of students selected for state level Avishkar/ Research competition.**

Sr. No.	Name of the Participant	Faculty	Level
1.	Viadya Yojana Narendra	Medicine and pharmacy	PG

#### **Research grants/ fellowship**



Faculty members are always encouraged to apply for research grants of various funding apex agencies such as SPPU, Pune, UGC-New Delhi, CSIR-New Delhi, DST, DBT and ICMR. The College has received grants under UGC-Stride Scheme to undertake various research programmes in all Departments to support and mobilize the research activities at faster pace. Moreover, this grant has been utilized to undertake various SPPU, Pune and UGC accredited courses fro UG, PG as well as research students. Two faculty members of the Department of Chemistry has received major research funding from Council of Scientific and Industrial Research (CSIR)- New Delhi and Department of Science Technology (DST)- New Delhi of amount 22,55000/- and 4261039/- respectively. Moreover, KTHM College has received major funding from Maharashtra Pollution Control Board, Government of Maharashtra to check the ambient air quality of whole Nashik city from 1994. The college has also provided the seed money and incentives (UGC-Stride grant) to the faculties for their ongoing PhD research work and to participate in conference/workshops. In addition, Dr. Sambhaji Pagar, one of the faculty members of Department of Economics has been awarded the prestigious post-doctoral fellowship from Indian Council of Social Science Research (ICSSR). Following major research project grants and research fellowships received our faculties and Ph.D students this year.

1. Mahatma Jyotiba Phule Research Fellowship (MJPRF)
2. Council Of Scientific And Industrial Research (CSIR) CSIR Complex, Library Avenue, Pusa New Delhi
3. Department of Science and Technology (DST), New Delhi
4. Maharashtra Pollution Control Board (MPCB), Government of India
5. Babasaheb Ambedkar National Research Fellowship (BANRF)
6. Chhatrapati Shahu Maharaj Rashtriya sanshodhan Adhichatrvruti (CSMNRF)
7. National Scholarship for Shedule Caste (NSSC)
8. Biologists Workshop Travel Grant (BWTG)

S.N.	Name of the Project/ Endowments, Chairs	Name of the Principal Investigator/Co- investivator	Department	Year of Award	Scholarship Period in Year	Amount Sanctioned	Total Amount	Duration of the project
1	Major Research Project	Dr. Raju R Kale	Chemistry	01.08.2021	1 Year	2255000	2255000	3 Years





2	Major Research Project	Dr. Millind P Meshram	Chemistry	01.03.2023	1 Year	4200000	4200000	3 years
3	consultancy Research Project	Dr. Dnyaneshwar S.Khandbahale	Botany	01.06.1994	1 Year	2396924	2396924	1 Year
4	MJPRF	Mr. More Akshay Vijay	Botany	13/12/2022	6 Months	35960	215760	5 Years
5	MJPRF	Jayshri Haribhau Waghchaure	Chemistry	11/01/2022	12 Months	35960	431520	5 Years
6	MJPRF	Neha Sambhaji Thakare	Chemistry	11/01/2022	12 Months	35960	431520	5 Years
7	MJPRF	Sajeda Simran	Chemistry	11/01/2022	12 Months	35960	431520	5 Years
8	MJPRF	Vishal Pardeshi	Chemistry	11/01/2022	12 Months	35960	431520	5 Years
9	MJPRF	Rohini Thakare	Chemistry	11/01/2022	12 Months	35960	431520	5 Years
10	MJPRF	Bodke Prajakta	Environmental Science	13.12.2022	6 Months	35960	215760	5 Years
11	MJPRF	Vishakha Rajendra Wagh	Environmental Science	18/10/2021	12 Months	35960	431520	5 Years
12	MJPRF	Monali Derle	Chemistry	01/11/2022	7 Months	35960	359400	5 Years
13	MJPRF	Dipali Kaklij	Mathematics	01/11/2022	7 Months	35960	359400	5 Years
14	MJPRF	Sharad Ugale	Mathematics	01/11/2022	7 Months	35960	359400	5 Years
15	MJPRF	Kiran Sudam Bodke	Physics	01/11/2022	7 Months	35960	359400	5 Years
16	MJPRF	Sangale Priyanka Subhash	Zoology	13.12.2022	6 Months	35960	215760	5 Years
17	MJPRF	Rahane Vaishali Ashok	Zoology	13.12.2022	6 Months	35960	215760	5 Years



18	MJPRF	Mr. Amol Ramdas Handore	Zoology	18/10/2021	12 Months	35960	431520	5 Years
19	MJPRF	Ms. Hasina Ebrar Ansari	Zoology	18/10/2021	12 Months	35960	431520	5 Years
20	MJPRF	Mrs. Archana Bhaskar Borade	Marathi	13/12/2022	6 Months	35960	215760	5 Years
21	MJPRF	Mr. Somnath Dattatray Fugat	Marathi	17-01-2022	12 Months	35960	431520	5 Years
22	MJPRF	Mrs. Madhuri Haribhau Gavali	Marathi	13-12-2022	6 Months	35960	215760	5 Years
23	MJPRF	Mr. Shrikrushna Kalyan Rathod	Marathi	17-01-2022	12 Months	35960	431520	5 Years
24	MJPRF	Mr. Nandu Valiba Gavali	Marathi	13-12-2022	6 Months	35960	215760	5 Years
25	MJPRF	Mr. Rameshwar Bhikaji Ugale	Marathi	13-12-2022	6 Months	35960	215760	5 Years
26	MJPRF	Mr. Pankaj Keval Pawar	Marathi	17-01-2022	12 Months	35960	431520	5 Years
27	MJPRF	Ms Bochare Priyanka Bharat	Geography	13/12/2022	6 Months	35960	215760	5 Years
28	MJPRF	Mr. Bairagi Bhagwan Kumardas	Geography	13/12/2022	6 Months	35960	215760	5 Years
29	MJPRF	Mr. Gosavi Yogesh Dinkar	Geography	13/12/2022	6 Months	35960	215760	5 Years
30	MJPRF	Vy lavhare Dhanjay Bhawan	Geography	13.12.2022	6 Months	35960	215760	6 Months
31	MJPRF	Nikumbh Dhanashree Sambhaji	Geography	13/12/2022	6 Months	35960	215760	5 Years
32	MJPRF	Aher Sonali Karbhari	English	1.11.2022	7 Months	35960	251580	5 Years



33	MJPRF	Ms. Yuvradni Mewalal Mathure	Economics	13/12/2022	6 Months	35960	215760	5 Years
34	MJPRF	Mr. Jeevankumar Shamrao Wagh	Economics	13/12/2022	6 Months	35960	215760	5 Years
35	BANRF	Mr. Vishvanath Arjun Sathe	Marathi	16-02-2022	12 Months	31000	372000	3 Years
36	BANRF	Mr. Vinod Mahadu Kedare	Marathi	21-04-2023	1 Months	31000	31000	3 Years
37	BANRF	Sneha Jagannath Mahire	Environmental Science	20/07/2017	12 Months	31000	372000	3 Years
38	BANRF	Mr. Swapnil Prashant Garud	Marathi	30-06-2020	12 Months	31000	372000	3 Years
39	BANRF	Mrs. Ashwini Jivraj Nikam	Marathi	16-02-2022	12 Months	31000	372000	3 Years
40	BANRF	Ahire Kishor Bhaurao	English	16.02.2022	12 Months	31000	372000	3 Years
41	BANRF	Mr. Sunil Ambadas Ahire	Marathi	30-06-2020	12 Months	31000	372000	3 Years
42	CSIR-JRF	Ms. Pradnya Ahire	Chemistry	01/11/2020	12 Months	39960	479520	5 Years
43	CSIR	Mr. Ashok Chaudhari	Botany	15/03/2021	12 Months	35960	479520	5 Years
44	CSIR	Ms. Jadhav Sayali Ramesh	Botany	29/01/2020	12 Months	39960	479520	5 Years
45	CSIR	Mr. Thombare Vinod Babaji	Botany	07/04/2022	12 Months	35960	479520	5 Years
46	CSIR	Bhushan Aba Khairnar	Environmental Science	01/10/2020	12 Months	39960	479520	5 Years
47	CSIR	Mr. Pranil Jagdale	Zoology	23/03/2018	12 Months	40600	487200	5 Years



48	CSIR	Mr. Pratik Shinde	Zoology	01/10/2017	12 Months	40600	487200	5 Years
49	CSIR	Mrs. Sonali Subhash Harishchandre	Marathi	03-12-2022	06 Months	35960	215760	5 Years
50	CSIR	Mrs. Pooja Devidas Giri	Marathi	12-10-2020	12 Months	39960	479520	5 Years
51	CSIR	Ms. Swati Pal	Hindi	15/03/2017	03 Months	39960	119880	5 Years
52	CSIR	Richa Tiwari	English	01/01/2021	12 Months	35960	479520	5 Years
53	CSIR	Mr. Shubham Kacharu Gavhane	Geography	29/11/2019	12 Months	39960	479520	5 Years
54	CSIR	Mr. Tanaji Daulat Nimbekar	Geography	01-08-2020	12 Months	39960	479520	5 Years
55	CSMNRF	Gayke Rahul Chandrakant	Botany	11.09.2019	10 Months	35960	359600	5 Years
56	CSMNRF	Mr. Vikas Dilip Jadhav	Chemistry	01/01/2021	12 Months	35960	431520	5 Years
57	CSMNRF	Ms. Nutan Bhausahab Magar	Chemistry	02/04/2021	12 Months	35960	431520	5 Years
58	CSMNRF	Avinash Dnyadeo Aher	Chemistry	01/01/2021	12 Months	35960	431520	5 Years
59	CSMNRF	Amol Balasaheb Kadam	Environmental Science	11/09/2019	12 Months	39960	479520	5 Years
60	CSMNRF	Chetan Ashokrao Patil	Environmental Science	11/09/2019	12 Months	39960	479520	5 Years
61	CSMNRF	Gawade Vishal Eknath	Environmental Science	01.01.2022	12 Months	39960	479520	5 Years



62	CSMNRF	Chaitali Sanjay Borse	Environmental Science	01/01/2022	12 Months	39960	479520	5 Years
63	CSMNRF	Vishal Eknath Gawade	Physics	01/01/2022	12 Months	39960	479520	5 Years
64	CSMNRF	Vishal Gangadhar Shinde	Physics	01/01/2021	12 Months	35960	431520	5 Years
65	CSMNRF	Sagar Aapasaheb Nikam	Physics	01/01/2021	12 Months	35960	431520	5 Years
66	CSMNRF	Ms. Snehal Rohidas Katware	Zoology	11/09/2019	10 Months	39960	359600	5 Years
67	CSMNRF	Khirsagar Sagar Vishali Shivajirao	Commerce	01-07-2022	11 Months	35960	395560	5 Years
68	CSMNRF	Bhalerao Rasika Shrirang	Commerce	07.06.2022	12 Month	35960	431520	5 Years
69	CSMNRF	Patil Rakhi Madhukar	Commerce	07.06.2022	12 Month	35960	431520	5 Years
70	CSMNRF	Khandve Pallavi Panditrao	Commerce	01-07-2022	11 Months	35960	395560	5 Years
71	CSMNRF	Mrs. Shalini Sitaram Patil	Marathi	09-11-2019	12 Months	39960	431520	5 Years
72	CSMNRF	Mr.Nitin Goraskhnath Waman	Economics	20/07/2021	12 Months	35960	431520	5 Years
73	MJPRF	Deodhe Darshan Laxman	English	1.11.2022	7 Months	35940	251580	5 Years
74	CSMNRF	Ms.Supriya Kawale	Economics	19/09/2022	9 Months	35960	323640	5 Years
75	PostDoctoral Fellowship	Dr.Sambhaji Ramrao Pagar	Economics	20/02/2023	04 Months	35960	143840	2 Years



76	NSSC	Jadhav Priyanka Sanjay	Zoology	17.09.2019	12 Months	42920	515040	3 Years
77	BWTG	Mr. AZRAJ SATISH DAHIHANDE	Zoology	01.01.2023	1 Month	150000	150000	2 weeks
<b>Total grant Rs. 3,60,20,164</b>								

Anti-plagiarism software, Turnitin is provided to research scholars and faculties to carry out their research. In The institution underlines that effective research must have social implications. To inculcate and promote the research culture among students and faculties, many departments have successfully organized national conferences as well workshops, seminars and hands on training program for the faculties and research scholars to enhance the practical and research skill.

#### **List of available research instruments (added few important instruments only)**

The college has established dedicated Central Instrumentation Facility Center (CIFC) with support of UGC and DST-FIST scheme. The college has well equipped laboratories with modern instruments to carry out the research in various departments.

#### **Department of Botany**

<b>Sr.No.</b>	<b>Date of Purchase (as per stock register)</b>	<b>Name of Instrument</b>	<b>Cost in Rs.</b>	<b>Applications</b>
1.	12-02-2011	Air Sampler Syst.- Himedia	42734	Air Sampling
2.	12-02-2011	Microscope MLX-Bi Magnus Binocular- OlymPus	29500	For Research Microscopic Observations
3.	12-02-2011	Microscope Stero Zoom	43375	For Research Microscopic Observations
5.	05-03-2012	BQC 2055 Distillation APpt.	42560	Water Distillation



6.	05-03-2012	TTR-30 Tube Rotter	22176	Physiological Study of Plants
7	06-02-2013	Microscope Trinocular-Coslab	253575	For Research Microscopic Observations
8	13-08-2013	Colony Counter Digital-Kumar	32868	Mycological Colony Count
9	13-08-2013	Oven Laboratory (Labtype)	57618	Physiology and Biochemistry research
10	28-08-2013	Freezer Horizontal -Remi	98438	Physiology experiments
11	27-03-2015	Gel Electrophoresis Units and its Accessories	163575	Achieve rapid isolation and purification of genomic and plasmid DNA.
12	31-03-2015	Vaccum Pump- Each (BTI54)	8320	To <b>remove air and gas molecules</b> from a process including the food and beverage
13	31-03-2015	Constant Temp. water Bath 12x10x18" MsS MBiotech- One	27248	A water bath is a lab constant temperature equipment, providing heat source for varieties of devices that need heating.
14	31-03-2015	UV- Viewing Cabinet Longwave Sigma (Z169579)	9507	UV Viewing Cabinet is suitable for <b>inspecting thin-layer chromatograms and objects</b> in an undarkened room.
15	31-03-2015	Medical Microscope-One (VN-710027)	191700	They are commonly used in cell <b>biology and medical applications</b>
16	31-03-2015	Water Proof pH Tester Pen type SDF-1	6240	<b>Test a water</b> sample for acidity, alkalinity, and chlorine levels.



17	31-03-2015	Dissecting Microscope	33800	A dissecting microscope is <b>used to view three-dimensional objects and larger specimens</b> , with a maximum magnification of 100x.
18	22-06-2016	Mini Submarine Gel Electrophoresis Unit	8000	Achieve rapid isolation and purification of genomic and plasmid DNA
19	26-06-2016	Eon Pipette variable Vol-1 to 7	9000	Use to measure the sample in Micrograms
20	13-02-2016	Spencer's Advanced Rotary Microtome M.No.1010smt-005	39930.75	used to produce thin sections of specimens of different hardness in both routine and research applications in biology, medicine and industry.
21	11-06-2016	Herbarium Cabinets	248250	Herbarium and botany storage cabinets will preserve your museum's stored plant specimen collections.
22	11-06-2016	Projection Microscope camera Lucida	91357	A camera lucida is an optical device used as a drawing aid by artists and microscopists.
23	19-10-2018	14 Drawer Herbarium Cabinet	20202	Herbarium and botany storage cabinets will preserve your museum's stored plant specimen collections.
24	27-6-2019	UV-Spectrophotometer	504450	<b>used to measure how much a chemical substance absorbs light.</b>
25	19-06-2019	Rotary Shaker	40533	<b>fmixing and development of cultures, chemicals, solvents, assays, etc.</b> and for production of basic





				chemicals, pathological work, and various other applications.
26	19-06-2019	Centrifuge Machine	14994	A centrifuge is a laboratory device that is used <b>for the separation of fluids, gas or liquid, based on density</b>
27	19-06-2019	Digital Conductivity Meter	6459	<b>for measurement of Conductivity of aqueous solutions.</b>
28	19-06-2019	Cooling Centrifuge Machine	122130	used to <b>viruses, proteins, purify cells, proteins,</b> and various nucleic acids.
29	04-11-2020	Ultra sonicator Bath 1.5 lit. cap	15095	Heating the Sample and Chemicals
30	02-01-2021	Micro Centrifuge Machine	11424.18	used to <b>viruses, proteins, purify cells, proteins,</b> and various nucleic acids.
31	02-01-2021	Balance Precision 600 gm cap.	16567.20	balances are used to measure an object's mass to a very high degree of precision.
32	02-01-2021	Microvave Oven 23 lit.	11800	provide pinpoint temperature control and uniform temperatures throughout the heating process.
33	02-01-2021	Rotary Vaccum Evaportor with Vaccum pump 45 lit.	76228	use solvents to separate substances and samples from each other.
37	31-3-2023	Magnetic Stirrer (2)	27140	For experiments
38	31-3-2023	Medical Microscope (20)	156590	For experiments



Sr.No	Date of Purchase (as per stock register)	Name of Instrument	Cost in Rs.	Usage Applications
1.	10-02-2006	Fourier Transform Infrared Spectrophotometer (FT-IR) 8400S	4000000	Detection of Functional Groups, To study progress of the organic reactions, (P.G. projects of Chemistry, Biochemistry, Microbiology and Biotechnology Students) Organic Chemistry Research Student sample
2.	10-02-2006	Ultra-Violet Visible Spectrophotometer (UV-Visible) UV-Pharmspec-1700		Analysis of Absorbance's of sample to study degradation and other parameters
3.	10-02-2006	Gas Chromatography Mass Spectrophotometer (GCMS) GC-MS-QP 2010		Analysis of Volatile Compounds, Plant Extracts.(Research and P. G. students of Chemistry, Biotechnology, Microbiology and Biochemistry)
4.	10-02-2006	Atomic Absorption Spectrophotometer (AAS) AA6300		Analysis of heavy Metals from various samples and water Samples
5.	2012	High Performance Liquid Chromatography (HPLC) LC 2010CHT	1200000	Method Development of organic compounds, Analysis of biodegradation of sample (Research P. G. Students of Biotechnology, Microbiology and Biochemistry)
6.	2009	Spectrofluorophotometer (RF) Rf 5301	700000	Analysis of Fluorescent Properties of organic compounds and some metal compounds



				(Chemistry and Material Research Students)
7.	2010	Surface Area Analyzer BET	517000	Analysis of Surface area of Inorganic compounds (P. G. and Research Students of Physics, Electronic or Material Science)
8.	2014	Thermal Gravimetric Analyzer (DTA-TG) DTG-60	1296000	Analysis of Thermal stability of compounds (P. G. and Research students of Material Science)
9	21-01-2022	Gas sensing Unit	72216	Gas detection
10	28-03-2022	Fluorimeter Digital Systronics	78617.50	Analysis purpose
11	28-03-2022	Magnetic Stirrer with hot plate	14348	Mixing of Compound
12	28-03-2022	Digital Flame Photometer	58700	Analysis purpose
13	14/11/2022	Rotary Evaporator	282020	For practical and research purpose
14	31/03/2023	Contech balance	79915	For practical and research purpose

**Department of Electronic Science**

Sr.No.	Date of Purchase (as per stock register)	Name of Instrument	Cost in Rs.	Usage Applications
1	14-03-2005	20MHz Oscilloscope Sr.No.4092829, 4102843 4102842, 4102930, 4102881	<b>92500</b>	Laboratory practical purpose
2	14-03-2005	20 MHz Function Generator Sr.No.20030356, 20030471, 20030480, 20030475, 20030470	<b>42500</b>	Laboratory practical purpose



3	23-12-2005	Hall effect Setup DHE-21 along with Germanium Crystal Hall probe	<b>9900</b>	Laboratory practical purpose
4	23-12-2005	Resistivity of Semiconductor by four probe methods at different temperatures and determination of the band gap.	<b>44600</b>	Laboratory practical purpose
5.	11-12-2006	Sciencetech ST2502 Advanced Fiber optics trainer Dual channel & PC- PC communication facility	<b>27583</b>	Laboratory practical purpose
6.	13-02-2007	LCD Projector VPL-ES3 SSr.No. 3052543-8	<b>64990</b>	ICT Classroom Lecture Presentation
7.	12-02-2007	Programmable Logic Controller (PLC)	<b>97559</b>	T.Y.B.Sc. and M.Sc. Practical Purpose
8	24-03-2008	DSP Lab V.1,0 with Lab programming Tutor Development tools DSK6713	<b>50000</b>	M.Sc. Practical Purpose
9	04-07-2008	30 MHz Dual Trace Oscilloscope Sr.No7082441,07082443, 1 MHz Function Generator No7087528, 07087529	45775	Laboratory practical purpose
10	04-05-2008	Zenith Intel Pentium	252400	M.Sc. Practical Purpose
11	12-82-2009	Aplab Single output Regulated DC power Supply op 32V2A	40500	Laboratory practical purpose
12	22-08-2009	Aplab 25MHz Oscilloscope	83200	Laboratory practical purpose
13	31-08-2009	HCL Intel Pentium	180900	Laboratory practical purpose
14.	04-09-2009	1.Traffic light control system 2.Frequency generation using microcontroller 3.waveform Generator 4.ISp for 89C52 5.Haming code for error	76500	T.Y.B.Sc. and M.Sc. Practical Purpose



		detection & correction 6.ISP cable for 89C52 7.Seven segment display 8.Stepper motor interfacing NASM		
15	14-10-2010	-10 KVA online UPS -Excide Invaqeen 12V 90 AH Batteries	166000	Laboratory practical purpose
16	16-10-2010	HCL Intel Pentium(Total= <b>Qty.10</b> )	238100	M.Sc. Programming Practical Purpose
17	73-20-2011	25 MHZ Dynaxact Color Digital Storage Oscilloscope with Acc.	79380	Laboratory practical purpose
18.	18-07-2012	8051 Development Board (89C5189V51RD289552) -PIC Development Board -AVR Development Board	82000	T.Y.B.Sc. and M.Sc. Programming Practical Purpose
19.	26-03-2013	- e-Calisto frequency agile radio Spectrometer - 1 Cable RS-232 - 1 Power Supply 12 V - 1 Frontend Containing low noise preamplifier - 1 Power Supply 12 V preamplifier - 1 Connection coaxial cable with N connectors - 1 Handling and shipping with tracking code <b>Total of Spectrometer and Preamplifier</b>	<b>785\$</b>	e-Calisto: ISWI instrument array to observe solar radio bursts.
20	26-03-2013	-Measuring Positioner & Accessories -Measuring Receiver -Signal Generator SI-3006 Antena Analysis Software	299992	Antenna Practical
21	17-09-2014	Lumens Document Camera	150638	Presentations



23	03-03-2015	NVIS 187 PCB Etching Machine NVIS 188 PCB Drill Machine NVIS 189 Solderable lacquer Tank NVIS 190 PCB Designer Kit NVIS 191 PCB curing Machine With Chemical list	84471	For Making of PCB for M.Sc.I & M.Sc.II research projects
24	03-03-2015	NVIS 180 PCB Artwork film Maker NVIS 181 PCB Art work Table NVIS 182 PCB shearing Machine NVIS 183 Photoresist Dip Coating Machine NVIS 184 UV exposure Unit NVIS 185 Dye Tank NVIS 186 Development Tank	97174	For Making of PCB for M.Sc.I & M.Sc.II research projects
25	05-03-2015	Optical Fiber Communication-Dual Channel PC-PC Communication facility with experiments (2502)	23710	Fiber Optics Communication Practical
26.	11-03-2015	Gun Diodes Based Microwave	85860	Microwave applications
27	28-03-2015	Sensor Lab. Model No.2311	74580	Sensor Practical
28	28-03-2015	Assorted Sensors	51592	Sensor Practical
29	28-03-2015	Design Lab.	48887	Lab. Practical Purpose
30.	10 Jan.2019	PA wireless Microphone AAWM-520VL PA Mirophe HBM-50	6700	Departmental Programme, Seminar ,Workshops etc.
31	31-10-2020	DELL Computers(05)	171370	Lab. Practical Purpose
32	15-02-2021	Tripod DTR 450 LT, Web Camera, Head Phone With Mike, Dell USB Scroll Mouse	12750	Lab. Practical Purpose
33	31-10-2020	DELL Computers (Quantity-05)	171370	Lab. Practical Purpose



34	25-10-2021	Rasberry Pi kit with LED Switch, Temp Sensor LM35 and Photocell	57500	Lab. Practical Purpose
35	25-10-2021	Rasberry Pi module 3	15000	Lab. Practical Purpose
36	25-10-2021	Study of 3-bit or 4 bit Pulse Code Modulation Kit	52500	Lab. Practical Purpose
37	25-10-2021	Study of Frequency Division Multiplexing Kit	52500	Lab. Practical Purpose
38	25-10-2021	Time Division Multiplexing Kit	20000	Lab. Practical Purpose
39	25-10-2021	Zigbee Kit for Temperature Sensor application (Each set consisting Tx & Rx Kit)	20000	Lab. Practical Purpose
40	25-10-2021	Interfacing LED array to Arduino	6500	Lab. Practical Purpose
41	25-10-2021	Interfacing Keyboard to Arduino	7500	Lab. Practical Purpose
42	25-10-2021	Interfacing Sensor to Arduino	7500	Lab. Practical Purpose
43	25-10-2021	Interfacing Bluetooth to Arduino	7500	Lab. Practical Purpose
44	03-03-2022	AVR Microcontroller kit	44500	Lab. Practical Purpose
45	03-03-2022	PIC Microcontroller kit	59500	Lab. Practical Purpose
46	31-03-2022	HTC DM98 Multimeter	22950	Lab. Practical Purpose
47	31-03-2022	Htc Dc 3002 Single 0-30v-2a Linear Power Supply	42075	Lab. Practical Purpose
48	31-03-2022	Htc Fg 2002 Function Generator	41437	Lab. Practical Purpose
49	31-03-2022	Bread Board With PSupply	55250	Lab. Practical Purpose
50	20-07-2022	IC-741 (Operational Amplifier) (50)	2700	Regular lab and Practical's
51	14-12-2022	Arduino Uno, Motor Driver, Uno Board, SERVO motor wheels	1490	Regular Practicals MSc, and BSc.



52	14-12-2022	Atmega 32 Target PCB, 16X2LCD, ultrasonic module, LED Strip, load cell circuit 12 V Adapter, RFID circuit	5817	Regular Practicals MSc, and BSc
53	14-12-2022	Arduino Uno, Motor Driver, Gear motor, HC05 Bluetooth module 12V 5W solar panel	9805	Regular Practicals MSc, and BSc
54	14-12-2022	6V 60 rpm motor controller L sensor-298, HC 05,, propeller. BLDC motor	6661	Regular Practicals MSc, and BSc
55	14-12-2022	Motor Bread Board, CELL, CELL holder, Flame sensor Relay 5V DC Motor, Arduino Uno	2442	Regular Practicals MSc, and BSc
56	14-12-2022	Wheel Motor, SNAPPER, , Arduino Uno, Bluetooth, cable Battery, ESP-32	2586	Regular Practicals MSc, and BSc
57	19-12-2023	Arduino Uno ESP 32	2431	TY BSc project pupose
58	06-01-2023	IC4016, IC8038	3038	Regular Practicals MSc, and BSc
59	13-01-2023	Mechanical assembly for smart ploughing robo	4501	Regular Practicals MSc, and BSc

Software available in department (include software used in labs research labs language labs):

Sr. No.	Date of Purchase	Name	Cost in Rs.	Quantity	Usage Applications
2.	15-03-2010	Lab-View	217350	01	Circuit Simulation Software

### Department of Geography

Sr.No.	Date of Purchase	Name of Instrument	Cost is Rs.	Usage Applications
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Maratha Vidya Prasarak Samaj's

**KRT Arts, BH Commerce and AM Science College (KTHM), Nashik 422002**

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(College with Potential for Excellence (CPE), Best College Awarded by SPPU in 2004 & 2017, Reaccredited by NAAC with "A++" Grade (CGPA- 3.79), UGC STRIDE Receptionist College)



	(as per stock register)			
1.	13-04-2016	Automatic Weather station	165000	Measurements of weather elements
2.	13-04-2016	P.G. Streamer	150000	Remote sensing and image processing Software
3.	23-03-2016	Dumpy Level and Theodolite	444466	Surveying
4.	12-07-2017	Sony LCD Projector	29700	Presentation
5.	14-07-2017	Dell Optiplex Desktop	317000	GIS Course
6.	22-03-2017	Global Positioning System (GPS)	26672	Surveying
7.	07-09-2018	Auto Level-Sokkia	20945	Surveying in Geographical aspects

### Department of Physics

Sr.No.	Date of Purchase (as per stock register)	Name of Instrument	Cost in Rs.
1.	13-03-2015	1. He-Ne Laser 2. Advanced Spectrometer(03)	36560 57900
2.	29-07-2016	1.Scientech 30MHZ Oscilloscope(02) 2.Four Probe Method Scientech (01) 3.GigerMuller Method(01)	77634 37027 98350
3.	05-01-2017	HP 1005 All in one printer(2)	26500



4.	24-03-2017	1.Travelling Microscope(03) 2.Advanced Spectrometer(02) 3.Fabry-Perot Etalon 4.Frank-Hertz Experiment(01) 5.Stefans Constant Kit(01) 6.LCD Projector VPL DX220 (01) 7.Dual Trace Oscilloscope ( )	27387 43500 14448 87975 5304 35500 22185
6	13-07-2017	Dell Optiplex 3046 Desktop	317000
7	17-03-2018	Electrical Equipments for Lab (Light, Fan etc)	62893
9	13-06-2018	Electronic Components & Instruments	27466
10	13-06-2018	1. Sodium Light Source(02) 2. Red Diode laser with Power Supply. 3. Electron Spin Spectrometer 4. Co-ordinate Measuring Microscope 5. Newton's Ring Microscope & other experiments kits.	327101
11	30-07-2018	Lab Furniture	115404
14	20-03-2020	1.Spectral Tube Power Supply & Mount 2.Plank Constant Apparatus 3.Viscosity of liquid by rotating cylinder method 4.Michelson Interferometer Apparatus 5.Travelling Microscope 6.Solar Kit with Microameter(0-500ua)on board for 1V Characteristics. 7.Specific Heat of Graphite Apparatus	19209.46 22467.20 15887.52 39317.60 41724.80 27281.60 102707.20
15	2020-21	Wooden tables Plywood cupboard (12 in no.)	98332

**Department of Zoology**

Sr.No.	Date of	Name of Instrument	Cost in	Usage Applications
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	<b>Purchase (as per stock register)</b>	<b>( Quantity)</b>	<b>Rs.</b>	
1.	29-10-2009	Tissue processing unit	165125	Automatic Tissue processing unit
2.	19-07-2014	PCR Unit	240000	For research
3.	11-20-2015	Ultrasonic Probe sonicator	128000	For Maceration For solution mixture
4.	10-12-2015	Cooling Microcentrifuge	127800	Separation purpose
5.	31-03-2015	Deep Freezer	81810	Preservation purpose
6.	31-03-2015	Microphotography	82860	Imaging
7.	31-03-2015	Laminar Air Flow	81120	For research/ practical purpose
8.	20-02-2016	Metzer Biovision Medical Microscope	95000	For research/ practical purpose
9.	18-10-2016	Vis Spectrophotometer	59846	For research/ practical purpose
10.	21-10-2016	UV Vis Spectrophotometer	447750	For research/ practical purpose
11.	30-07-2020	Magnetic Stirrer (2)	35000	For research/ practical purpose
12.	30-07-2020	Vortex mixer (2)	31200	For research/ practical purpose
13.	31-07-2020	Vortex mixer (2)	31200	For research/ practical purpose



14.	30-07-2020	pH Metre(1)	10800	For research/ practical purpose
15.	30-07-2020	Variable type Power pack (1)	22000	For research/ practical purpose
16.	02-02-2021	Waste care composting tank Bio shredder and its accessories	208400	For Vermicomposting

**Department of Biotechnology**

Sr.No	Date of Purchase (as per stock register)	Name of Instrument	Cost in Rs.	UsageApplications
1.	31-03-2017	CO <sub>2</sub> Incubator	69200	To grow biological cell cultures
2.	30-01-2011	Fully Automated Fermentor (5 Ltr.)	900000	To carry out large scale fermentation
3.	31-03-2015	Inverted Microscope	109700	Observing living cells or organisms under natural conditions and for micromanipulations
4.	30-03-2016	Digital Microscope with Mega pixel camera	182891	Observing living cells or organisms
5.	28-03-2016	Gel Documentation Unit	270000	Used to separate mixtures of DNA RNA or proteins according to molecular size
6.	02-03-2016	High Speed Refrigerated Centrifuge (3000 rpm to 16000 rpm)	245700	separation of fluids gas or liquid based on density
7.	18-11-2009	Elisa Plate Reader	218790	Measure chemical biological or physical reactions properties and analytes



8.	15-03-2013	UV double beam Spectrophotometer	340313	Quantitative determination of different analytes
9.	22-02-2016	Sonicator(Ultrasonic processor)	125912	Cell lysis and homogenization
10.	30-03-2015	Immuno electrophoresis unit	12400	Studies of proteins in biological fluids
11.	31-03-2015	Vertical Gel Electrophoresis	21778	Separation of nucleic acids (DNA or RNA) and proteins based on their size
12.	28-11-2012	Homogenizer	15502	Blend chemical or biological samples. Lysing of cells to form one homogenous suspension
13.	30-03-2015	Mini Submarine Gel Electrophoresis	8000	Separation of nucleic acids (DNA or RNA) and proteins based on their size
14.	28-11-2012	Laminar Air Flow	140889	Provide aseptic environment
15.	31-03-2015	Laminar Air Flow	81000	Provide aseptic environment
16.	19-03-2013	Soxhlet Extraction Heating Mental Rotary Shaker (heavy duty) 25flask of 500ml	10698	Extraction of lipids and other compounds from a solid sample
17.	31-03-2017	Rotary Shaker (heavy duty) 25flask of 500ml	60000	Used to mix blend or agitate substances in a tube or flask
18.	2020-21	Thermistor 100 ohms	2730	Used as temperature sensors in Physics Practical



19	2020-21	Fridge	57190	To store chemicals and Bacterial cultures
20	2020-21	Digital Balance (129 gm capacity 1mg accuracy)	23930	To weigh chemicals
21	2020-21	Balance Precision 1000gm capacity	13159	To weigh chemicals
22	2020-21	Hot Air Oven (45Ltrs)	18868	It is used for dry heat sterilization of glassware
23	2020-21	Double beam UV-VIS spectrophotometer (8 Holder)	457368	Quantitative determination of different analytes
32	30-03-2023	pH Meter	17928	It measures acidity/alkalinity of a solution
33	30-03-2023	Laminar Air Flow	64740	Provide aseptic environment
34	30-03-2023	Auto sterilizer aid	20750	Autoserilizer Aid

**Department of Environmental Science**

Sr.No	Date of Purchase (as per stock register)	Name of Instrument	Cost in Rs.	Usage Applications
1.	10-02-2009	Western Refrigerator	18000	Its function is to maintain in a controlled environment (refrigerated space) various fluids and substances so that they are kept in good condition the lower the temperature the lower chemical and biological activity. To achieve this it is required that the internal temperature of the



				refrigerator be lower than the ambient temperature.
2.	26-12-2009	Cooling Incubator	75975	Cooling incubator is used to prevents samples or microorganisms from drying out during incubation
3.	26-12-2009	Voltage Stabilizer	10250	To provide constant voltage to a load even during voltage fluctuations
4.	10-03-2013	Sound Level Meter	15733	To monitor sound level noise pollution
5.	16-03-2013	Heavy Duty Rotary Shaker	27821	Mainly use for mixing of chemicals solvents solutions and are most suitable for shaking in Erlenmeyer flasks
6.	14-05-2013	Microprocessor Visible Spectrophotometer	59878	Microprocessor Spectrophotometer is a solid state microcontroller based instrument designed for quick and accurate spectrophotometric analysis of any concentration
7.	14-11-2013	Centrifuge Medico	6318	Used in various laboratories to separate fluids gases or liquids based on density
8.	31-02-2013	Digital Balance	14057	Used to measure solids liquids tissue etc.
9.	30-11-2013	Autoclave Vertical	56306	Used to decontaminate certain biological waste and sterilize media instruments and lab ware.
10	30-09-2014	Ultrasonicator Bath	15095	Used in the laboratory to disperse nanotubes into the polymer matrix.
11	20-05-2016	Global Positioning System	29166	Use GPS information for preparing accurate surveys and maps taking precise time measurements tracking position or location and for navigation
12	12-10-2017	pH Meter Digital and Conductivity Meter	20508	To measure pH and Electrical Conductivity from Sample

**Department of Mathematics**

Software available in department (include software used in labs research labs language labs):

Sr.No	Date of Purchase	Name	Cost in Rs.	Quantity	UsageApplications
1	30-Mar-2013	Casio Class Pad Graphing Calculators and Casio fx-CG-20 Software	283500	24	Research/ Practicals on Calculus Linear Algebra and Operations Research

**Department of Microbiology**

Sr.No.	Date of Purchase (as per stock register)	Name of Instrument	Cost in Rs.	Usage / Applications
1.	11-01-2021	Blood cell counter	286150	To obtain detailed CBC Reports
2.	01-12-2021	Microwave oven	7954	Microwave oven can safely be used in a microbiology laboratory for preparation of media.
3.	01-12-2021	Hemoglobinometer	15859.5	Hemoglobin meters are used for measuring hemoglobin and hematocrit levels in the whole blood.
4.	12-01-2021	Electronic digital Body weighing scale	1639.3	To measure weight in Kilograms
5.	18-02-2012	Vortex mixer	9906	Vortex Mixer Cyclo mixer
6.	18-02-2012	Heating Mantle	4000	Heating Mantle-500ml labile
7.	24-08-2012	Visible Spectrophotometer	89856	Visible Spectrophotometer
8.	18-02-2012	Colorimeter	18536	Digital colorimeter





9.	29-03-2013	Cooling Incubator	166868	Cooling Incubator.6 ltr.Temp.-5 °Cto 60°C
10.	30-03-2013	Phase contrast microscope assembly	89460	Phase contrast attachment curve type middle PC-4 with objectives 10x40x100x
11	31-03-2014	Vacuum pump portable	9387	Vacuum pump portable oil free
12	18-03-2015	Visible Spectrophotometer	97800	Single beam UV-vis Spectrophotometer
13	18-03-2015	Software	67200	Software for visible spectrophotometer
14	18-03-2015	UV Trans illuminator	24200	UV Trans illuminator for Gel viewing Size 20*20 cm
15	18-03-2015	Electrophoresis unit	8000	Mini submarine electrophoresis unit
16	31-03-2015	Microscope	67860	Binocular microscope with digital camera
17	31-03-2015	Oven	49400	Hot air oven with MS chamber to mark(each) (K1-03-05)
18	31-03-2015	Pipette Washer	15600	Pipette Washer (Kumar)
19.	31-03-2015	Digital weighing balance	28045	Digital weighing balance 0.1gm-6Kg. (Citizen)
20	31-03-2016	UV transilluminator Gel viewing	76500	UV transilluminator Gel viewing
21	31-03-2016	Document Visualizer Aver-version	29878	Document Visualizer Averversion
22	15-06-2016	Rotary vacuum Evaporator	150413	For Practical/ research purpose



23	15-06-2016	CHEMVAC vacuum pump chamber	73800	For Practical/ research purpose
30	31-03-2017	Colorimeter with built in set of 8 imported filters	8500	Filter 400420470500530 620660
31	31-03-2017	OHP with two Halogen bulb	10215	For Practical purpose
32	31-03-2016	Binocular Microscope vision 2000Hz	96659	All new model with halogen lamp illumination
33	31-03-2009	Autoclave Vericle size	28200	25x45 cm
34.	24-09-2014	Centrifuge Remi 300RPM	6990	For Practical/ research purpose
35	29-03-2013	Cooling Stabilizer	19190	For Practical/ research purpose
36.	25-03-2010	Micro centrifuge Remi	43686	For Practical/ research purpose
37.	31-03-2009	Laminar Air Flow	65578	For Practical/ research purpose
38	31-03-2009	Shaking Incubator	130882	For Practical/ research purpose
39	11-01-2021	Blood cell counter	286150	For Practical purpose
40	31-3-2023	Analytical Balance	139075	For weighing



### Awards and recognitions received for extension activities from government/ government recognized bodies

These research efforts led to the number of awards and recognitions received from government/ government recognized bodies during the year 2022-23 to our many faculties.

S.N.	Name of the Award/ recognition	Name of the Awarding government/ government recognised bodies
1	राष्ट्रीय शिक्षक गौराव पुरस्कार - Smt. Sonali Thakur	दर्पणकार बाळशास्त्री जांभेकर पत्रकार संघ, नाशिक
2	Best Paper Presenter: Amol Handore	Gokhale Education Societys N.B.Mehta Science College, Mumbai
3	Bhavi Patel	government recognised bodies
4	आदर्श शिक्षक गौराव पुरस्कार : Dr. P. V. Kotame	सार्वजनिक वाचनालय , नाशिक (सा.वा.ना. )
5	पंडित महावीर प्रसाद द्विवेदी पुरस्कार: स्वर्ण : Dr. P. V. Kotame	महाराष्ट्र राज्य हिंदी साहित्य अकादमी, सांस्कृतिक कार्य विभाग महाराष्ट्र शासन
6	The Makers of Nashik Award : Mrs Sapana Palekar	Dainik Bhaskar Group, Nashik, Maharashtra
7	Best Mentor in Avishkar Projects: Amol Handore	Savitribai Phule Pune University, Pune



**Atomic Absorption**



**Fourier Transform Infrared**



**High Performance Liquid**



**Gas Chromatography**



**Spectrofluorometer**



**Ultra-Violet Visible**



**Thermal Gravimetric**



**Fourier Transform**



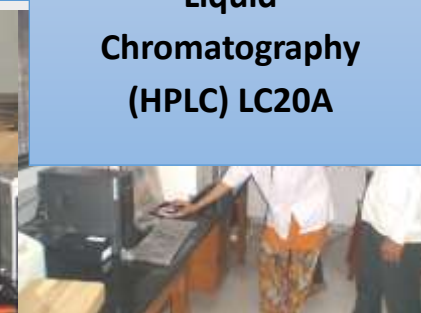
**High Performance  
Liquid  
Chromatography  
(HPLC) LC20A**



**Ultra-Violet Visible  
Spectrophotometer (UV-  
Visible) UV-Pharmspec-1800**



**High Performance Liquid  
Chromatography (HPLC)  
LC20A**



**Surface Area Analyzer  
BET**



Central Instrumentation Centre



Organic Chemistry Laboratory: 7



Analytical Chemistry Laboratory



Inorganic Chemistry Laboratory: 1 and 2

## 5. Evidence of Success:


Considering the socio-economic importance of research, college has inculcated the scientific temper and research culture among the faculties and students through the implementation of the practice. The college has witnessed far reaching outcome during the last few years in research activities. UGC-STRIDE Scheme, played pivotal role to reach upto grass-root level to solve the socio-economic problems of common man. Presently in the college, more than 50 faculty members are Ph. D. degree holders. The college has 14 Ph.D. and M. Phil. research centres affiliated to SPPU, Pune and 149 faculty members are recognized research guides/supervisors in various subjects and 209 students have completed/submitted a Ph. D. thesis. The college teachers have published 226 research papers in the peer reviewed national and international journals and filed 04 patents on their ongoing research. Many faculties have actively participated in various national and international conference., during last year 48 research papers have been presented in conferences /workshops/ symposiums. In addition to this, faculties of our college have contributed chapters and also published books, which comes




around 50. The Central Instrumentation Facility Centre (CIFC), under the DST-FIST scheme, has modern sophisticated analytical instruments such as HPLC (High Performance Liquid Chromatography), GC (Gas Chromatography), AAS (Atomic Absorption Spectrophotometer), IR-Spectrophotometer, UV-spectrophotometer. Financial supports are provided to the faculty for attending Seminars/Conferences/Workshops etc. The college has established 28 linkages and MoUs for research, student on-the-job training. In last academic year, 48 faculties and students have received national and international prestigious awards for their contribution in teaching and research. Faculties have received 72,55,000/ lacs funds for their research from various funding agencies. The college has organized more than 22 workshops/seminars on research methodology, intellectual property rights and about entrepreneurship for the faculties and students.

#### 6. Problems Encountered and Resources Required:

- ✚ To encourage faculties to publish research articles in high impact factor journals.
- ✚ Research laboratory facilities of a few Departments need to be improvised.
- ✚ College has the capacity to conduct sustainable research projects in thrust research area and some faculties are already have projects from CSIR-New Deslhi and DST-New Delhi. However, dearth of funds for research projects from BCUD, S. P. Pune University, Pune, UGC, CSIR, DST, DBT and ICMR etc. is still stumbling block to promote and excel research.
- ✚ Specialized laboratories catering to the needs of disabled students must be setup encourage them to pursue research.

  
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 Principal  
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 A. M. Science College, Nashik