



Submission of Progress Report (2014-15)



STAR College Scheme

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086

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1. **Name of the College:** R J College of Arts, Science and Commerce, Ghatkopar (W),
Mumbai 400 086.

2. **Name of Departmental Co ordinator, Designation, Address, Phone and fax nos. email:**

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Advisory committee to be formed already communicated to DBT.



STAR College Scheme

PROGRESS REPORT

2014-15

Department of Botany

by

Hindi Vidya Prachar Samiti's

RAMNIRANJAN JHUNJHUNWALA COLLEGE

OF ARTS, SCIENCE & COMMERCE

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to

STAR COLLEGE SCHEME, HRD Division

Department of Biotechnology, Ministry of Science & Technology

Block-2, 6th to 8th Floor, CGO Complex, Lodi road, New Delhi-110003.

Progress Report by Department of Botany

A) Student Activities

i) Dissertation , projects and experiments

F.Y.B.Sc. students performed the following: (Students offering Chemistry, Botany, Zoology, Physics and Biotechnology Total number of students who participated = 267).

- To study the effect of change of color of anthocyanin pigment depending on the pH of the medium. Students studied the applications of this experiment so as to use this natural pigment as a food colorant, as a pH indicator and to check the adulteration of milk, especially with soda-bicarb.
- Students collected leaf specimens and were taught the method of making herbarium, to enhance the observation prowess of specimens in nature. They studied leaf morphology of the leaf specimens.
- A bio quiz was conducted for F.Y. students to teach them the subject through games.

S.Y.B.Sc. (Students offering Chemistry, Botany and Zoology, Total students who participated = 219)

- Studied DNA isolation and estimation from various plants.
- A survey was conducted to identify the body types as per Ayurveda by filling a questionnaire on Prakruti nidaan.
- Preparation of media for bacterial and fungal cultures and sterilization.

PROJECTS:

- Pharmacognosical studies of *Moringa* : Mr. Ankit Yadav/ Mr. Vijay Gupta/ Ms. Namrata Jaiswal
- Pollen study of flowers from RJC campus by acetolysis method: Mr. Ankit Yadav/ Mr. Vijay Gupta/ Ms. Namrata Jaiswal
- Permanent slide preparation and double staining : Mr. Ankit Yadav/ Mr. Vijay Gupta
- Students did the following projects and displayed them in “BOTANICA” held on 11th December, 2014. This helped them learn to work in a team, take initiative, hone their communication skills, learn the subject through project based learning. The “Botanica” was visited by students of Arts, Science and Commerce faculty. In addition students of IXth and Xth standard of five different schools visited and interacted with the students who presented these projects.

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| S.No | Title of the Project | Names of the students |
|------|--|--|
| 1. | Terrariums and Bottle Gardens (Students collected bottles from scrap dealers, homes, pickle jars and other containers). Learnt the technique of profiling soil in the containers, decorating and selected plants suitable for the containers, students also showcased a herb garden using soft drink plastic bottles to spread the message of organic food and recycling plastic) | Ganesh Singh Rajpurohit, Royston Rogers, Siddique Rafeeq, Shaikh Alvina, Sayyad Rukhsar, Shaikh Aribah, Singh Soni, Raghuvanshi Rakhi, Raorane Snehal, Shukla Govind, Sharma Rishabh, Shinde Tushar. |
| 2. | Genetically modified food (Students prepared charts and models to explain various transformation techniques and explained few crops which have been genetically modified) | Jadhav Sagar, Kedare Meghna, Jadhav Kajal, Jaiswar Shushma, Khan Rukhsar, Aditya K., Gupta Nikhil, Jaiswal Shweta. |
| 3 | Tea a multipurpose beverage (She explained about the various advantages of tea as a beverage as a stimulant and relaxant along with its antioxidant properties). | Namrata Jaiswal |
| 4 | Grandma's Pouch (Students displayed plants/product used in culinary and in age old remedies like ginger, garlic, coriander, lemon, turmeric, pepper, fennel, cumin, cinnamon etc) | Manali Torne, Prachi Kamble, Poornima Khutal, Farheen Khan, Tarannum Khan, Rupam Pandey, Amreen Khan, Khan Sarah, Araaha Lokhande, Sachin Maurya. |
| 5 | Pteridophytes & Gymnosperms (Students displayed pteridophytes like Equisetum, Nephrolepis, Adiantum, Pteris, Marsilea and Gymnosperms like cycas, Zamia, Thuja, Juniperus. They also displayed products like resin, turpentine, | Singh Vinit, Sawant Ketki, Shirkar Nikita, Rawat Pinky, Singh Vishal, Salunkhe Ashwini, Rajbhar Rashmi, Shaikh Hooda, Sahani Richa, Singh Shivam, Shukla Vijay. |

| | | |
|-----------|--|--|
| | pine nuts etc. They explained about the significance of these group of plants and emphasised on their economic importance) | |
| 6 | Algae (Specimens to explain range of thallus in algae were arranged under the microscope and macroscopic algae were displayed under a lens. Students explain the economic importance of algae viz. primary producers, food , fodder, diatomaceous earth, biofuel) | Gupta Ashish, Jaiswar Neha, Gupta Vijay, Gupta Sangeeta, Gupta Aarti, Godbole Aishwarya, Hindlekar Akshay, Pooja Jadhav. |
| 7 | Nutraceuticals (Explained about health food and dietary supplements which bridge the gap between food and medicine) They also showcased products from companies like Dabur, Himalayas, Zandu etc. | Pujari Tejas, Pal Reena, Nagar Pooja, Pachakar Swati, Fateema M., Pathak Jyoti, Patil Harshada, Pawaskar Siiddhesh, Panchal Shrutika, Parmar Nalini, Patel Vijay, Patel Arvind. |
| 8 | Land scape Gardening and Bonsai (Model of a landscape garden was made by the students. Group of student taught the technique of making a Bonsai and showcased some specimens) | Yadav Renu, Yadav Shweta, Waghmare Divya, Santhose Sandhya, Singh Ayushi, Singh Dipika, Surve Afiya, Singh Priya, Turbhekar Ankita, Sawant Surabhi, Verma Meenakshi, Yadav Ankit, Vaz Candida. |
| 9 | Major Forest Products (Students displayed major and minor forest products along with their sources and made the visitors realise the importance of forest) | Dwivedi Divya, Bahiram Rupali, Chavan Ankita, Dubey Neelam, Correia Kimberly, Anthwal Ritika, Chudhary Uzma, Dubey Vishal, Shaikh Umar, Chudhary Mauzhim, Ansari Uzair |
| 10 | Genetic Variants in <i>Mirabilis jalapa</i> with white, pink, red, yellow flowers and also same plant with two different flower colour and explained the genetic basis | Ms Vaz Candida |
| 11 | Plants in Mythology (displayed Lotus, Banyan sapling , Peepal sapling, Tulsi, | Ankit Gupta |

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| | | |
|-----------|---|---|
| | parijat and the student narrated stories from Indian Mythology) | |
| 12 | Fungi (Students displayed microscopic and macroscopic fungi and explained about the beneficial uses and diseases caused by fungi) | Rahim Reshma, Yadav Kavita, Verma Anjani, Waghmare Diksha, Wagh Nitin, Yadav Rohit, Vishwakarma Mala, Vishwakarma Shiva, Tripathi Shivam, Syed Shahista, Singh Happy, Singh Diksha. |
| 13 | Careers in Botany (Students conducted aptitude test, awareness opportunities like research, teaching, plant taxonomist, Forest services, Civil services were explained. Students also explained about the various employability skills) | Chaudhry Niraj, Chavan Pooja, Brid Shruti, Dabge Ashish, Chaudhary Kavita, Chaudhary Soeba, Ansari Tariq, Ghodekar Priyanka, Dhobale Shruti, Gaonkar Pranali, Dawkhar Nilam, Shrikrishna Y. |

T.Y.B.Sc (Botany Major, Number of students who participated were 38)

Students prepared projects and models on various environment based topics.

| S.No. | Title of the Project | Names of the students |
|----------|------------------------|---|
| 1 | Water Sample Analysis | Priyanka Khillare, Neelam Maurya, Priya Pandey, Nidhi Pathak, Anjani Prajapati |
| 2 | Solar Energy | Ansari Noorjahan, Ansari Anam, Supriya Raulo, Priya Sonawane, Priya Yadav, Rohit Yadav |
| 3 | Mangroves | Saloni Goradia, Manthan Naik, Priya Singh, Aradhana Singh, Shweta Singh |
| 4 | Solid Waste Management | Ankita Kalgutkar, Usha Rajbhar, Shweta Singh, Aakash Singh, Jyoti Vishwakarma, Roshan Yadav |
| 5 | Sewage Treatment Plant | Sayed Nahid, Nagma Pathan, Neha Yadav, Farzana Khan |
| 6 | Green Buildings | Sayed Sadia, Ruhi Naik, Yogesh Wayal, Alpesh Wayal, Roshan Teli, Shaikh Hassan, Dinesh Chavan |
| 7 | Irrigation | Sayali Jori, Khan Tahura, Pravin Pal, Netali Parkar, Vivek Palkar |

- They were given hands on training in Plant tissue culture techniques which covered sterilization, inoculation etc.
- Carried out experiments to study Iodine number from variety of oil samples and commented on the level of saturation of oil.

Training Imparted to Students of other Colleges

1. Ms Tejaswini Mody IISER Mohali, did her project in Plant tissue culture and also learnt basics of Plant sciences from 10th December, 2014 to 3rd January, 2015.

ii) Visits to Research Institutes/Industries

FYBSc

- Students were taken to Jijamata Udyan, Byculla along with faculty members of Zoology Department to study the flora and fauna. (Inter-departmental activity).

SYBSc

- Visit to Hiranandani gardens, Powai to study Landscape designing and ornamental plants.
- Visit to Mahabaleshwar to study the flora and fauna, phyto-geography of the region. During their visit they conducted a project to study plant community by Quadrat method. They also visited Gerwa Kendra, wheat rust research station to study the spread, control and resistance of hybrid wheat varieties against *Puccinia graminis tritici*.
- They visited Mapro industries to study Post harvest technology like Jam, Jelly and syrups.
- A visit to Madhusagar expanded their knowledge about honeybee rearing and collection of honey from different varieties of plant species and their medicinal value.
- Visit to Vanashakti, an NGO working towards protection of Mangroves, under Mangrove awareness program (MAP). Students studied coastal biodiversity and human impact on the same.
- Students were encouraged to attend Indian Science Congress, held at Kalina campus of Mumbai University in January 2015.

TYBSc

- Students visited Kaas plateau, UNESCO world heritage site at Satara, Maharashtra to study the endangered and vulnerable flora.
- Students visited Mahabaleshwar to study Monsoon flora and phyto-geography of the region.

iii) Summer training

The program was conducted for SYBSc from 6th April to 11th April 2015

Following sessions were conducted during the program

Microbiology- Students were trained in preparation and sterilization of media and pouring.

They studied the aero micro and myco flora and Gram staining.

- Bioinformatics: Students were given hands on training on computer to study biological data bases, their structures and analysis with the help of programs like SPDBV, Rasmol, etc.
- Biostatistics: Students solved problems based on Co-efficient of correlation and significance tests and studied their practical application in Biological sciences.
- Biochemistry: Students studied making solutions with Normality, Molarity, specific gravity, v/v, w/w, w/v and Percentage. They were also given hands on training on working of colorimeter to study lambda max and Beer – Lambert’s law.
- Tree Walk to BPT Gardens: BPT Garden, also known as Sagar Upavan, is located at Colaba in the premises of Mumbai Port Trust. The students were introduced to a variety of flora and fauna, the relationship between a number of flowering plants and their pollinators was observed and a number of medicinal herbs and their importance were studied. At the same time a few morning walkers in the garden interacted with the students and teachers. The students later made a report on the plants studied by them.

B) Faculty

a) Name of the Department: Botany

b) List of Internal faculty trained for skill improvement

- Dr Anil Avhad completed one day training on Trimble handheld GPS organised by Aimil Ltd Mumbai on 26th August 2014. Also attended a six days course in “Research Methodology” arranged by Academic staff college in October 2014
- Short term course in research Methodology co-ordinated by Dr Himanshu Dawda
- Dr(Mrs) M K Date attended training in Electron microscopy in IIT, Powai.
- Dr (Mrs) V.V.Kelkar attended a refresher course “New trends in Biosciences” in December 2014
- Hands on training given to the all faculty members on new instruments purchased under DBT STAR College scheme – Flame Photometer, UV Visible spectrophotometer and Digital USB microscope.

c) Awareness generation program/exhibition/seminars, training programmes etc

- BOTANICA: An exhibition of plants and projects in Botany for school and college students from the vicinity in the month of December 2014.
- A workshop for Bio-jewellery was organized on 31st July 2014. Students were taught how to make bio jewelerry using dried seeds, fruits, flowers. The resource persons were by Dr (Mrs) Mrunalini Date and Dr. Anil Avhad. Students were taught techniques to dry plant material and how they can be crafted into eco friendly Jewellery. They were also taught to do the costing so that in future they can have their own business. These students participated and won several prizes in intercollegiate competitions.
- College also hosted its first **Intercollegiate Competition in Bio-jewellery** on 11th December 2014 in the Department of Botany. 83 teams from 10 different colleges (Ruia, MD college, Panvel college, CKT college, Mithibai college, Kirti college, CHM college, Rizvi college, Maharashtra college and RJ college) of Mumbai University participated in the event.
- An Intercollegiate Elocution competition on topics related to various environmental issues was conducted under the aegis of “**Dr D V Amonkar memorial competition**” About 50 students from ten colleges participated.
- “**His-Tree**” a walk conducted by Botany Department in association with History Department for all faculty members of college through the Fort region of South Mumbai in April 2015 to appreciate and learn various architectural structures and trees planted during British era.
- Dr(Mrs)M K Date conducted a session and gave hands on training to students on the topic “Flower arrangement”
- Dr Usha Mukundan conducted workshop for college teachers on how to write a research proposal and created awareness about the various schemes available for financial assistance from Department of Science and Technology and Department of Biotechnology Ministry of Science and Technology, Government of India.

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C) Guest Faculty Invited

| Guest Name | Designation | Topic | Date/ Duration | Host Department |
|----------------------|-------------------------------------|---|---------------------------------------|-----------------|
| Dr Priya Chatterji | Merck India | IPR | 9 th August, 2014 | Botany |
| Mr. Nagesh Pai | Consultant | Personality development | 11 th April 2015 1 hour | Botany |
| Ms Mugdha Ambatkar | Consultant | Nano technology | 19 th June 2015 | Botany |
| Mrs Jyoti Dakshikar | Consultant | Ikebana | January 2015 | Botany |
| Dr T G Gopalkrishnan | Retd. BARC Scientist | RAPD-molecular marker assisted breeding | December 2014 | Botany |
| Mr Ranjan Karulkar | Horticulturist, Hiranandani Gardens | Careers in Horticulture | August 2014 | Botany |
| Dr Patel | Skin specialist | Herbal cosmetics and Skin care | December 2014 | Botany |

D) List of New

i) Techniques and practicals

- Double staining technique using Toluidine blue
- Micrometry to measure the length and breadth of fibre and stomata
- Use of Digital USB Microscope for practicals

ii) Demonstration

- Immobilization of enzymes using *Luffa* species
- Extraction of essential oils using Soxhlet apparatus and Clavenger

iii) Minor Research Projects

- Tree census and effective CO₂ sequestration at N ward BMC Mumbai – Dr Anil Avhad
- Study of homology pattern of phytotoxic Ricin in some plants - Dr (Mrs) V V Kelkar (2014)
- Phytoremediation by using *Marsilea* – Dr D B Singh (Nov 2014)

iv) Inter departmental activities

- Nature Photography competition for all undergraduate students of RJC

- “His-Tree” a walk conducted by Botany Department in association with History Department for all faculty members of college through the Fort region of South Mumbai in April 2015 to highlight various architectural structures and trees planted during British era.

Impact of the DBT Star College Scheme:

- Greater interaction and brain storming sessions among students and teachers.
- Improvement of Skills like communication, team work among the students.
- Teachers involved in method development for new practicals.
- Greater involvement of students in project based learning.

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DBT STAR COLLEGE SCHEME BOTANICA/ INTERCOLLEGIATE COMPETITION



Botonica Inauguration –August 2014



D. V. Amonkar Memorial Elocution - August 2014



Botonica Exhibition Inauguration – Dec 14



School Students visiting Botonica Exhibition



Skincare awareness campaign during Botonica



Winners at Inter collegiate competition

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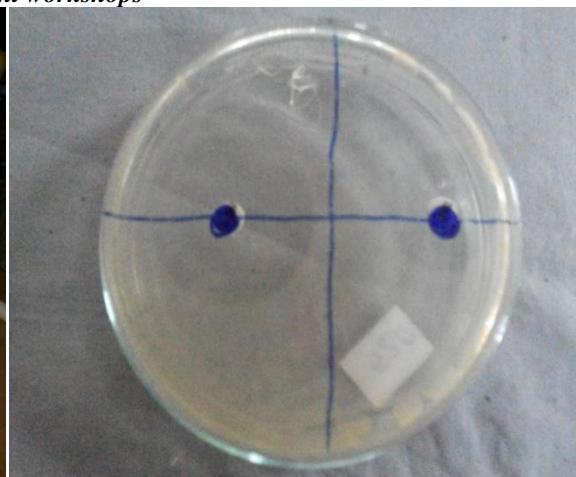
WORKSHOPS/ EXPERIMENTS/VISITS



Flower arrangement workshops



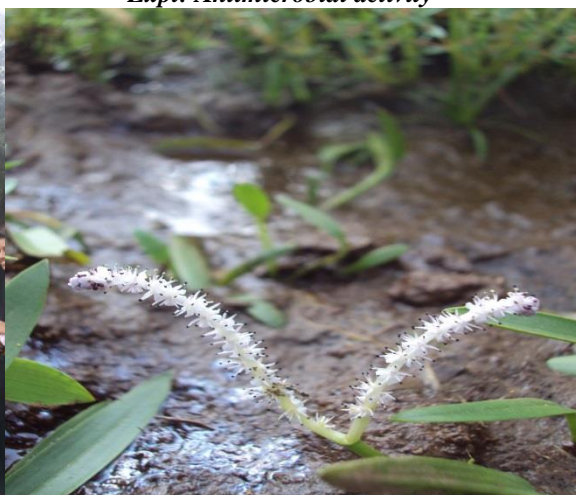
Expt: Anthocyanin as pH indicator



Expt: Antimicrobial activity



Visit to Hirandani gardens, Powai.



Visit to Kaas and Mahabaleshwar



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2014-15

Department of Zoology

by

Hindi Vidya Prachar Samiti's

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OF ARTS, SCIENCE & COMMERCE

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Department of Biotechnology, Ministry of Science & Technology

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Progress Report by Department of Zoology

A) Student activities:

❖ **Name of the Course:**

F.Y.B.Sc (270) ., S.Y.B.Sc (109)., T.Y.B.Sc (42).,(Undergraduate courses)

❖ **Dissertation/Projects/participation**

- T.Y.B.Sc students undertook project “Swachh Lab Abhyan” in the month of December 2014 with an objective to understand Good Laboratory Practices and the maintenance procedures for the instruments..
- T.Y.B.Sc students participated in the “Thalassemia diagnosis program’ and ‘Clean beach movement’ organized by NSS unit of the College.
- S.Y.B.Sc students carried out a literature survey on various topics such as Aquarium fishes and their maintenance, Lifestyle diseases, Personal and Social Hygiene, etc., and submitted a report based on their findings.

These projects awakened the responsibilities towards the society, communication and leadership skills, and also gave an opportunity of self-learning to the students.

❖ **Visits to Research Institutes/Industries/Excursions:**

1. F.Y.B.Sc students visited Zoo at Veer Jijamata Udhyan, Byculla in the month of December to study the habitats, morphology and distribution of animals.
2. S.Y.B.Sc students visited rocky and sandy beaches of Alibag on 27th Jan 2014. They studied and submitted a report on the biodiversity found in this shore.
3. T.Y.B.Sc students had been for excursion to Bandhawgarh and Jabalpur from 8th to 12th Jan 2015. The students could study wildlife in their natural habitats.
4. T.Y.B.Sc, S.Y.B.Sc students had been for one day trip to Jumapatti, Neral on 9.08.2014 to experience natural ecosystem and biodiversity.

These visits familiarized the students with the field skills as well as the skill of reporting the findings.

❖ **Summer Training:**

A lecture and training on ‘Good Laboratory Practices and laboratory Safety’ was conducted by Dr. P.G.Kale for T.Y.B.Sc students on 10th June 2015.

Two day training in ‘Basic laboratory skills and hands on training on instrumentation’ was conducted for T.Y.B.Sc students by Dr. (Mrs). J.A. Bhagwat on 12th and 13th of June 2015.

These activities helped the students in inculcating laboratory discipline and skills required to handle various laboratory instruments.

B) Faculty:

❖ **Name of the Department: Zoology**

❖ **List of Internal Faculty trained for Skill Improvement:**

- Dr. Janhavi Bhagwat underwent a three day training on CAMAG HPTLC system at CAMAG Switzerland recognized, Applications Research Laboratory, Anchorage, from 1-4-2015 to 3-4-2015.
- Mrs. Sanika Gupte took the training from Agharkar Research Institute in culturing Hydra in lab conditions on 2nd June 2015.

❖ **Awareness generation programs / exhibitions/ seminars, training programmes etc. for teachers/students of other colleges/ students.**

Department organized awareness generation and exhibit event under the banner of “Zoo-Fest” for F.Y, S.Y and T.Y.B. Sc. students. Students and teachers from various schools visited the exhibits.

‘Zoo-Fest’ gave vent to the energy and brought out artistic skills and imaginations of students, besides giving them a sense of achievement and confidence.

C) Guest Faculty Invited

Guest Faculty Invited by Different Participating Departments:

| Sr. no | Name of the guest faculty | Designation | Host Institute | Title of the lecture | Dates | Duration of visit |
|---------------|----------------------------------|---------------------------|-----------------------|--|--------------|--------------------------|
| 1 | Dr. Rajendran Gopalan | Assistant Professor, | Bradford University | Opportunities abroad | 28.07.14 | 2hr |
| 2 | Dr.AmitaValmiki | Head, Dept. Of Philosophy | R.J college | <i>Environmental Ethics and Religion</i> | 13.08.14 | 1 hr |

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| | | | | | | |
|---|---------------------|--|-----------------------|--|----------|-------|
| 3 | Mrs.Ashwini Jadhav | Assistant manager | Geochemlab Kanjurmarg | G.L.P. for T.Y.B.Sc students of Zoology and Botany | 11.06.15 | 2 hrs |
| A six day workshop was organized for non-teaching staff from various departments | | | | | | |
| 1 | Mr. Anil Hardikar | Media and Event Manager | Free Lancer | Communication Management | 15.06.15 | 2hrs |
| 2 | Mr. Santosh Thombre | Head, safety health and environment. | Cipla | Safety mgt | 16.06.15 | 2hrs |
| 3 | Mr. Amol Joshi | Professional Pranic healer | Own Clinic | Psyche mgt. | 17.06.15 | 2hrs |
| 4 | Dr. R. P. Athalye | Vice Principal and Associate Professor | Bandodkar College. | Health & Stress Management | 18.06.15 | 2hrs |
| 5 | Dr. Prasad Karnik | Director | Sleep institute | Sleep Management | 26.06.15 | 2hrs |
| 6 | Dr. P. G. Kale | Head, Dept of Zoology | R. J. College | Diet Management | 27.06.15 | 2hrs |

D) List of New

Techniques/Practicals/Demonstrations/Minor Research Projects/Inter-departmental Activities introduced by each Participating Department;

The following practicals were conducted for the undergraduate classes under the DBT star college scheme;

1. Identification of Different Sugars using TLC- F.Y.B.Sc
2. Culture of *Paramoecium*- F.Y.B.Sc
3. Observation of Succession of Microzoons in Stagnant Pond Water- F.Y.B.Sc
4. Estimation of Proteins, lipids from different milk samples- S.Y.B.Sc
5. Detection of adulterants from milk sample brought by students- S.Y.B.Sc
6. PAGE- electrophoresis of plasma samples from different patients- T.Y.B.Sc
7. Trypsinization and viable count of cells-T.Y.B.Sc.

These extension practicals gave them an insight into preparatory prerequisites to various experiments and also into applications of the studies.

The Minor Research Projects was awarded to the following faculty members;

- i. Mr. Deepak Poojary completed the Mumbai University Minor Research Project titled “Effect of construction waste dumping on ulhavea river estuary report submitted in May 2014.
- ii. Dr. (Mrs).Janhavi Bhagwat received a UGC Minor research project Grant of 2,40,000/-in Zoology for a period from 2014-2016.
- iii. Dr. (Mrs) Geeta Joshi received a UGC Minor research project Grant of 2.35 Lakhs on “Improving management and trade of ornamental fish keeping by early diagnosis and treatment of diseases in 2015.

• Impact of DBT Support (5 Salient Achievements)

- ❖ Increased enthusiasm among students for performing new experiments
- ❖ Improved facilities for the students

ACTIVITIES OF T.Y.B.Sc- POSTER PRESENTATION

| Sr.No. | Name of the Students | Project Title |
|--------|-------------------------|---|
| 1 | Deepika N. Bhandre | Awareness of Ebola virus |
| 2 | Priyanka S .Barge | |
| 3 | Priyankapatil | |
| 4 | Mamta s. yadav | |
| 5 | GrishmaParadkar | |
| 1 | RituB .singh | Hibernation (Arctic ground squirrel hibernation cycle) |
| 2 | Shabiha khan | |
| 3 | Anam khan | |
| 4 | Nikhatshaikh | |
| 1 | Rituja Shankar karande | Excretory system of humans |
| 2 | Pranitamchandramagar | |
| 3 | Priyankchampaklalmaurya | |
| 4 | SaumyaShriprakashmishra | |
| 1 | Beauty Bhardwaj | Dengue |
| 2 | KirtiDarade | |

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| | | |
|---|-------------------------------|--|
| 3 | Komaltemkar | |
| 1 | Ravindravishvakarma | Zoopharmacognosy |
| 2 | Rajusharma | |
| 3 | Nileshmishra | |
| 4 | Sagarmandal | |
| 5 | Santoshyadav | |
| 1 | Vanita joseph | Radiations |
| 2 | AshvaniGurav | |
| 3 | Pratibhajagtap | |
| 4 | Prajaktakamble | |
| 5 | Manaligulekar | |
| 6 | Aradhanagupta | |
| 1 | Aqsa Shamsi ,Kajalupadhyay | Food toxicity |
| 2 | Dipalipawar | |
| 3 | Kishorijadhav | |
| 4 | Noor mohammadi | |
| 5 | RajputChetna | |
| 1 | AishwaryaKatkar,Janhnavi more | Effects of smoking and alcohol in pregnancy |
| 2 | VidyaMudaliyar | |
| 3 | SayaliMajalkar | |
| 4 | AshwiniGhadge | |
| 5 | SwapnaliBansode | |
| 1 | Abhasingh | Gut bacteria (forgotten bacteria) |
| 2 | Anjali chaturvedi | |
| 3 | Nidhisingh | |
| 4 | Poojasingh | |
| 5 | Shashikalasingh | |
| 1 | ShaikhAfifa | Haematology |
| 2 | Khan tuba | |
| 3 | Khan shabnam | |
| 4 | ChaudharyTarannum | |

ACTIVITIES OF STUDENTS OF S.Y.B.Sc.

This activity is literature survey based activity for S.Y. students. The students were allotted the topics individually. The students had to conduct a detailed literature survey of the given topic and submit a report. They were also encouraged to visit local places and take a survey related to their topic. This year following topics were allotted:

| Sr. No | Topics | Names of the students |
|---------------|---------------------------------------|---|
| 1 | Aquarium fishes and their maintenance | Candida vaz (753), Shaikh gulshanara (639), Khan tarannum(729), Khan Aasmeen(729), Lincy Thomas(601) |
| 2 | Birds of Mumbai | Prachi kamble(722), Ansari neelofar(602), Sarvesh dixit (608), Khan Asra faheem (725) |
| 3 | Application of Zoology | Khot Azra (623), |
| 4 | Domestic Pest and their control | Snehal raorane(737), Royston rogers(738), Divesh manchekar (625), Akshay hindlekar (717), Pranita kamble(722), Rahul Jha(657) |
| 5 | Lifestyle diseases | Meenakshi verma(754), Asma khurshid(604), Kimberly correia (706), Jadhav Pooja (718), Divya waghmare(740) |
| 6 | Personal and Social Hygiene | Ganesh singh(736), Khan faujaya bano(620), khan sarah (726), Aarti gupta (714), priyanka gupta (613) |
| 7 | Malaria | Priya singh (750), Rakhi raghuvanshi(734), |
| 8 | Milk | Sandhya santosh(759), Siddiqui Aafaaq(746), Ansari shaheen (602), |
| 9 | Tuberculosis | |
| 10 | Cancer | |

List of S.Y. Students for Zoo-Tech (Research based exhibit event)

| | |
|---|--|
| <p>Topic: Evolution</p> <ol style="list-style-type: none"> 1. MeenakshiVerma 2. Khan Sarah 3. Khan Farheen 4. Khan Amrin 5. Khan Asra 6. Khan Safina 7. Khan Yasmeen <p>Topic: Mysterious Mekong</p> <ol style="list-style-type: none"> 1. Ganesh Rajpurohit 2. Roysten Rogers 3. DiveshManchekar 4. AkshayHindelekar 5. Sarvesh Dixit 6. Deepika Singh 7. Soni Singh 8. AsfaqueSiddiqui 9. Shubham Singh <p>Topic: Molluscan Shells</p> <ol style="list-style-type: none"> 1. DwivediDivyaratnam 2. GodboleAishwarya 3. Sangeeta Gupta 4. Aarti Gupta 5. Candida Vaz 6. Priya Singh 7. SandhyaSanthosh 8. PoornimaKuthal <p>Topic: Coral Reef</p> <ol style="list-style-type: none"> 1. RupaliBahiram | <p>Topic: Applications of Zoology in Waste Management</p> <ol style="list-style-type: none"> 1. SnehalRaorane 2. SurabhiSawant 3. AnkitaTurbhekar 4. ShekhAlvina 5. SayyedRukhsar 6. TusharShinde 7. Khan Tarannum 8. Khan Yasmin <p>Topic: Animal Husbandry</p> <ol style="list-style-type: none"> 1. SurveAfiya 2. SayleeButkar 3. Manali Torne 4. GovindShukla 5. Priya Gupta 6. Ashish Gupta 7. RitikaAthawal <p>Topic: X- ray Crystallography of DNA: A Tribute to Rosalind Franklin</p> <ol style="list-style-type: none"> 1. Ankityadav 2. Vijay Gupta 3. NamrataJaiswar 4. SachinkumarMaurya 5. Ayushi Singh 6. PoojaRai 7. PoojaSawant <p>Topic: Skin Diseases</p> <ol style="list-style-type: none"> 1. SantoshiKadu 2. PrachiKamble |
|---|--|

| | |
|---|--|
| <ol style="list-style-type: none"> AnkitaChavan RakhiRaghuvanshi ApekshaGopale NeelamDubey RupamShwetaMamta Priyanka <p>Topic: Deadly Infectious Diseases</p> <ol style="list-style-type: none"> Kimberley Correia PoojaJAdhav MrunaliJAgdale DivyaWaghmare RatnakarPanhalkar PoonamShinde ShwetaYadav <p>Topic: Excretory System in Animals</p> <ol style="list-style-type: none"> Singh Ravindranath JaiswarMahendra JagaveVaijinath RautMayuri Desai swapnil Priyanka Gupta ArchanaDhuriya DolaiPriyanka <p>Topic: Cardiac Physiology</p> <ol style="list-style-type: none"> KomalVishwakarma Yadav Suresh Khan Saba KhotDevashree YadavKomal PadmavatiKharatmol Khan Farheen Ansari Shaheen | <ol style="list-style-type: none"> Priya Mishra Anushka AribaShaikh Vishal Dubey Uzair Ansari PrathameshJhinge <p>Topic: Bioluminescence</p> <ol style="list-style-type: none"> Anna Lincy Thomas Monica Gonsalves ShaikhGulshanara Shaikh Kaiser KhotraSharandeepKaur Mishra Vikram Kumar MestryChandrakant <p>Topic: Parasitology</p> <ol style="list-style-type: none"> Rajiv Mishra Rahul Jha Umaiya Sabina Qureshi Sabina AsmaKhurshid attar ChodharySakina PranitaKamble <p>Topic: Chromosomal Defects</p> <ol style="list-style-type: none"> PoojaJhanjurne Yadav Krishna AsswiniPawar YadavRavishankar Deepak Gupta ShivranjiniMuthuvel YadavPooja Sharma Rishabh |
|---|--|

Topic: Superbugs

1. Khan Fauziya
2. SonawaneShrutika
3. TayadeVidya
4. Ansari Neelofar
5. ShaikhAaliya

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A lecture and training on safety in laboratory was conducted by Dr. P.G.Kale for T.Y.B.Sc students on 10th June 2015.



A two day training in Basic laboratory skills and instrumentation was organized for T.Y.B.Sc students by Dr. (Mrs). J.A. Bhagwat on 12th and 13th of June 2015.



Mr. Anil Hardikar, Media and Event Manager, Parle Bhooshan Periodical conducted a workshop on Communication Management for non-teaching staff on 15.06.15



Mrs. Ashwini Jadhav, Assistant manager, Geochemlab ,kanjurmarg delivered a lecture on "Good laboratory practices" for T.Y.B.Sc students of Zoology and Botany on 11.06.15



Mr. Amol Joshi Practitioner and Pranich healer delivered a lecture on Psyche Management. on 17.06.15

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Mr. Santosh thombre Head, safety health and envt. Cipla conducted and trained the non-teaching staff on Safety Management on 16.06.15



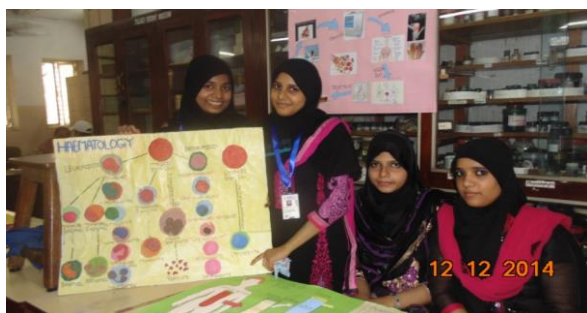
Dr. R. P. Athalye, Vice principal and Associate Professor, Dept of Zoology, B. N. Bandodkar College, delivered a lecture on Health & Stress Management on 18.06.15



Zoo-Fest being inaugurated by Dr. S.G.Yeragi, former head and vice principal, Somaiya College, Vidyavihar

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Zoo-Chart event for T.Y.B.Sc



Students participating in the Zoo-Tattoo event



Zoo-Fest event visited by school students



Zoo-Fest event visited by school students



Zoo-Chart event being appreciated by Dr. S.G.Yeragi, the Chief guest.



Zoo-Click (photography) part of the display



Students participating in Zoo-tech exhibit event



Zoo-Art (Rangoli event) being appreciated by Dr. S. S. Yeragi.

EXTENSION PRACTICAL

Dairy science is in the curriculum of S. Y. B. Sc. Zoology. Students were asked to bring a small volume of milk they consume at home. Using this sample they were asked to analyze- protein content, fat content, and contaminants if any.

From the reports made by the students it could be learnt that the packed milk of 'Mahananda' brand not only had contaminants like starch, glucose and urea but that the protein and lipid content was significantly lower than the claims made by the Company.

The students were excited by their findings and within days a detailed report appeared in newspapers about the supply of contaminated milk by 'Mahananda Dairy', which confirmed their findings.



STAR College Scheme

PROGRESS REPORT

2014-15

Department of Chemistry

by

Hindi Vidya Prachar Samiti's

RAMNIRANJAN JHUNJHUNWALA COLLEGE

OF ARTS, SCIENCE & COMMERCE

Ghatkopar (West), Mumbai-400 086, Maharashtra, INDIA.

Tel No.: +91 22 25151763 Fax No.: +91 22 25150957 Website: www.rjcollege.edu.in Email: rjcollege@rjcollege.edu.in

to

STAR COLLEGE SCHEME, HRD Division

Department of Biotechnology, Ministry of Science & Technology

Block-2, 6th to 8th Floor, CGO Complex, Lodi road, New Delhi-110003.

Progress Report by Department of Chemistry

A) New practicals / projects introduced in chemistry department, supported under DBT scheme.

1. For F.Y.B.Sc.

Total **550** students of F.Y.B.Sc. participated

These students had along with chemistry, other subjects at F.Y., such as **Physics, Botany, Zoology, Biotech, Mathematics, And Statistics.**

All the students were introduced with **INDIAN PHARMACOPOEIA (I.P.), Vol.I, Vol. II AND Vol. III, 2010 EDITION.**

New experiments

- i) **Aim:** Determination of percentage purity of AR and LR grade Na_2CO_3 , by using IP assay.
Purpose: Students were introduced to LR and AR grade chemicals
Sodium carbonate is commonly used chemical in chemistry laboratory and hence this chemical was selected for experiment.
Outcome: Awareness was created among the students about LR and AR grade chemicals and how to perform assay by I.P. method.
- ii) **Aim:** To study the action of heat on hydrated CuSO_4 crystals.
Purpose: These experiment is an extension of an experiment prescribed in the syllabus of F.Y.B.Sc. as per the syllabus students prepared $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ from CuO .
In this experiment students studied the action of heat on $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$.
Outcome: With this experiment, students understood the concept of water of crystallization and the color imparted by it to the compounds.

Project 1:

Students were demonstrated how to prepare various types of papers, used in chemistry laboratory, such as DMG paper, ferrocyanide paper, ferricyanide paper, potassium dichromate paper and potassium thiocyanate paper.

Students prepared all the above papers, dried, labeled and stored.

In their next practical, students used the above papers which they had prepared and stored for detection of Ni^{2+} , Fe^{2+} , Cu^{2+} , Fe^{3+} and SO_3^{2-} ions.

With the help of above project, students could learn the preparation of different types of papers used in laboratory and their used in detection of various ions.

Project 2:

Aim: Identification of adulteration in food materials.

Purpose: To make students aware about the simple chemical test that are used to detect adulteration in common food materials.

Outcome: Students brought 1) turmeric powder 2) sweets (made from mawa) 3) pulses 4) edible oil from their home and analyzed these samples in the laboratory. This created awareness among the students about presence or absence of adulterants in food materials (tested), which they are using at home.

2. For S.Y.B.Sc.

Total number of students: **255**

These students had along with chemistry, other subjects at S.Y., such as **Physics, Botany, Zoology, Biotech.**

All the students were introduced with **INDIAN PHARMACOPOEIA (I.P.), Vol.I, Vol. II AND Vol. III, 2010 EDITION.**

New Experiments

i) **Aim:** To prepare acetanilide from aniline using microwave

Purpose: At S.Y.B.Sc. level students do not perform any experiment using microwave according to university syllabus. Hence, students were introduced with this method.

Outcome: With this experiment, students could learn preparation of organic compound by **Green method** using **microwave**.

ii) **Aim:** Potentiometric titration of HCl v/s NaOH

Purpose: In S.Y.B.Sc. students are performing titration of HCl vs NaOH by using conductometer and pH meter.

To introduce use of potentiometer for the above titration

Outcome : Students were made aware that titration of HCl v/sNaOH can be performed by using three different instruments such as conductometer, pH meter (used in regular practical) and potentiometer (newly introduced).

iii) **Aim:** To determine percentage of chloride present in the given sample.

Purpose: To introduce to the students the technique of analysis of ready to eat food available in the market.

Outcome: Students learned the technique of estimation of chloride in the given sample.

iv) **Aim:** To determine the amount of calcium present in the given sample (tablet)

Purpose: To introduce how to analyze calcium tablets available in the market.

Outcome: Students learned the technique of analyzing calcium tablets available in the market to find the amount of calcium present.

Project 1:

Aim: To determine the percentage composition of strong acid and weak base in the given mixture

Purpose: In regular practical students perform titration of single acid against base, In theory students learn the titration curve for conductometric titration of mixture of strong acid and weak acid against strong base.

Outcome: after the above conductometric titration, students understood the theoretical concept involved in this titration, in a more clear way.

Project 2:

Aim: Identification of adulteration in food materials.

Purpose: To make students aware about the simple chemical test that are used to detect adulteration in common food materials.

Outcome: Students brought 1) Tea powder 2) Dried chili powder 3) coffee powder 4) powdered sugar from their home and analyze these samples in the laboratory and they could find whether the samples that they are using at home were adulterated or pure.

3. **For T.Y.B.Sc.**

Total number of students 123 (with 6 units of chemistry)

All the students were introduced with **INDIAN PHARMACOPOEIA (I.P.), Vol.I, Vol. II AND Vol. III, 2010 EDITION.**

New Experiments:

i) **Aim:** Determination of percentage purity of AR and LR grade Na_2CO_3 , by using IP assay.

Purpose: Students were introduced to LR and AR grade chemicals

Sodium carbonate is commonly used chemical in chemistry laboratory and hence this chemical was selected for experiment.

Outcome: Awareness was created among the students about LR and AR grade chemicals and how to perform assay by I.P. method.

ii) **Aim:** To determine the amount of calcium present in the given sample (tablet)

Purpose: To introduce how to analyze calcium tablets available in the market.

Outcome: Students learned the technique of analyzing calcium tablets available in the market to find the amount of calcium present.

iii) **Aim:** To make use of quinhydrone electrode for emf measurement

Purpose: In theory students are learning application of emf measurement using quinhydrone electrode to measure the amount of strong acid. Based on this theoretical concept, they perform titration of strong acid against strong base.

Outcome: The concept of quinhydrone electrode, learned in theory was implemented by students in practicals

iv) **Aim:** To determine the percentage composition of strong acid and weak base in the given mixture

Purpose: In regular practical students perform titration of single acid against base, in theory students learn the titration curve for conductometric titration of mixture of strong acid and weak acid against strong base.

Outcome: after the above conductometric titration, students understood the theoretical concept involved in this titration, in a more clear way.

v) **Aim:** To prepare acetanilide from aniline using microwave

Purpose: At T.Y.B.Sc. level students do not perform any experiment using microwave according to university syllabus. Hence, students were introduced with this method.

Outcome: With this experiment, students could learn preparation of organic compound by **Green method** using **microwave**.

vi) **Aim:** To determine percentage of chloride present in the given sample (soup powder).

Purpose: To introduce argentimetric titrations to the students, which they are learning in theory but they do not have practical on this method in the syllabus. Students were explained the technique of argentimetric titration for analysis of soup powder purchased from the market.

Outcome: Students learned how argentimetric titration is used to estimate the chloride in the given sample.

Project 1:

Aim: Identification of adulteration in food materials.

Purpose: To make students aware about the simple chemical test that are used to detect adulteration in common food materials.

Outcome: Students brought 1) Green vegetables 2) coriander powder 3) coffee powder 4) milk 5) Iodized salt 6) processed food, sweets and syrups from their home and analyze these samples in the laboratory and they could find whether the samples that they are using at home were adulterated or pure.

Project 2:

Aim: Synthesis of Schiff's base using microwave

Purpose: In regular practical T.Y. B.Sc. students have experiment of synthesis of Schiff's base by conventional method.

How the Schiff's base can also be prepared by using green method with the help of microwave, was explained to the student and student performed this experiment using microwave.

Outcome: Students could compare two different methods for preparation of Schiff's base such as

- a) Conventional method
- b) Green method using microwave

B) Interdepartmental projects executed by the students: CHEM BOND ACTIVITIES

Name of the event: CHEMTALK

Event held on: 30th July 2014

Total 30 students from F.Y., S.Y., T.Y.B.Sc., participated in the event of 'CHEMTALK'

Following topics were given to the students for 'CHEMTALK' elocution competition

Topics:

1. Lewis concept of acids and Bases
2. Bohr's Atomic model
3. Order & Molecularity of reactions
4. Entropy
5. Types of reaction in organic chemistry
6. Aromaticity
7. Spectroscopy
8. Classical method of analysis
9. Primary standards and secondary standards

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)**R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086****List of students participated in ‘CHEMTALK’**

| Sr. No. | Name | Class, Div. | Topic |
|----------------|-------------------|--------------------|--|
| 1 | Abhishek Tiwari | F.Y (A) | Types of chemical reactions in organic chemistry |
| 2 | Anuj Tiwari | F.Y (A) | Bohr's atomic model |
| 3 | Omkar Pomendkar | F.Y (D) | Entropy |
| 4 | Ankita Pathak | S.Y (C) | Classical methods of analysis |
| 5 | Swati Yadav | S.Y (C) | Bohr's atomic model |
| 6 | Divya Tripathi | S.Y (C) | Entropy |
| 7 | Mourya Chitra | F.Y (B) | Lewis acids and Bases |
| 8 | Khushbu Siddiqui | F.Y (C) | Bohr's atomic model |
| 9 | Nikita Kane | F.Y (B) | Types of chemical reactions in organic chemistry |
| 10 | Neha Jagtap | F.Y (B) | Bohr's atomic model |
| 11 | Jyoti Pathak | S.Y (C) | Spectroscopy |
| 12 | Sandeep Chaudhary | F.Y (B) | Bohr's atomic model |
| 13 | Needa Shah | S.Y (A) | Lewis acids and Bases |
| 14 | Krishna Gupta | S.Y (A) | Entropy |
| 15 | Nisha Vishwakarma | T.Y (A) | Aromaticity |
| 16 | Sachin Gupta | T.Y (A) | Aromaticity |
| 17 | Akash Mourya | T.Y (A) | Spectroscopy |
| 18 | Nayal Keval | T.Y (A) | Bohr's atomic model |
| 19 | Aakash Bhokare | F.Y (C) | Bohr's atomic model |
| 20 | Tasneem Khan | F.Y (C) | Bohr's atomic model |
| 21 | Fairoza Khan | F.Y (C) | Lewis Concept of acids and Bases |
| 22 | Kaushal Kaur | S.Y (C) | Aromaticity |

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| | | | |
|----|----------------------|---------|--|
| 23 | Sneha Galgude | F.Y (B) | Lewis acids and Bases |
| 24 | Nitin Wagh | S.Y (C) | Spectroscopy |
| 25 | Khan Imrana Ashfaque | S.Y (C) | Primary and Secondary standards |
| 26 | Niraj Chaudhary | S.Y (C) | Aromaticity |
| 27 | Soeba Chaudhary | S.Y (C) | Lewis acids and Bases |
| 28 | Vanessa Rasquinha | T.Y (A) | Types of chemical reactions in organic chemistry |
| 29 | Sayali Mestry | F.Y (B) | Spectroscopy |
| 30 | Divya Jain | T.Y (A) | Lewis acids and Bases |

Name of the event: Group Presentation Competition “YES I CAN”

Event held on: 11th December 2014

Total 44 students from F.Y., S.Y., T.Y.B.Sc., participated in the event of Group Presentation Competition “YES I CAN”

The theme of the seminar was ‘Noble stories in chemistry’

Total 17 teams comprising of 44 students participated in this event.

List of topics selected by the students

| Sr. No. | Name | Topic | Name of Nobel prizes winner |
|---------|---------------------|--------------------------|-----------------------------|
| 1. | Nitin Wagh | Inert Gas | Sir William Ramsay |
| | Lancee Thomas | | |
| | Monika Gonsalves | | |
| 2. | Gulshanara Shaikh | Carbon Dating | Willard Libby |
| | Shziyakaiser Shaikh | | |
| 3 | Arfiya Khan | Molecular orbital theory | Robert S. Mulliken |
| | Sneha Galgude | | |
| | Nikita Kane | | |
| 4. | Niraj Chaudhary | Haber process | Fritz Haber |
| | Candida Vaz | | |
| 5. | Vanessa Rasquinha | Grignard reagent | Victor Grignard |
| | Sayli Shinde | | |

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| | | | |
|----|-----------------------|---|--------------------------|
| | Diksha Verma | | |
| 6. | Sachin Gupta | Carbon Dating | Willard Libby |
| | Vishal Mishra | | |
| | Aakash Maurya | | |
| 7. | Ankita Pathak | Grubb's catalyst | Robert H. grubbs |
| | Divya Tripathi | | |
| | Swati Yadav | | |
| 8 | Akanksha Tiwai | Studies of the structure & function of the ribosome | Venkatraman Ramakrishnan |
| | Shrutika Sonawane | | |
| | Aaliya Shaikh | | |
| 9 | Akshata Bhosle | Formation & decomposition of ozone | Mario J. Molina |
| | Himanshi Karawanje | | |
| | Priyanka Jadhav | | |
| 10 | Anup Tripathi | Noble prize | Alfred Bernhard Nobel |
| | Nitesh Sawant | | |
| | Faiz Malik | | |
| 11 | Pooja Shinde | Polarography | Jaroslav Heyrovsky |
| | Alfiya Patel | | |
| | Siddhesh More | | |
| 12 | Kevel Nayal | Molecular orbital theory | Robert S. Mulliken |
| | Nisha Vishwakarma | | |
| 13 | Khan Fatima Zakir | Discovery of elements radium & polonium | Marie Curie |
| | Shamsi Aqsa | | |
| 14 | Anuj Tiwari | Discovery of Radioactivity | Antoine Henri Becquerel |
| | Mata Prasad Chaurasia | | |
| 15 | Vinod Kanojia | Polarography | Jaroslav Heyrovsky |
| | Archana Kandoo | | |
| | Divya Jain | | |
| 16 | Santosh Yadav | CO ₂ assimilation in plants | Melvin Calvin |
| | Sachin Singh | | |
| | Rahul Varma | | |
| 17 | Omkar P. | Habers process | Fritz Haber |

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Name of the event: Poster Competition on 'Chemistry in domestic products'

Event held on: 12th December 2014

Total 48 students from F.Y., S.Y., T.Y.B.Sc., participated in the event of 'Poster Competition'

Students exhibited posters on various domestic products.

List of students along with the title of the poster

| Sr.no | Name of the student | Division | Title of the Poster |
|-------|---|-----------------------------|---|
| P1 | Shruti Bohir Sana Ilahi | S.Y.B.Sc (C) | Chemistry in domestic products |
| P2 | Ranjana Chauhan Reena Yadav | F.Y.B.Sc (C) | Deo |
| P3 | Savita Yadav Mayuri R. Bamane | T.Y.B.Sc (A) | Sodium chloride salt |
| P4 | Aldrin Kano Khan Alvira | F.Y.B.Sc (C) | Shoe -polish |
| P5 | Khan Tasneem Khan Fairiza | F.Y.B.Sc (C) | Cold Drinks |
| P6 | Diksha Pandey Manali Mane | T.Y.B.Sc (A) | Talcum Powder |
| P7 | Neha Pandey Chandani Mehata | F.Y.B.Sc (C) | Dettol |
| P8 | Fatima Khan Vikas Dubey | T.Y.B.Sc (A) | Insecticides |
| P9 | Shaikh Samreen Shaikh Sauda | S.Y.B.Sc (C) | Chemistry in domestic product lithium Battery |
| P10 | Snehal Parkhi Varsha Shrivastav | F.Y.B.Sc (C) | Cosmetic Kajal |
| P11 | Monika Singh Sana Shaikh | F.Y.B.Sc (C) | Shampoos |
| P12 | Vanessa Rasquinha Sonali Pal | T.Y.B.Sc(A) F.Y.B.Sc (D) | Water |
| P13 | Priya Vaghoskar Premlata Vishwakarma | T.Y.B.Sc (A) | Polythene |
| P14 | Soni Vishwakarma Santosh Yadav | S.Y.B.Sc (A) | Detergents |
| P15 | Khan Rukhsar Reshma Begum A.Rahim | S.Y.B.Sc (C) | Chemistry of hair colour |
| P16 | Aakash Maurya Chitra Maurya | T.Y.B.Sc(A) F.Y.B.Sc (B) | Toothpaste |

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| | | | |
|------------|----------------------------------|------------------------------|-----------------------------|
| P17 | Alfia Patel Pooja Shinde | F.Y.B.Sc (C) | Salt |
| P18 | Aparana Shukla Siddhesh More | F.Y.B.Sc (C) F.Y.B.Sc (A) | Toothpaste |
| P19 | Sayali Shinde Manisha Gupta | T.Y.B.Sc (A) | Chocolate |
| P20 | Nisha Vishwakarma Kevel Nayal | T.Y.B.Sc (A) | Products of Vicks |
| P21 | Vishal Mishra Sachin Gupta | T.Y.B.Sc (A) | Antacids |
| P22 | Archana Kandoo Divya Jain | T.Y.B.Sc (A) | Crying while cutting onions |
| P23 | Archana s. Dhuriya | S.Y.B.Sc (C) | Methyl Salicylate |
| P24 | Monica Nitin Wagh | S.Y.B.Sc | Deo |

C) Workshops and seminars organized for the students by chemistry department.

- i) A summer course was conducted for students of S.Y.B.Sc from 20th April 2014 to 25th April 2014. This summer course covered the basic concepts which students required to know before starting with their final year of graduation.

More than 100 students participated in the summer course

The course covered the fundamental concepts from Organic Chemistry, Inorganic Chemistry, Physical Chemistry and Analytical Chemistry.

At the end of each session students were given assignments, which were discussed with the students on the last day of the summer course.

They were given additional assignments to be completed during the vacation.

- ii) A workshop on GLP and Green Chemistry was conducted for T.Y.B.Sc students on 12th June and 13th June 2014. Around 100 students attended the workshop
- iii) A workshop on 'Basic Techniques and Safety Aspects in Laboratory' was conducted for S.Y.B.Sc students from 15th June-20th June 2015. About 220 students participated in the workshop.

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

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Dr. S.S. Garje, Professor, Department of Chemistry, University of Mumbai, delivering a lecture on 'Nanomaterials – Dream Realized' on 17th January, 2015.



CHEM-BOND's eloquution competition 'Chem Talk' is in progress in the seminar hall on 30th July, 2014



Inaugural function of a workshop on 'Good Laboratory Practices and Green Chemistry' on 12th June, 2015



An interactive session of T.Y.B.Sc. Chemistry students of 2015-16 with ALUMINI of 2008-09 batch, on 18th June, 2015



A workshop on 'Basic Techniques & Safety Aspects in Laboratory' for S.Y.B.Sc. students is in progress in the Chemistry Main Lab on 25th June, 2015



A workshop on 'Basic Techniques & Safety Aspects in Laboratory' for S.Y.B.Sc. students is in progress in the Physical Chemistry Lab on 25th June, 2015

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Prof. K.K. Bhasin, former Dean, Faculty of science and UGC-CAS Coordinator, Punjab University, delivering a lecture on "Popularizing Sciences" on 16th June, 2015.



Prof. K.K. Bhasin and students getting ready for demonstration during the lecture on "Popularizing Sciences" on 16th June, 2015.



Niraj Chaudhari (S.Y.) student explaining 'aromaticity'



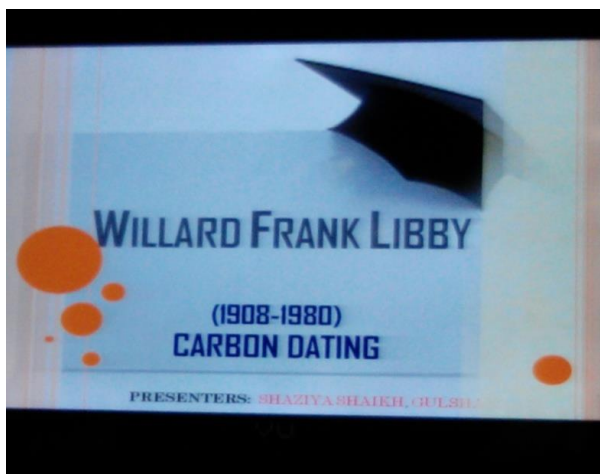
Swati Yadav (S.Y.) explaining 'Bohrs atomic model'



Poster presentation on 'Digene' by T.Y.B.Sc. students



Poster presentation on 'Cold drinks' by S.Y. B.Sc. student



Nobel prize story of 'Carbon Dating' presented by Gulshanara shaikh and shaziya shaikh (S.Y.B.Sc.)

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

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C) Guest Faculty invited:

| Guest Name | Designation | Topic | Date | Host Department |
|-------------------|--|--|-------------------------------|-----------------|
| Dr. Shivram Garje | Prof. Inorganic Chemistry UDC, Mumbai University | Nano materails- dream Realized | 17 th Jan 2015 | Chemistry |
| Dr. K.K. Bhasin | Former Dean,Punjab University | Popularizing Science | 16 th June 2015 | Chemistry |
| Ramnath Malla | Ph.D. student at ICT, Mumbai | Career Opportunities after B.Sc. | 18 th June 2015 | Chemistry |
| Abhishek Dubey | Ph.D. student at ICT, Mumbai | Preparing for various entrance exams for M.Sc. | 18 th June 2015 | Chemistry |
| Piyush Deokar | Ph.D. student at University of Southern California, USA | Higher studies, abroad | 18 th June 2015 | Chemistry |

List of teachers who have attended conferences /short term courses

| Sr. No. | Name of the teacher | Title of the activity | Duration | Name of the host institute |
|---------|----------------------|--|---|------------------------------------|
| 1. | Prof. V. B. Kulkarni | “Chemistry- sustainability and environment” | Two days (20 th Feb. to 21 st Feb. 2015) National conference | Ruia college, Mumbai |
| 2 . | Dr. Deepali S.Pimple | Short term course on Research methodology | One week (15 th Oct. 2014 to 21 th Oct 2014) | R J college, Mumbai |
| 3. | Dr. R.S. Dubey | “National conference on frontiers in chemical and materials science” | Two days (16 th January 2015 to 17 th January 2015 | Shivaji university, Kolhapur |

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| | | | | |
|-----|----------------------------|--|---|----------------------------------|
| | | “National conference on advances and innovations in chemical sciences” | Two days (12 th Feb 2015 to 13 Feb2015) | University of Mumbai, |
| 4. | Dr. Abhay D Sawant | International conference | Two days (8 th Dec. 2014 to 9 th Dec 2014) | |
| 5. | Dr. Vaishnavi Sridhar | Short term course on Research methodology | One week (15 th Oct. 2014 to 21 th Oct 2014) | R J college, Mumbai |
| 6. | Prof. Mandar D. Medhi | Short term course on Research methodology | Six days (7 th July 2014 to 12 th July 2014) | BAMU, Aurangabad |
| | | “Computer assisted teaching in chemistry” | One day (29 th November 2014)workshop | IIT Bombay, Mumbai |
| | | Association of chemistry teachers | One day workshop | Karjat college, Thane |
| 7. | Dr. Charu R. Vatsa | Short term course on Research methodology | One week (15 th Oct. 2014 to 21 th Oct 2014) | R J college, Mumbai |
| 8. | Dr. Manisha P.Bhattacharya | “Recent trends in analytical chemistry” National level seminar | One day (6 th Sept. 2014) | Acharya marathe college, Chembur |
| 9. | Dr. Asawari Y Mokal | “Recent trends in chemistry” | Two days (10 th Feb. 2014 to 11 th Feb. 2014) | University of Mumbai |
| 10. | Prof. Prabijna S. S. Babu | “Special summer school” | 3 weeks (12 th June 2014 to 2 nd July 2014) | University of Calcutta, Kolkata |

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

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| | | | | |
|--|--|---|---|--------------------|
| | | “Computer assisted teaching in chemistry” | One day (29 th November 2014) workshop | IIT Bombay, Mumbai |
|--|--|---|---|--------------------|

❖ Interdepartmental activities

List of workshop conducted by chemistry staff members for students / other colleges

| Name of the teacher | Title of the workshop | Date | Resource person |
|---|--|-----------|---|
| Prof P. T. Singh | Transforming Indian to transform India | 19/7/2014 | Mr. S. Arvind |
| | | 25/7/2014 | Research scholar from |
| | Topics covered: | 26/7/2014 | IIT Mumbai |
| | Physical, emotional, | 2/8/2014 | Mr. Sriram |
| | intellectual, social, | 7/2/2015 | IT professional |
| | cultural and spiritual transformation | 15/4/2015 | Dr. Sunita Shanker Clinical psychologist |
| | More than 100 student attended the workshop | | |
| Prof Seema Ratnaparkhi | Best practices of IQCA 41 staff members from various colleges attended the workshop | 14/3/2015 | Prin. Usha Mukundan & others |
| A) Training of laboratory staff: Laboratory staff members are trained regularly for handling the chemicals in safe manner, preparing various solutions and safety aspects while working in laboratory, are revised with lab staff regularly. | | | |

Qualitative improvements due to DBT support:

- Enhanced availability of good quality (A.R.) chemicals/ consumables and glassware.
- Availability of instruments which otherwise are not used by the students in regular practicals (for example : Multiparameter, Flame photometer with calcium and lithium filters also)
- Students could perform various new experiments, which otherwise they study only in theory.
- Overall improvement in the infrastructural facilities in the department.
- Skill enhancing training imparted to the students and staff.



STAR College Scheme

PROGRESS REPORT

2014-15

Department of Physics

by

Hindi Vidya Prachar Samiti's

RAMNIRANJAN JHUNJHUNWALA COLLEGE

OF ARTS, SCIENCE & COMMERCE

Ghatkopar (West), Mumbai-400 086, Maharashtra, INDIA.

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to

STAR COLLEGE SCHEME, HRD Division

Department of Biotechnology, Ministry of Science & Technology

Block-2, 6th to 8th Floor, CGO Complex, Lodi road, New Delhi-110003.

Progress Report by Department of Physics

A) Student Activities

i) Dissertation , projects and experiments

F.Y.B.Sc. students performed the following: (Students offering Chemistry, Statistics, Zoology, Physics, Computer Science and Mathematics. Total students = 378).

- a) Newton's rings - Dark and bright circular (Newton's) rings are formed due to interference in the air wedge between the convex lens and plane glass plate which are observed through travelling microscope. The diameters of lower order and higher order are measured. Using this data the wavelength of the given monochromatic source is calculated.
- b) Lissajous Figures – Lissajous figures are curves traced by a particle when acted upon by two perpendicular simple harmonic motions. The shape of the figure depends upon amplitude, frequencies and the initial phase difference of the SHMs. Unknown frequencies are determined using a known variable frequency oscillator in XY mode of the CRO from various Lissajous figures formed.
- c) Use of travelling microscope – Surface tension of different liquids - The rise of liquid in a given capillary tube depends on its surface tension. The height of liquid column in a capillary was measured using travelling microscope for different liquids which wet the glass. This was used to estimate their surface tensions.

S.Y.B.Sc. (Students offering chemistry, Physics, Mathematics and Statistics total students = 184)

- a) Laser attached spectrometer – The apparatus consists of a laser attached to the collimator and detector in the form of a photodiode is placed in front of the eye piece. A plane diffraction grating is mounted perpendicular to the collimator of the spectrometer. Diffracted beams of the first and second order are observed on both sides of the direct beam. Measuring the angles of diffraction of all these beams and using Bragg's law, the wavelength of the laser is calculated.
- b) Fibre-Optics – A flat fibre end faces perpendicular to the axis of fibre is prepared. In order to launch light into the fibre, a microscopic objective lens is aligned with the source for coupling maximum possible light into the fibre. The fibre is firmly clamped over the fibre chucks such that only a small length of fibre end projects out of the chuck.

- c) Ultrasonic Interferometer – In this apparatus a piezoelectric crystal is used to generate ultrasonic waves which are passed through a liquid and reflected from a reflector. This leads to standing waves when the distance of the reflector is half integer multiple of the wavelength. The standing wave pattern in turn exerts more pressure on the piezoelectric crystal producing a maxima in the current which is measured. From the position of these maxima velocity of sound in the liquid is calculated.

T.Y.B.Sc. (Physics Major Students =40)

- a) Chaos circuit – Chua's circuit involving nonlinear resistance implemented using OP-AMPs was constructed. Owing to the nonlinear resistance, the circuit produces complex patterns of waveforms which can be seen on the oscilloscope in the XY mode. Also, sudden changes in these patterns (bifurcations) are also observed as the controlling resistance is changed.
- b) Speed of light - An oscillating power supply is given to a solid state laser making the intensity of the laser to oscillate. This beam of laser is made to traverse a large distance using multiple reflections using several mirrors. The beam, which is oscillating in the intensity, is detected and observed on the oscilloscope at the source and also after it has traversed certain distance. The phase lag between these waveforms, measured on a dual CRO, allows one to estimate the speed of light.
- c) Michelson Interferometer – The apparatus consists of a monochromatic source, two reflecting mirrors, a partially reflecting mirror and an identical plate. Two coherent rays are produced and an interference pattern is observed through the telescope. One of the mirrors is moved and the number of rings which vanish/ reappear at the center are counted. Hence the wavelength of the monochromatic source is determined accurately.

Training Imparted to Students of other Colleges

- a) Mr. Nakul Karle from the University Department of Physics carried out an interdisciplinary project on Fractal analysis of lakes' boundaries using readily available satellite images. It has implications to geology of mountain formation.
- b) Another interdisciplinary project was carried out by a group of students (Pulkit Prakash, Swadhini Sahu and Shruthi Radhakrishnan) from the University Department of Physics in collaboration with Tata Institute of Fundamental

Research, Mumbai. It consisted of studying dendritic patterns obtained when a biological fluid is irradiated with low powered laser light.

Spectrum

- A wall paper called Spectrum is displayed fortnightly on the notice board. It consists of a collage of scientific news items collected by students under the guidance of teachers. This helps students in compiling information and presenting it in a proper manner. It also helps students to read articles from Journals, periodicals. The Spectrum is displayed in a strategic position to attract readers from age group of 17 to 60.

Outreach Activity

- The **space point club** organized a night sky observation spanning from 6 pm to 6 am at Mamnoli village near Kalyan. Thirty three students studying various subjects learnt about stars in various constellations, types of telescopes and observed deep sky objects with them. Five staff member also participated in the event. Star charts were given to the students. Students also submitted a written report of the event.

ii) Visits to Research Institutes/Industries

| No. | Date | Name of Industries | No. of Students | No. Of Staff (Teaching + Non-teaching) |
|----------|------------|--|-----------------|--|
| 1 | 20/02/2015 | 1. Sar Konnect Electra Pvt. Ltd. Igatpuri. (Manufacturers of all types of connectors (Lugs)) | 32 | 10+2 |
| | | 2. Parveen Indusrty , Igatpuri. (Manufacturers of underwater oil connecting pipes and Couplings) | | |
| 2 | 13/03/2015 | 1. Arihant Industry , Vasai (Manufacturers of all types of slides & equipments for play grounds, water parks etc.) | 38 | 3+5 |

| | | | | |
|--|--|---|--|--|
| | | 2. Neelam Steel , Vasai (Manufacturers of household steel utensils) | | |
|--|--|---|--|--|

iii) Summer training

A summer course was conducted for SYBSc from 10th to 16th March 2015

Following sessions were conducted during the program

- Physics Quiz
 - Physics Crossword
 - Laboratory sessions
 - Students' presentation
 - Guest lectures
 - In-house seminars etc.
- a. Workshop by Mr. G.D. Sharma, Beeline HR Advisory, Chennai on **“Enhance your Employability”** for the T.Y.B.Sc. Students. **(9th March 2015)**
 - b. Fourteen students participated in power point presentations on various **“Sky Objects”** prepared by them. **(31st March 2015)**
 - c. Guest lecture **“Telecommunication in Computer”** by Mr. R. Naphade from NTT Communications. **(11th March 2015)**

B) Faculty

a) **Name of the Department:** Physics

b) **List of Internal faculty trained for skill improvement**

- Mr. Devraj Pawar attended School of Modern Astrophysics (SOMA-2014), "X-ray Astronomy and Particle Astrophysics", St. Petersburg, Russia, July 15-26, 2014
- Dr. M. R. Shenoy, IIT Delhi gave an informative and absorbing talk for the faculty members of the Physics Department on **“Physics of Optical Communication”**. The similarities between optical and electronic devices which he highlighted were very much appreciated. **(16th March 2015)**

Impact of the Scheme

- The industrial visits aroused students' curiosity about modern production processes using manual and automated machinery.
- Lectures by specialists and new experiments outside the curriculum broadened their perspective.

- These activities helped students develop interest and as a result more students opted to specialize in the subject.

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086



Mr. G. D. Sharma conducting the workshop



Group photo after the physics quiz in the summer course



Students giving power point presentation



Dr. M. R. Shenoy presenting the lecture



Visit to Vipin Industries



Students learning about telescopes



STAR College Scheme

List of Instruments

by

Hindi Vidya Prachar Samiti's

RAMNIRANJAN JHUNJHUNWALA COLLEGE

OF ARTS, SCIENCE & COMMERCE

Ghatkopar (West), Mumbai-400 086, Maharashtra, INDIA.

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FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086

List of Instruments Purchased under DBT STAR COLLEGE SCHEME (Botany)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------|--|---------------|--------|----------------|------------|--|------------------|
| Sr. No. | Instrument Name | Make (if any) | Rate | Quantity (nos) | Total Cost | College Voucher No. or Dept. Statement No. | Date of purchase |
| 1. | PLS Smart 3 Trinocular Microscope with LCD Screen for Microscope | Pulse | 120000 | 1 | 135000 | 3011 | 13/02/2015 |
| 2. | Equiptronics Digital Calorimeter Model EQ 650 A | Equiptronics | 8200 | 8 | 68265 | 3023 | 11/03/ 2015 |
| 3. | 7020 Mini Submarine Electrophoresis Unit | | 12696 | 6 | 77128 | 3036 | 21/03/2015 |
| 4. | Slimpage D ready Vertical Electrophoresis Unit | | 9350 | 4 | 58523 | 3046 | 19/03/2015 |
| 5. | | | 5100 | 4 | | | |
| 6. | Microcentrifuge Spinwin | Tarson | 28800 | 1 | 159889 | 3037 | 20/03/2015 |
| 7. | Digital pH Meter | Equiptronics | 7990 | 1 | | | |
| 8. | Ultrasonic Bath Complete | Dakshin | 12400 | 5 | | | |
| 9. | Glass Thermometer | Zeal | 225 | 1 | | | |

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

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| | | | | | | |
|-----|--|-------------|-------|---|-------|------------|
| 10. | Digital Balance EWT 223 | Eureka | 28000 | 1 | | |
| 11. | Digital Balance EWT 610 | Eureka | 19000 | 1 | | |
| 12. | Digital Balance EWT 5000 | Eureka | 22500 | 1 | | |
| 13. | Hair Drier | | 1200 | 1 | | |
| 14. | Digital Colorimeter Model 253 | Hans Vidyut | 8100 | 1 | | |
| 15. | Laborartory Air Oven | Metalab | 21700 | 1 | 26480 | |
| 16. | Bacteriological Incubator Digital Temp | Metalab | 21700 | 1 | 26480 | |
| 17. | Revolutionary General Centrifuge R-8c | Remi | 30519 | 1 | 30900 | |
| 18. | Visi Cooler 2°C to 8°C | Blue Star | 45970 | 1 | 46545 | |
| | | | | | 3071 | 25/03/2015 |

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086

List of Instruments Purchased under DBT STAR COLLEGE SCHEME (ZOOLOGY)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------|---|---------------|-------|----------------|------------|--|------------------|
| Sr. No. | Instrument Name | Make (if any) | Rate | Quantity (nos) | Total Cost | College Voucher No. or Dept. Statement No. | Date of purchase |
| 1. | BOD Incubator 5°C to 6°C | Metalab | 81300 | 1 | 80030 | 3071 | 25/03/2015 |
| 2. | Printer Laserjet | Canon | 7523 | 1 | 7900 | 3001 | 18/09/2014 |
| 3. | PLS LCD 450 with 3.6" LCD Display Monitor Digital Screen Microscope | Pulse | 26000 | 1 | 29250 | 3010 | 15/02/2015 |
| 4. | pH Meter EQ610 | Equiptronics | 6800 | 1 | 64204 | 3020 | 8/03/2015 |
| 5. | Calorimeter EQ650 | Equiptronics | 7170 | 1 | | | |
| 6. | Pan Type pH Meter | Hanna | 900 | 1 | | | |
| 7. | Digital Sound Level Meter 35 to 130 DB | | 5800 | 1 | | | |
| 8. | UV Cabinet | Bioethinics | 5500 | 1 | | | |
| 9. | Dissecting Microscope Brass Parts Superior | MVTEX | 975 | 12 | | | |
| 10. | Muffle Furnace Digital | Bioethinics | 16500 | 1 | | | |
| 11. | Bunsen Burner | Bioethinics | 2700 | 1 | | | |
| 12. | Camera Nikon 229 with 8Gb Card | Nikon | 4619 | 1 | 4850 | 3044 | 20/03/2015 |

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| | | | | | | | |
|-----|---|--------|-------|----|--------|------|------------|
| 13. | Ecopage-D Ready Vertical Electrophoresis Unit | | 11110 | 5 | 148635 | 3045 | 23/03/2015 |
| 14. | Ecosub-D Electrophoresis Unit with UV Transparent Tray | | 12250 | 5 | | | |
| 15. | Slimsub-D Electrophoresis Unit with UV Transparent Tray | | 9600 | 1 | | | |
| 16. | Electravolt Power Supply | | 5100 | 4 | | | |
| 17. | UCONCAL5 Analab Conductometer | Analab | 11800 | 1 | 10620 | 3052 | 26/03/2015 |
| 18. | LG Microwave Oven 32 L with Convection | 19000 | 19000 | 1 | 21375 | 3068 | 31/03/2015 |
| 19. | Digital Lux Meter | | 1500 | 1 | - | 3035 | 16/03/2015 |
| 20. | Digital Sound Level meter | | 5800 | 4 | | | |
| 21. | Calorimeter EQ650 | | 7170 | 4 | | | |
| 22. | pH Meter EQ610 | | 6800 | 4 | | | |
| 23. | Pen Type pH Meter | | 900 | 4 | | | |
| 24. | Haemocytometer Set | | 1100 | 20 | | | |
| 25. | Gel Rocker | | 21080 | 1 | | | |
| 26. | Dissecting Microscope | | 975 | 12 | | | |

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086

List of Instruments Purchased under DBT STAR COLLEGE SCHEME (CHEMISTRY)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------|--|----------------------|-------|----------------|------------|--|------------------|
| Sr. No. | Instrument Name | Make (if any) | Rate | Quantity (nos) | Total Cost | College Voucher No. or Dept. Statement No. | Date of purchase |
| 1. | 3 Phase 10 KVA Servo Stabilizer | Automate Instruments | 26500 | 1 | 29812.5 | 3047 | 5/3/2015 |
| 2. | Platinum electrode | Equiptronics | 1140 | 4 | 5130 | 3048 | 16/3/2015 |
| 3. | Digital Polarimeter with electronic sensor and unbreakable 20 cm & 10 cm tubes EQ/801 | Equiptronics | 21600 | 2 | 48600 | 3049 | 19/3/2015 |
| 4. | Drying Cabinette fitted with R.I. Heating bulb & dimmer | | 3400 | 6 | 22950 | 3050 | 21/3/2015 |
| 5. | Medico centrifuge with 8 x 15 ml tube adopter model R - 303 (Sr. No. 2 BAN.1163, 1164, 1165, 1166, 1168, 1178) | Remi | 5040 | 6 | 34020 | 3051 | 25/3/2015 |
| 6. | Premier Electronic Balances Model : PSP103 Capacity : 100 g Accuracy : 0.001 g Sr. | Premier | 18000 | 5 | 101250 | 3056 | 30/3/2015 |

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086

| | | | | | | | |
|-----|---|--------------|------------------------------|------------------|----------|------|-----------|
| | No.:15034008,9,11,12,13 Ver. Q. : A/15 | | | | | | |
| 7. | Multiparameter meter for water analysis supplied with required electrodes & a stand model CMP - 01 | Contech | 98800 | 1 | 111150 | 3057 | 30/3/2015 |
| 8. | Digital colorimeter with disc type 8 built in filters EQ/650 A | Equiptronics | 6764 | 1 | 7609.5 | 3058 | 30/3/2015 |
| 9. | Digital conductivity meter with cell K = 1 EQ/660 B | Equiptronics | 6262 | 1 | 7044.75 | 3058 | 30/3/2015 |
| 10. | Digital potentiometer EQ/603 | Equiptronics | 4230 | 1 | 4758.75 | 3058 | 30/3/2015 |
| 11. | Digital pH meter with built in mag. Stirrer supplied with electrode EQ/614 A | Equiptronics | 6973 | 2 | 15689.25 | 3058 | 31/3/2015 |
| 12. | Spare Filters for Flame Photometer (a) Calcium (b) Lithium (c) Strontium (d) Magnesium | Equiptronics | 3472 3472 3472 3472 | 1 1 1 1 | 15624 | 3059 | 30/3/2015 |
| 13. | Digital pH meter with built in mag. Stirrer supplied with electrode EQ/614 A | Equiptronics | 6973 | 1 | 7844.625 | 3062 | 31/3/2015 |

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)**R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086**

| | | | | | | | |
|-----|---|-----------|-------|---|-------|------|-----------|
| 14. | Atharva Water Ring Vacuum Pump Model AWR - 75 | Atharva | 95000 | 1 | 97988 | 3070 | 30/3/2015 |
| 15. | Pen Drive | Transcend | 260 | 1 | 260 | 3004 | 9/1/2015 |

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086

List of Instruments Purchased under DBT STAR COLLEGE SCHEME (PHYSICS)

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
|---------|--|---------------|-------|----------------|------------|--|------------------|
| Sr. No. | Instrument Name | Make (if any) | Rate | Quantity (nos) | Total Cost | College Voucher No. or Dept. Statement No. | Date of purchase |
| 1. | 500 Gm Electronic Balance | - | 25500 | 1 | 58500 | 3024 | 12/02/2015 |
| 2. | Single Phase 10 kva Servo Stabilizer | Servo | 26500 | 1 | | | |
| 3. | CIE Brand Digital Multimeter Model 122 | CIE | 21500 | 10 | 21500 | 3025 | 16/02/2015 |
| 4. | Hall Effect Apparatus | | 5000 | 2 | 219712 | 3026 | 28/02/2015 |
| 5. | Travelling Microscope 3 Motion SS Scale | Ajanta | 8000 | 4 | | | |
| 6. | Spectrometer 7" PC SS Scale 1 min | Ajanta | 8500 | 5 | | | |
| 7. | Signal Generator 2MHz with digital display Vavcord GSS2 MD | | 7800 | 5 | | | |
| 8. | LVDT Trainer | | 10000 | 2 | | | |
| 9. | Starin Guage Trainer | | 10000 | 2 | | | |
| 10. | Newton's Ring Microscope cat. No. 1573 | | 8500 | 1 | | | |

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086

| | | | | | | | |
|-----|--|--|-------|---|----------|------|------------|
| 11. | Newton's Ring Apparatus cat. No. 1571 | | 800 | 1 | | | |
| 12. | Newton's Ring Apparatus cat. No. 1572 | | 500 | 1 | | | |
| 13. | Nicol Prism | | 4000 | 2 | | | |
| 14. | Calcite Prism | | 6000 | 1 | | | |
| 15. | Quartz Prism | | 4000 | 2 | | | |
| 16. | Microprocessor KIT ANSHUMAN-8085 | | 6500 | 2 | 13650 | 3027 | 17/02/2015 |
| 17. | Travelling Microscope | | 8500 | 1 | 23062.50 | 3028 | 05/03/2015 |
| 18. | SCMOS 2MP | | 12000 | 1 | | | |
| 19. | Optical Bench 11/2 Mtr long Complete Set | | 69500 | 1 | 78187 | 3032 | 07/03/2015 |
| 20. | Kater's Pendulum with brass square rod | | 16500 | 2 | 56812.50 | 3042 | 14/03/2015 |
| 21. | Kater's Pendulum with SS square rod | | 17500 | 1 | | | |
| 22. | Startracker 150/750 EQ2 | | 17778 | 1 | 22599 | 3043 | 20/03/2015 |
| | Carry bag Padded for Ota | | 1560 | 1 | | | |
| | Carry bag Padded for EQ | | 750 | 1 | | | |



STAR College Scheme

Photo Gallery

Hindi Vidya Prachar Samiti's

RAMNIRANJAN JHUNJHUNWALA COLLEGE

OF ARTS, SCIENCE & COMMERCE

Ghatkopar (West), Mumbai-400 086, Maharashtra, INDIA.

Tel No.: +91 22 25151763 Fax No.: +91 22 25150957 Website: www.rjcollege.edu.in Email: rjcollege@rjcollege.edu.in

STAR COLLEGE SCHEME, HRD Division

Department of Biotechnology, Ministry of Science & Technology

Block-2, 6th to 8th Floor, CGO Complex, Lodi road, New Delhi-110003.

FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

R J COLLEGE OF ARTS, SCIENCE AND COMMERCEGHATKOPAR (W), MUMBAI 400 086

Photo Gallery of Dr. Suman Govil, Co-ordinator, DBT STAR COLLEGE



FIRST YEAR PROGRESS REPORT of DBT STAR COLLEGE SCHEME (2014-15)

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**"Jagar Janavinha" Award for
Women Safety by Govt. of
Maharashtra**

2013

**'Best Teacher Award' by
Government of Maharashtra**

2011

**IMC RBNQ Award 'Performance
Excellence' for the year 2009**

2010

'ISO 9001:2008' Certified

2010

**NAAC Re-Accredited 'A'
Grade**

2009

**Best College' by
University of Mumbai**

2008

Hindi Vidya Prachar Samiti's

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