

# DBT STAR COLLEGE SCHEME

## ANNUAL PROGRESS REPORT (2021-2022)

(Participating Departments: Botany, Chemistry, Mathematics, Physics and Zoology)

BT/HRD/11/021/2020 dated 29<sup>th</sup> February 2020

**Submitted to**



**DEPARTMENT OF BIOTECHNOLOGY**  
**Ministry of Science and Technology**  
**New Delhi – 110 003**

2021-2022

**Submitted by**



**JAMAL MOHAMED COLLEGE** (Autonomous)  
College with Potential for Excellence  
Accredited (3<sup>rd</sup> Cycle) with 'A' Grade by NAAC  
DBT Star College Scheme & DST-FIST Funded  
(Affiliated to Bharathidasan University)  
**Tiruchirappalli-620 020**  
**Tamil Nadu.**

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## Department of Biotechnology

### Proforma for submission of Annual Progress Report supported under Star College

**Part: A**

- 1. Name of the College** : Jamal Mohamed College (Autonomous)
- 2. Name of the Coordinator & Designation** : Dr. A. Shajahan  
Associate Professor of Botany
- Address** : Jamal Mohamed College (Autonomous)  
Tiruchirappalli - 620 020, Tamil Nadu,  
Email: [shajahan.jmc@gmail.com](mailto:shajahan.jmc@gmail.com)
- Phone No.** : +91-94438 74731 & +91-8637672433.
- 3. Assessment duration** : 01/04/2021 to 31/03/2022 Duration in years : 2<sup>nd</sup> year
- 4. Details of Departments Supported:**

S. No.	Name of the Department	Courses offered (B.Sc., M.Sc., PG Diploma certificate)	Regular Faculty members	
			Total=68	
			With Ph.D.	Without Ph.D.
1.	Botany	B.Sc., M.Sc., M.Phil., Ph.D., Diploma in Horticulture (Under UGC - NSQF Scheme)	11	-
2.	Chemistry	B.Sc., M.Sc., M.Phil., Ph.D.,	17	-
3.	Mathematics	B.Sc., M.Sc., M.Phil., Ph.D., Diploma in Insurance and Actuarial Science (Under UGC - NSQF Scheme)	10	2
4.	Physics	B.Sc., M.Sc., M.Phil., Ph.D.,	12	3
5.	Zoology	B.Sc., M.Sc., M.Phil., Ph.D., Diploma in Aqua Culture (Under UGC - NSQF Scheme), CMLT & DMLT	11	2

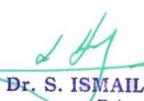
**5. Number & Date of Advisory Committee Meeting:**

*a) Internal and External Advisory Committee Meeting*

S. No.	Nature	Date	Participants
1.	Internal Advisory Committee Meeting	07/10/2020	External Subject Experts, Principal, HOD's, Coordinators and Faculty members from participating departments.
2.	External Advisory Committee Meeting	09/12/2020	DBT Programme officer, External Subject Experts, Principal, HOD's, Coordinators and Faculty members from participating departments.

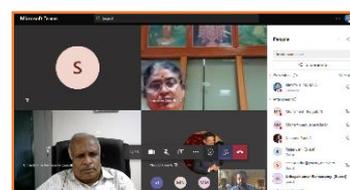
  
**Dr. A. SHAJAHAN**, M.Sc., M.Phil., Ph.D.  
 Dean of Research and Consultancy  
 Coordinator of DBT Star College Scheme &  
 Associate Professor of Botany,  
 Jamal Mohamed College (Autonomous),  
 Tiruchirappalli - 620 020.



  
**Dr. S. ISMAIL MOHIDEEN**  
 Principal  
 Jamal Mohamed College  
 Tiruchirappalli-620 020

b) Mentor and Monitoring meeting

9-2-2022	DBT Star College Mentorship Programme (online) Organized by DBT, Government of India. Participated by Students and faculty member of Botany, Chemistry, Mathematics, Physics and Zoology department.
<b>Department of Botany</b>	
14-03-2022	Dr. Catharin Sara, HOD of Botany, Holy Cross, College, Tiruchirappalli and faculty members of participating department.
26-05-2022	Dr. N. Thajuddin, Professor of Microbiology and Principal Investigator, National Repository of Freshwater Microalgae & Cyanobacteria (Sponsored by DBT, Govt. of India), Bharathidasan University Tiruchirappalli and faculty members of participating department.
<b>Department of Chemistry</b>	
15-12-2021	Dr. D. Nalini, HOD of Chemistry, PSGR Krishnammal College for Women, Coimbatore and faculty members of participating department.
25-03-2022	Dr. Muthulakshmi Andal, Assistant Professor of Chemistry, PSGRK College for Women, Coimbatore and faculty members of participating department
<b>Department of Mathematics</b>	
11-10-21	(i) Dr. N. Rajeswari, Principal & Associate Professor of Mathematics, Sri GVG Visalakshi College for Women (online) (ii) Dr. R. Uthayakumar, Professor of Mathematics, Ghandhigram rural Institute-Deemed to be University and faculty members of participating department.
16-12-2021	Dr. R. Uthayakumar, Professor of Mathematics, Ghandhigram rural Institute-Deemed to be University and faculty members of participating department.
<b>Department of Physics</b>	
06-10-2021	Dr. C. Ravidhas, HOD & Assistant Professor of Physics, Bishop Heber College(Autonomous) Tiruchirappalli and faculty members of participating department.
11-03-2022	(i) Dr. C. Ravidhas, HOD & Assistant Professor of Physics, Bishop Heber College(Autonomous) Tiruchirappalli (ii) Dr. S. Kumaresan, Assistant professor of Physics, National College (Autonomus), Tiruchirappalli and faculty members of participating department.
12-03-2022	Dr. S. Beer Mohamed, Dean- School of Technology and HOD of Material science, Central University of Tamil Nadu ( <b>Advisory Committee member of DBT Star College Scheme of Jamal Mohamed College</b> ) and faculty members of participating department. (online)
<b>Department of Zoology</b>	
23-11-2021	Dr. Horne Iona Averal, Associate Professor & Head of Zoology, Holy Cross College, Tiruchirappalli and faculty members of participating department.
05-03-2022	Dr. Horne Iona Averal, Associate Professor & Head of Zoology, Holy Cross College, Tiruchirappalli and faculty members of department.



18.6.22  
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## All participating departments

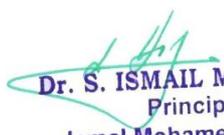
09-02-2022	Dr. P. B. Harathi, Coordinator of DBT Star program PSGR Krishnammal College for women, Coimbatore ( <b>Advisory Committee member of DBT Star College Scheme of Jamal Mohamed College</b> ) and faculty of all participating departments
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### 6. Qualitative improvements due to DBT support, please highlight 5 salient features (within 500 words)

- The existing curriculum has been enriched with the introduction of new experiments, entrepreneurship based hands-on training were imparted, that led to increase the interest of the students in their subjects and improvement of their skills.
- Three of the DBT star college scheme departments established the stand-alone laboratories while the two other departments added new equipment to enhance the experimental knowledge and skills of the undergraduates. These facilities were also utilized to impart laboratory exposure to the school students of the YSSP programme under TNSCST Inspire Scheme.
- The knowledge gathered from the seminars, guest lectures and hands on training programmes organized led to the setting up of biofertilizer (Azolla pond) and mushroom cultivation units, herbal product preparation, setting up of nurseries and poly house cultivation of flowers, drawing chemical structure using Chemdraw software, construction of HAM radio, applications of mathematics using software such as R, Maple and Mathamatica, vedic mathematics and preservation of zoological specimen facilitated the students to improve their subject and entrepreneurial / technical skills.
- Memoranda of Understanding with four organizations, namely the Indian Spectro-Physics Association (ISPA) Chennai, Chiguru CoLab, Bengaluru, Balaji Institute of Computer Graphics, Coimbatore and Decibel Institute of Technology, Tiruchirappalli were inked by the Department of Physics and several skill enhancement programmes conducted as a part of these. The video conferencing facility offered to organize many webinars wherein top ranked faculty and scientists from reputed institutes such as IITs, IISc, acted as resource persons exposing our staff and students to frontier areas of research in science and technology.
- Our staff members attended many FDP organized by our college/other institutions and a number of online MOOC courses. This has led to an improvement of their teaching ability, exposure to ICT tool, increased innovative research activities among the faculty leading to filing of more number of patents, research publications in Scopus indexed journals and receive extra mural research projects.
- Training programmes for laboratory staff were arranged to train them on the following:
  - Good healthy laboratory practices
  - Maintenance and servicing of laboratory instruments
  - Trouble shooting in computers and library management.
- Through group projects, a new feature introduced under DBT Scheme, our students took up many social oriented projects such as
  - ❖ “Value addition of Banana capillary water for developing healthy drink (Phase I- Characterization of capillary water) provides information on validation of traditional knowledge, “Metrics for studying Carbon banking potential for trees of Jamal Mohamed College Campus” with focus on green auditing of the college,

  
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- ❖ “Transesterification reaction and comparative study of the fuel properties of biodiesels produced from used cooking oil” with focus on substitution of fossil fuels and reduction of greenhouse gas emission,
- ❖ “Design and construction of home appliances tapping non-conventional energy resources”, interdisciplinary projects such as “Construction of pest repellent” and “Terrestrial Gamma and Gross alpha radioactivity level in Ariyallur (Fossil city, Tamil Nadu)” “Comparative study on Electric and Conventional(fuel) Vehicles using SPSS” , “A baseline study to detect the presence of Microplastics in Oreochomis mosambicus (Tilapia Fish) of selected waterbodies in Tamil Nadu” with focus on environmental pollution etc.

## 7. Any Novel aspect introduced or planning to introduce during the scheme duration.

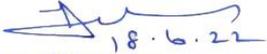
### a) Establishment of DBT Star College Scheme laboratories:

The departments of Botany, Chemistry and Mathematics have established stand-alone special laboratories purely from the financial aid under the “DBT Star College Scheme”. In addition to the newly introduced UG practical experiments, Group Projects and Hand-on Training programmes, these laboratories were utilized for laboratory exposure to the school students under the



YSSP-2022 programme of TNSCST conducted by our college. Dr. R. Srinivasan, Member secretary of TNSCST visited these laboratories during the program and expressed complete satisfaction about the programme.

The Department of Physics is establishing an Astronomy laboratory wherein telescopes for low altitude sky observations are to be installed. Apart from these, identification of asteroids and exo-planets using open-source software and the astronomical data from Hawaii Observatory, provided by our MOU partner Chiguru CoLab, Bengaluru are to be carried out. A Radio Laboratory for HAM Radio communication purposes and a Printed Circuit Board (PCB) laboratory for the development of PCB modules for electronic circuits are also currently being setup

  
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**b) Outcome based socially relevant group projects:**

Mentored by renowned experts, our students took up socially relevant lab-to-land projects such as

**Azolla and Mushroom cultivation units:** These were set up for cultivation of bio-fertilizers and mushrooms

- (i) The Azolla cultivation units were set up under the guidance of our Mentor Dr. N. Thajuddin, Professor, Department of Microbiology, School of Life Sciences, Principal Investigator, National Repository of Freshwater Microalgae & Cyanobacteria (Sponsored by DBT, Govt. of India).
- (ii) Similarly, Mushroom cultivation units were established under the guidance of our mentor Dr. Catherine Sara, Head of the department of Botany, Holy Cross College Tiruchirappalli.



**c) Development of innovative products/ apps/ ideas due to Students participation in interdisciplinary Trainings & Workshops:**

The participation of our students in workshops and trainings organized under DBT Star College Scheme has led to the development of innovative products/ software applications (apps)/ ideas as given below:

**JMC Arboratics:** This is a smart identification Software Application (APP) for trees- in our college premise developed by our student team. This innovation has been registered with the Jamal Innovation & Incubation Centre (JIIC) for startup support and establishment.

**Play Store Link:** <https://rb.gy/xay3vr>



**Aquaponics:** This innovative idea developed by our students has been acclaimed widely and was selected for the **National Science Day 2022** program. Further the members of this team were granted entry into the **Smart India Hackathon 2022** for the problem statement of xerophytic hydrogel for soil less cultivation



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**d) Enrichment of teaching / research / activities of Faculty Members:**

i. The DBT Grant has helped us to connect with prestigious institutions and enabled us to organize many Interdisciplinary Online Faculty Development Programmes. One such notable programme was the One Week FDP on Data Analytics and Mathematical Software Tools organized by the Department of Mathematics of our college in collaboration with the Teaching Learning Centre, Ramanujan College (University of Delhi) under the aegis of Ministry of Education’s Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching.

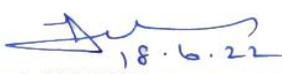


- ii. Eight Patents have been filed by 10 faculty members of Star College Scheme departments.
- iii. A Patent filed by Dr. A. Jafar Ahamed Associate Professor of Chemistry was granted on 31-05-2021. (Patent. No. 368046)
- iv. 57 articles were published in Web of science, Scopus and UGC Care list journals.
- v. Lab manuals and e-content modules were prepared.
- vi. 13 College sponsored ongoing research projects.
- vii. Extra mural Research projects supported by DST (Govt. of India) under DST-SERB and DST-NIF
- viii. Dr. R. Radhakrishnan, Assistant Professor of Botany, was ranked as the “Top 2%, Most Influential Scientists for the Year 2020”, by the Stanford University. <https://insights2techinfo.com/indian-researchers-in-stanford-universitys-top-2-most-influential-scientists-list-for-the-year-2020/>

**e) Popularizing science through effective outreach programs to students of schools and college teachers.**

i. The Zoology department, organized in collaboration with the Tamil Nadu Archeology department, a programme on the “Preservation of Zoological Specimen” in our Zoological Museum to educate the school students and faculty members of neighboring colleges on taxidermy techniques.



  
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**f) Motivating neighboring colleges to apply for DBT Star College Scheme and guidance:**

Taking cognizance of the priorities of the DBT and conscious of the need for improving the undergraduate education in the colleges in our vicinity, we organized an awareness program on the application procedures for the DBT Star College Scheme status and its effective implementation, in collaboration with PSGR Krishnammal College for Women, Coimbatore.

We are proud to state that we mentored and guided the following institutions to apply for DBT-Star college scheme. Of which three colleges have been selected.

- i. Vivekanda College, Thiruvengadam, Madurai,
- ii. G.T.N. College, Dindigul
- iii. Marudhar Kesari Jain College for Women, Vaniyambadi, Tirupattur.
- iv. A.V.V. M Sri Pushpam College, Poondi, Thanjavur.
- v. The New College, Chennai



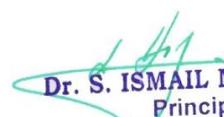
**8. Lessons learnt/ difficulties faced/ suggestions if any, in implementation of the program and utilization of DBT grant (Max 3 point within 300 words)**

The covid-19 pandemic grossly restricted the activities of the whole college in general and the activities of DBT Star College Scheme in particular. However, it was actually a boon for us in that, in compliance with the directions of the state and central governments, we were able to organize many seminars, conferences in the online mode through Zoom/Google meet/ CAMU platform attracting the best experts in the various fields within the limited financial outlay sanctioned under the scheme. Thus the college was privileged to have great scientists namely, Dr. M. Lakshmanan, Prof. of Eminence & DST-SERB National Science Chair, (Bhatnager awardee), Padma Shri Dr. Myilswamy Annadurai, Former Director of ISRO, Dr. Felix Bast, Central University of Punjab, Prof. K. Praveen Karanth, Centre for Ecological Sciences, IISc, Bangalore, Dr. T V Venkateswaran Scientist F, VigyanPrasar, DST (Govt. of India) etc., as resource persons in Seminars, Conferences, Invited lectures etc.,

Further, the lockdowns due to pandemic led to many difficulties in admission process also. This was overcome by conversion of the entire admission process right from submission of application, intimation of selection to the remittance of fees in the online mode. However, this has led to a marginal reduction in intake, which we hope to overcome in the forthcoming years

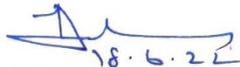
  
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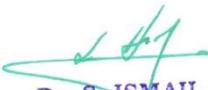
  
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### 9. Key Performance indicators:

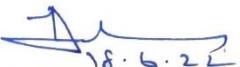
S.No.	Indicator	Pre-Support (2019-2020)	During/ After support(2020-2021)	During/ After support(2021-2022)	Remarks									
1.	No. of Students Admitted	<b>Department of Botany</b>												<p style="text-align: center;"><b>DBT Star College Scheme supported as Govt. Aided Men's college departments.</b></p> <p>The reduction in strength may be attributed by two causes.</p> <p>(i) The economic downturn due to covid-19, drained the financial resources of the populace making the parents unable to afford their children's education</p> <p>(ii) As social distancing was implemented, all the admission process was made in online mode. As most of our prospective students are from rural areas, it was hard for them to keep track of the deadlines even after multiple extensions.</p>
		Total=44				Total=44				Total=27				
		M=44				M=44				M=27				
		SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G	
		9	-	-	35	9	-	-	35	2	0	19	6	
		<b>Department of Chemistry</b>												
		Total=110				Total=111				Total=107				
		M=110				M=111				M=107				
		SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G	
		8	-	-	102	14	-	-	97	7	0	85	15	
		<b>Department of Mathematics</b>												
		Total=73				Total=73				Total=59				
		M=73				M=73				M=59				
		SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G	
		7	-	-	66	9	-	-	64	8	2	40	9	
		<b>Department of Physics</b>												
		Total=57				Total=58				Total=47				
		M=57				M=58				M=47				
		SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G	
		1	-	-	56	4	-	-	54	4	1	35	7	
<b>Department of Zoology</b>														
Total=43				Total=43				Total=29						
M=43				M=43				M=29						
SC	ST	OBC	G	SC	ST	OBC	G	SC	ST	OBC	G			
3	3	-	37	11	-	-	32	3	2	18	6			
2.	No. of students passing out (%)Students Admitted/passing out (pass%)	Botany	96.43%	100%	End Semester Examination for 2021-2022 Scheduled on June-2022.									
		Chemistry	98.92%											
		Mathematics	98.31%											
		Physics	100%											
		Zoology	97.06%											
3.	Drop-out rates	Botany	11%	14%	11%									
		Chemistry	5%	14%	13%									
		Mathematics	27%	0%	11%									
		Physics	16%	8%	10%									
		Zoology	7%	9%	10%									

  
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S.No.	Indicator	Pre-Support (2019-2020)		During/ After support(2020-2021)	During/ After support(2021-2022)	Remarks
4.	No. of students Opting for M.Sc.,	Botany	19	12	16	
		Chemistry	46	51	66	
		Mathematics	17	20	29	
		Physics	19	17	18	
		Zoology	12	11	22	
5.	Average marks (*cut-off marks for admission)	Botany	56%	57%	73%	
		Chemistry	65%	63%	79%	
		Mathematics	66%	66%	74%	
		Physics	65%	65%	77%	
		Zoology	61%	60%	61%	
6.	No. of Hands-on Experiment being conducted	Botany	4	9	9	
		Chemistry	5	8	8	
		Mathematics	-	5	8	
		Physics	-	3	3	
		Zoology	-	5	11	
7.	No. of New Experiments introduced	Botany	-	10	10	
		Chemistry	-	3	3	
		Mathematics	-	16	16	
		Physics	-	7	7	
		Zoology	-	13	13	
8.	Publications (Scopus indexed)/ patents, if any.	Botany	4	5	12	
		Chemistry	5	8	23	
		Mathematics	11	11	12	
		Physics	6	6	8	
		Zoology	10	11	10	
9.	Training received by faculty	Botany	2	30	46	
		Chemistry	6	32	50	
		Mathematics	14	23	31	
		Physics	0	34	61	
		Zoology	1	25	30	
10.	Exhibitions/Seminars/training courses conducted	Botany	1	7	7	
		Chemistry	1	7	7	
		Mathematics	3	10	12	
		Physics	1	9	11	
		Zoology	2	3	8	

  
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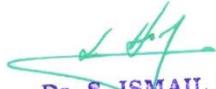


  
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S.No.	Indicator	Pre-Support (2019-2020)		During/ After support(2020-2021)	During/ After support(2021-2022)	Remarks
11.	Books/Journals subscribed from grants	Botany	-	9	5	During the FY 2021-22, essential books were purchased under contingency grant
		Chemistry	-	16	--	
		Mathematics	-	98	--	
		Physics	-	16	17	
		Zoology	-	25	20	
12.	Outreach activities (Popular lectures)	Botany	-	4	4	
		Chemistry	-	2	8	
		Mathematics	-	4	10	
		Physics	-	4	8	
		Zoology	-	4	6	
13.	College mentored to apply for DBT Star College grants	-		i. Vivekanda College, Thiruvadam, Madurai. ii. G.T.N. College, Dindigul. Marudhar Kesari Jain College for Women, Vaniyambadi, Tirupattur. iii. A.V.V.M Sri Pushpam College, Poondi, Thanjavur. iv. The New College, Chennai		
14.	Invited lectures	Botany	7	12	12	
		Chemistry	2	3	9	
		Mathematics	3	7	12	
		Physics	5	9	11	
		Zoology	4	5	8	

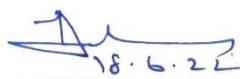
  
 18.6.22  
**Dr. A. SHAJAHAN**, M.Sc., M.Phil., Ph.D.  
 Dean of Research and Consultancy  
 Coordinator of DBT Star College Scheme &  
 Associate Professor of Botany,  
 Jamal Mohamed College (Autonomous),  
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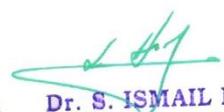
  
**Dr. S. ISMAIL MOHIDEEN**  
 Principal  
 Jamal Mohamed College  
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## 10. Self-evaluation

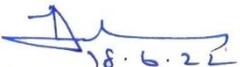
Department	Objective(as stated in proposal)	% achieved	Reason for underachievement/ If achieved, state in Quantitative metrics
<b>Botany</b>	To strengthen the existing curriculum, practical courses are enriched by introducing new application oriented practicals in the respective discipline.	100%	2
	To enhance the interdisciplinary skills that provides reservoirs of knowledge with maximum connectivity between the subjects.	100%	2
	To implement an interdisciplinary based learning experience in order to understand the application of science and Technology and to select various carrier options in different scientific fields.	100%	2
	To improve the faculty through virtual learning process for efficient, effective and integrated interdisciplinary and applied aspects of respective subjects.	100%	2
	To improve technical support of laboratory staff for active participation in solving the problems in the related field and to improve laboratory conditions with the correct functioning of a management system in laboratory	100%	2
<b>Chemistry</b>	To strengthen the existing curriculum, practical courses are enriched by introducing new application oriented practicals in the respective discipline.	100%	2
	To enhance the interdisciplinary skills that provides reservoirs of knowledge with maximum connectivity between the subjects.	100%	2
	To implement an interdisciplinary based learning experience in order to understand the application of science and Technology and to select various carrier options in different scientific fields.	100%	2
	To improve the faculty through virtual learning process for efficient, effective and integrated interdisciplinary and applied aspects of respective subjects.	100%	2
	To improve technical support of laboratory staff for active participation in solving the problems in the related field and to improve laboratory conditions with the correct functioning of a management system in laboratory	100%	2

  
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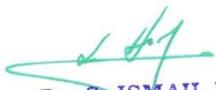


  
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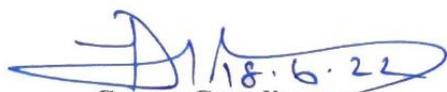
Department	Objective(as stated in proposal)	% achieved	Reason for underachievement/ If achieved, state in Quantitative metrics
<b>Mathematics</b>	To strengthen the existing curriculum, practical courses are enriched by introducing new application oriented practicals in the respective discipline.	100%	2
	To enhance the interdisciplinary skills that provides reservoirs of knowledge with maximum connectivity between the subjects.	100%	2
	To implement an interdisciplinary based learning experience in order to understand the application of science and Technology and to select various carrier options in different scientific fields.	100%	2
	To improve the faculty through virtual learning process for efficient, effective and integrated interdisciplinary and applied aspects of respective subjects.	100%	2
	To improve technical support of laboratory staff for active participation in solving the problems in the related field and to improve laboratory conditions with the correct functioning of a management system in laboratory	100%	2
<b>Physics</b>	To strengthen the existing curriculum, practical courses are enriched by introducing new application oriented practicals in the respective discipline.	100%	2
	To enhance the interdisciplinary skills that provides reservoirs of knowledge with maximum connectivity between the subjects.	100%	2
	To implement an interdisciplinary based learning experience in order to understand the application of science and Technology and to select various carrier options in different scientific fields.	100%	2
	To improve the faculty through virtual learning process for efficient, effective and integrated interdisciplinary and applied aspects of respective subjects.	100%	2
	To improve technical support of laboratory staff for active participation in solving the problems in the related field and to improve laboratory conditions with the correct functioning of a management system in laboratory	100%	2

  
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Department	Objective(as stated in proposal)	% achieved	Reason for underachievement/ If achieved, state in Quantitative metrics
<b>Zoology</b>	To strengthen the existing curriculum, practical courses are enriched by introducing new application oriented practicals in the respective discipline	100%	2
	To enhance the interdisciplinary skills that provides reservoirs of knowledge with maximum connectivity between the subjects	100%	2
	To implement an interdisciplinary based learning experience in order to understand the application of science and Technology and to select various carrier options in different scientific fields.	100%	2
	To improve the faculty through virtual learning process for efficient, effective and integrated interdisciplinary and applied aspects of respective subjects.	100%	2
	To improve technical support of laboratory staff for active participation in solving the problems in the related field and to improve laboratory conditions with the correct functioning of a management system in laboratory	100%	2



Course Coordinator  
(With Seal)

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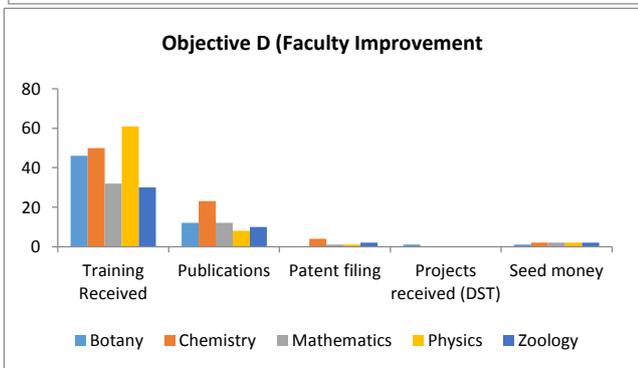
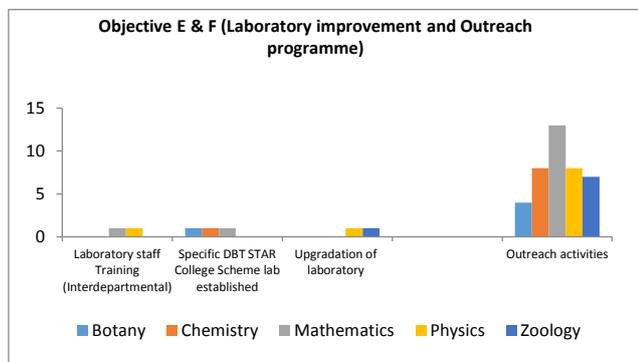
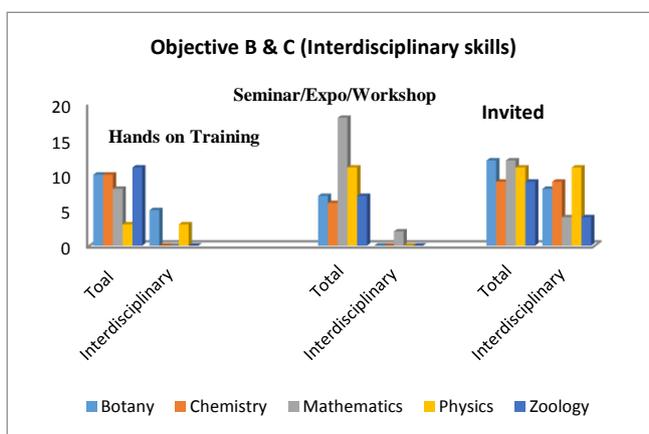
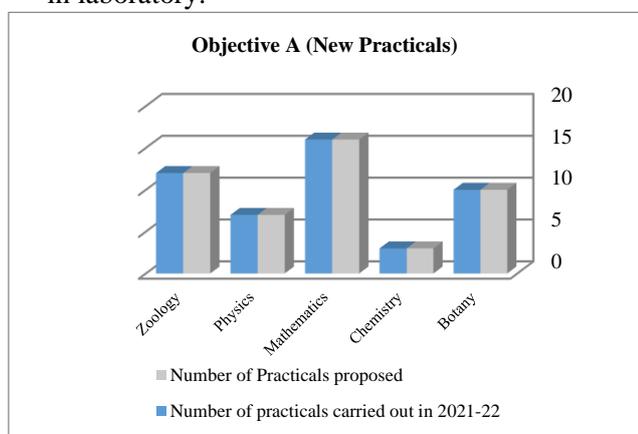
Head of the Institution  
(With Seal)

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**Enclosure-1: Self-evaluation parameters for the year 2021-2022**

**Objectives Stated DBT Star College Scheme Proposal**

- A. To strengthen the existing curriculum, practical courses are enriched by introducing new application oriented practicals in the respective discipline.
- B. To enhance the interdisciplinary skills that provides reservoirs of knowledge with maximum connectivity between the subjects
- C. To implement an interdisciplinary based learning experience in order to understand the application of science and Technology and to select various carrier options in different scientific fields.
- D. To improve the faculty through virtual learning process for efficient, effective and integrated interdisciplinary and applied aspects of respective subjects
- E. To improve technical support of laboratory staff for active participation in solving the problems in the related field and to improve laboratory conditions with the correct functioning of a management system in laboratory.



2. Specific objectives (not more than one page)
- ❖ To strengthen the existing curriculum, practical courses are enriched by introducing new application oriented practicals in the respective discipline.
  - ❖ To enhance the interdisciplinary skills that provides reservoirs of knowledge with maximum connectivity between the subjects.
  - ❖ To implementation of an interdisciplinary based learning experience in order to understand the application of Science and Technology and to select various carrier options in different scientific fields.
  - ❖ To improve the faculty through Virtual learning process for efficient, effective and integrated interdisciplinary and applied aspects of respective subjects.
  - ❖ To improve technical support of laboratory staff for active participation in solving the problems in the related field and to improve laboratory conditions with the correct functioning of a management system in laboratory.
  - ❖ To impart advanced knowledge to the teachers of Government schools of rural area in their discipline to manage the academic and societal issues for the betterment of the region.

3. Measures to be adopted to enhance bench skills of students, project work, summer training & industrial training (department wise); No. of beneficiaries in each.

**Group Projects**  
5th Semester of UG programme, students will be grouped (4-5 students) and given a project on applied aspects of respective UG discipline. Through these project students are encouraged to become active and developing team work, communication and decision making and generated novel issues with pertaining to their project work. The project work will be coordinated by a faculty member and report will be analysed and submitted by group members.

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*(Signature)*  
**PRINCIPAL**  
JAMAL MOHAMED COLLEGE (AUTONOMOUS)  
TIRUCHIRAPPALLI-620 020

*(Signature)*  
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## **PART-B**

### **Proofs for key Performance Indicator**

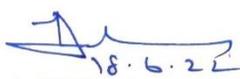
Enclosure-2: 9.6. Hands on experiments being conducted

\*S: Number of Students, B: Beneficiaries, SS: School Students, ST: School Teachers,  
ID: Inter Departmental Programme, IC: Intercollegiate.

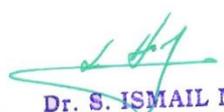
#### **(i) Department of Botany**

- 1. Plant Collection, Processing and Herbarium preparation** - Dr. B. Balaguru, Asst. Professor of Botany, Jamal Mohamed College on 30-09-2021. S:34 (ID.)
- 2. Mushroom Cultivation and Post-Harvest Technology** - Dr. Cathrine Sara, Head, Dept. of Botany, Holy Cross College, Tiruchirappalli on 18-11-2021. S: 75 (ID.)
- 3. Herbal Product Preparation** - Dr. M. Arumugam, Head, Dept. of Botany, JJ College of Arts and Science, Pudukkottai on 20-11-2021. S: 34 (ID.)
- 4. Analytical Techniques for Biology** - Dr. D. Saravanan, Coordinator, NCIF, National College, Tiruchirappalli, 10-12-2021. S: 21 (ID.)
- 5. Phylogenetic techniques** - Dr. P. Chellapandi, Professor and Head of Bioinformatics, Bharathidasan University, Tiruchirappalli on 15-12-2021. S: 43 (ID.)
- 6. Horticulture technique and cultivation of fruit varieties (Field training)** - Dr. M. Satham Hussain, Agriculture officer, Tamil Nadu Horticulture Research Institute, Kudimiyamalai, Pudukkottai on 15-02-2022. S: 25
- 7. Terrace gardening and Bonsai techniques (Field training)** Shri. Lakshmanasamy, Bodhi Bonsai Nursery Garden, Tiruchirappalli on 18-02-2022 S:18
- 8. Greenhouse cultivation of vegetables and flowers (Internship training)** Mr. Bala Siva Prasad, Director, National Horticulture Board from 21<sup>st</sup> to 26<sup>th</sup> Feb. 2022 at Hosur Floriculture garden, Hosur. S: 15.
- 9. Field Survey, Herbarium preparation and Plant identification (Field training)** from 29<sup>th</sup> to 31<sup>st</sup> March 2022 (3 days) at Shola and Evergreen Vegetation in Mudumalai and Udthagamandalam. S: 34



  
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**(ii) Department of Chemistry**

1. **Drawing chemical structure using Chemdraw** - Dr. S. S. Syed Abuthahir & Dr. R. Abdul Vahith, Asst.Prof. of Chemistry, Jamal Mohamed College, Tiruchirappalli 09-10-2021 S:52 (ID.)



2. **Analysis of Soil** - S. N. Anitha, Senior Agricultural Officer, Tiruchirappalli 22<sup>nd</sup> & 23<sup>th</sup> Nov.2022 S: 90

3. **An overview of UV-Visible Spectroscopy: Applications in Day to Day Life**-Dr. D. Suresh, Assistant Professor, School of Chemical and Biotechnology, SASTRA Deemed University, Thanjavur on 04-12-2021. No. of S:78. ((ID.)



4. **Analytical techniques for separation of molecules** -Dr. M. Rajan, Assistant Professor, Dept. of Natural Products Chemistry, Madurai Kamaraj University, Madurai on 17-12-2021. S: 42 (ID)

**Chromatographic Techniques** - Dr. R. Imran Khan, Asst. Professor of Chemistry, Sadakathullah Appa College, Thirunelveli 8 & 9 March 2022 S: 72

5. **Preparation of Solutions** - Dr. G. Rajkumar, Asst. Professor of Chemistry, Vivekanandha College, Madurai on 21 & 22 March 2022 S: 52

6. **Instrumentation of UV-Visible & IR Spectroscopy** - Dr. A. Kosiha & Dr. M. Devenderan, Asst. Professor of Chemistry & Scientific Officer, VELS Institute of Science and Technology, Chennai on 23 & 24 March 2022 S:73

7. **Significance of Water : Quality and Pollution Abatement** -Dr. Muthulakshmi Andal, Assistant Professor of Chemistry, PSGKR College for Women, Coimbatore, 25<sup>th</sup> & 26<sup>th</sup> March 2022 S: 49.

**(iii) Department of Mathematics**

1. **Mathematica Software**- Dr.D.Dhamodharan, Asst. Professor of Mathematics, Jamal Mohamed College, Tiruchirappalli from 6 to 9 Sep. 2021 S: 60.



2. **Maple Software**- Dr.D.Dhamodharan Asst. Professor of Mathematics, Jamal Mohamed College, Tiruchirappalli on 11-09-2021 S: 60.



3. **R Programming**-Dr. G. Arockia Sahaya Sheela, Asst. Professor & Head, Dept. of Data Science, Holy Cross College, Tiruchirappalli from 26 to 28 Oct.2021 S:54.

*18.6.22*  
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4. **Matlab and its Applications: Differentiation** Dr. J. Sengamalaselvi, Asst. Professor of Mathematics, Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya University, Kanchipuram on 1<sup>st</sup> to 3<sup>rd</sup> Nov.2021 **S: 63.**
5. **Matlab and its applications: Integration** Dr. A. Dhanalakshmi, Asst. Professor of Mathematics, Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya University, Kanchipuram on 1<sup>st</sup> to 3<sup>rd</sup> Nov.2021 **S: 63**
6. **SPSS** by Dr. M. Balasubramanian, Assistant Professor, of Statistics, Periyar EVR College, Tiruchirappalli from 1 to 3 Nov.2021 **S: 60**
7. **Matlab and its applications: Ordinary differential equation** by Dr. T. N. Kavitha, Asst. Professor of Mathematics, Sri Chandrasekharendra Saraswathi Viswa Mahavidyalaya University, Kanchipuram on 03-11-2021 **S: 63.**
8. **SageMath Software** - Dr. P. S. Srinivasan Associate Professor Mathematics, Bharathidasan University, Tiruchirappalli on 22 & 23 Nov. 2021 **S: 60**

#### (iv) Department of Physics

1. **Servicing of Electronic Gadgets and Home Appliances** by Mr. T. Ramachandran, Dept. of Physics, Periyar EVR College Tiruchirappalli from 9<sup>th</sup> to 11<sup>th</sup> Nov.2021 **S: 52 (ID.)**
2. **Applications of Geospatial Technology in Resource Management** by Dr. B. Balaguru, Asst. Professor of Botany Jamal Mohamed College Tiruchirappalli from 25<sup>th</sup> to 30<sup>th</sup> Nov.2021 **S: 22 (ID.)**
3. **Assembling of HAM Radio Transmitters and Weak Signal Propagation Reporting System** by Mr. Sunil Aruldas (VU3ZAN) HAM Radio Operator MK 90 Active HAMs Group Tiruchirappalli on 04-03-2022. **S: 25 (ID.)**



#### (v) Department of Zoology

1. **Inventory methods in conservation biology** -Dr. M. Salahudeen, Assistant Professor, Dept. of Zoology, Jamal Mohamed College on 06.09.2021 **S: 36**
2. **Biostatistics in MS Excel and SPSS**-Prof. S. N. Sheik Umar Sahith, Professor, Dept. of Zoology, Jamal Mohamed College on 15.09.2021. **S: 35**
3. **Birdwatching and Photography**-P. A. Ashique, Assistant Professor, Dept. of Zoology, Jamal Mohamed College on 18.09.2021. **S: 35**



  
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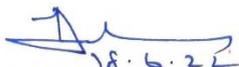
4. **Plant extraction Techniques**-Naveen, Precision scientific, Tiruchirappalli on 21-10-2021. S: 18
5. **Bird watching and Surveying**-P. A. Ashique, Asst. Professor of Zoology, Jamal Mohamed College on 23-10-21. S: 35
6. **Plankton sampling and Identification**-Dr. R. Krishnamoorthy, Assistant professor, Dept. of Zoology, Jamal Mohamed College on 23-10-21. S: 35.
7. **Water quality Analysis**-Dr. Hussain Syed Bava, Associate Professor of Zoology, Jamal Mohamed College on 23-10-21. S: 35
8. **Analytical Instruments**-Mr. R. Gopinathan, Technical Officer, Remi groups of instruments, Chennai on 23-11-21. S: 30.
9. **Effective Planning in Library Management**-Dr. A. Abdul Hassan Librarian, Jamal Mohamed College on 11-01-2021. S:21.
10. **Analysis of Water Quality Parameters**-Dr. R. Abdul Vahith, Asst. Professor of Chemistry, Jamal Mohamed College on 08-03-2022. S: 50.
11. **Preservation of Zoological specimens**-Pakirisami and Sivakumar, Curators, Govt. Museum, Tiruchirappalli & Pudukottai from 23<sup>rd</sup> to 28<sup>th</sup> March 2022 S:34.

### Enclosure-3: 9.7. New Experiment Introduced

#### (i) Department of Botany

1. **Cytology, Genetics and Evolution (III Semester)** 1. Study of polyploidy in onion root tips after treatment with colchicine
2. **Plant Molecular Biology (IV Semester):** 2. Isolation of genomic DNA from plant cell using CTAB method (Group practical). 3. Quantification DNA using Spectrophotometer (Group practical). 4. Separation of DNA using horizontal Agarose gel electrophoresis (Group practical)
3. **Biochemistry, Biophysics and Plant Systematics (V Semester):** 5. Preparation of buffer solutions at different molarities and to check their pH using pH meter. 6. Quantitative estimation of plant pigments using Spectrophotometer. 7. Separation and estimation of protein by vertical SDS-PAGE gel electrophoresis (Group practical).



  
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4. **Microbiology, Plant pathology, Plant Biotechnology, Plant ecology and Phytogeography (VI Semester):** 8. Growth curve of bacteria by Turbidimetric method. 9. Cultivation and sub-culturing of microbial cultures. (Group practical) 10. Organogenesis of medicinal plant (Group practical).



**(ii) Department of Chemistry**

1. **Volumetric and Photometric estimation (I Semester):** 1. Estimation of Aspirin in commercial samples, 2. Estimation of Trace chromium in food samples. 3. Estimation of Iron content in food items [ Vitamin Tablets, Flour and Tea samples]
2. **Gravimetric estimation and spectrophotometric study of metal complexes (V Semester):** 4. Copper – EDTA Complex, 5. Cobalt –Hydrazinate complex, 6. Zinc – EDTA Complex, 7. Chloro Cuprate complex.
3. **Physical Chemistry -Non Electrical (VI Semester):** 8. Determination of molecular weight of polymer by Ostwald Viscometer.



**(iii) Department of Mathematics**

1. **Statistical Lab using R: R-Programming (III Semester):** 1. Creating Vectors, Matrices, Factors and plotting graphs 2. Import data 3. Working with variables and Data 4. Logical statements, 5. Graphing with 'R' 6. Summary statistics: Mean, standard deviation, Chi-square test, t-Test & ANOVA.



2. **Maple and Mathematica (V Semester):** Maple: 7. Mathematical Constants, 8. Complex Numbers 9. Arithmetic, Numerical, Elementary, Special Function 10. Generalized and Number Theoretic Functions 11. Statistical Distributions Mathematica 12. Linear Programming problems 13. Eigen values and Eigen vectors of a matrix of order 4 X 4 or higher order 14. Non-linear equations 15. Differentiation and Integration 16. System of ordinary differential equations.

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(iv) Department of Physics

1. Heat and Optics Practical (II Semester):

1. Measurement of Dielectric Constant of solids and liquids using LCR Meter

2. Thermal and Electricity Practical (III Semester):

2. Measurement of specific charge of an electron (e/m) by Thomson's method 3. Measurement of the charge of an electron by Millikan's oil drop method.

3. Measurement and Calibration Practical (IV Semester)

4. Measurement of wavelength of monochromatic light using Fresnel Biprism 5. Measurement of wavelength of monochromatic light using Michelson's Interferometer

4. Optics and Numerical Programming Practical

(V Semester): 6. Determination of Rydberg's constant using a grating 7. Determination of the specific rotatory power of solution using a Polarimeter by monochromatic light.



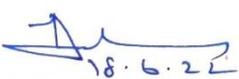
(v) Department of Zoology

1. **Biology of Invertebrates & Chordates (I Semester):** 1. Collection and Identification of mosquitos; Culture of insect associated microbes (Group practical) 2. Culture of Zooplankton (Group practical)

2. **Biostatistics, Bioinformatics, Computer Application, Genetics Microbiology and Developmental biology (III Semester):** 3. Analytical chemistLY of water and screening of radioactive properties. 4. Preparation of herbal extract and studies on antimicrobial activities.

3. **Cell and Molecular Biology (IV Semester):** 5. Squash preparation of Salivary Gland of Drosophila larva for Polytene Chromosome. 6. Isolation of DNA from blood samples (Group practical) 7. Separation of DNA using Agarose gel electrophoresis (Demo)



  
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4. **Animal Physiology (V Semester):** 8. Fractionation and characterization of human salivary proteins by Column chromatography — Demo. 9 Study of blood and epithelial cells. 10. Enzyme Kinetics of Acid phosphatase activity in relation temperature & pH



5. **Biochemistry, Biophysics, Immunology, Economic Entomology, Evolution and Environmental Biology (VI Semester):** 11. Paper Chromatography (Individuals). 12. Rocky shore, muddy shore and sandy shore field visit and tracking. 13. Collection and quality analysis of water samples from pond and Aquaculture pond.

## Enclosure-4: 9.8. Publications (Scopus indexed)/Patents, if any

### I. Web Link for details about Publications:

<https://drive.google.com/file/d/1JsLTA5-tDvIgsGd0oWK1k7pivcwYT0tM/view?usp=sharing>

### II. Patents filed.

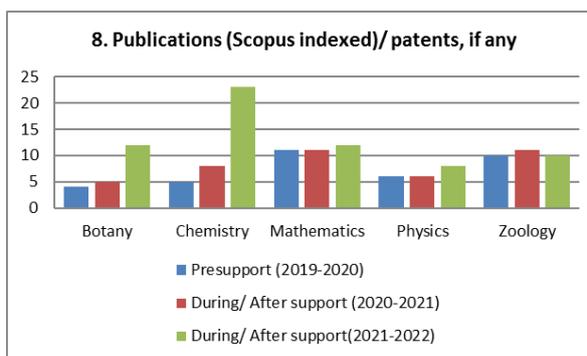
1. Dr. A. Prasanna (Mathematics) has filed a patent on “Machine learning analytics for specialized stock trading”, Application No.202211002430; Publication date: 28-01-2022

2. S.N. Sheik Umar Sahith (Zoology) has filed a patent on “Square Scale, Rectangle Scale and Straight Rulers”. Application No. 202241001278; Publication Date: 28-01-2022.

3. Dr. S. Mohamed Rabeek & Dr. A. Samsath (Chemistry) Begum have filed a patent on “Design and Biological study on new Anti-inflammatory hybrid derivatives”. Application No. 202241006304; Publication date: 11-02-2022.

4. Dr. A. Mohamed Saleem (Physics) has filed a patent for “An Efficient Method for the Synthesis of Nanospheric  $ZnGa_2O_4$  Crystallites and Developing its assembled three dimensional structure”. Application Number: 202041037974A; Publication Date: 04/03/2022

5. Dr. S. Farook Basha & Dr. R. Arulnangai (Chemistry) have filed a patent on “Nanomaterial Based Thermal Indicator”. Application No. 202211010905; Publication date: 11-03-2022.



  
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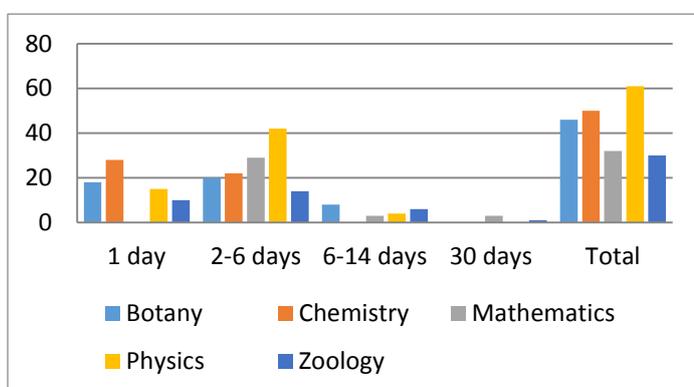
  
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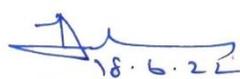
6. Dr. Meeramaideen (Zoology) has filed a patent on “Production of Bio compound from fowl egg shell”. Application No. 202241020134; Publication Date: 04-04-2022.
7. Dr. F. M. Mashood Ahamed (Chemistry) has filed a patent on “Novel Methyl A-D-Rhamnopyranoside Analogues Against Anthrax: Molecular Dynamics Simulations, Molecular Docking, Density Functional Theory, And Admet studies”. Application No. 202211025776; Publication date: 06-05-2022
8. Dr. A. Mushira Banu (Chemistry) has filed a patent on “Novel carbon dots derived *Beta vulgaris* as potential anti-cancer and antioxidant agents”. Application No. 202241030127; Publication date: 03-06-2022.

### Enclosure-5: 9.9. Training Received by Faculty

Web Link for details about Training Received by faculty:

<https://drive.google.com/file/d/1PduZMdl8373YGbYbJoCbXjw2h3d6coCx/view?usp=sharing>



  
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Enclosure-6: 9.10. Exhibition/Seminar/Training Courses

\*S: Number of Students, F: Faculty, B: Beneficiaries, SS: School Students, ST: School Teachers,  
ID: Inter Departmental Programme, IC: Intercollegiate

(i) Department of Botany

- 1. International Webinar on Biological Innovations for Resource Management and Sustainable Development** organized by Department of Botany Resource persons: Dr. Asmah Binti Awal, Dr. Asmah Binti Awal and, Dr. Alawi Bin Hj Sulaiman Universiti Teknologi MARA, Malaysia, Dr. G. Rajaseger, Officer, A\*STAR COVID-19 Diagnostic Lab, Singapore & Ex- Senior Scientist, DMERI @ DSO National Laboratories, Singapore, Dr. Nazeerullah Rahamathullah Gulf Medical University, Ajman U.A.E and Dr. Kasthuriengan Sampath, Joil (S) Pte Ltd, Singapore from 24<sup>th</sup> to 26<sup>th</sup> Aug, -2021. F:71.
- 2. Training Programme on spatial informatics** by Dr. B. Balaguru, Assistant Professor, Department of Botany, Jamal Mohamed College from 4<sup>th</sup> to 8<sup>th</sup> Jan -2022. S:18 (IC)
- 3. FDP on Innovative Teaching and Research methods of Academic Excellence** on 24<sup>th</sup> to 29<sup>th</sup> Jan-2022 organized by Department of Botany. B: 64 (ID)
- 4. National Webinar on Molecular Evolution, Taxonomy and Ecology (4 sessions): (a)** Phylogentic and diversification studies in the endemic Hemedactylus geckos of India reveals an adaptive radiation by Prof. K. Praveen Karanth, Chair, Centre for Ecological Sciences, Bangalore, Karnataka on 16.02.2022.  
**(b)** Biodiversity of Western Ghats by Dr. R. Ramasubbu, Assistant Professor, Department of Biology, Gandhigram Rural University, Tamil Nadu on 16.02.2022.  
**(c)** Molecular phylogeny of Zingiberaceae of North East India by Professor Latha Rangan, Department of Bioscience and Bioengineering(BSBE), Applied Biodiversity Laboratory (ABL) Indian Institute of Technical Guwahati, Assam on 17.02.2022.  
**(d)** Application of molecular data in Angiosperm systematics by Dr. S. Soosairaj, Assistant Professor, Department of Botany, St. Joseph's College(Autonomous), Tiruchirappalli, Tamil Nadu on 17.02.2022.
- 5. Plant Expo 2022** - Exhibition on Bonsai Nursery Cultivation techniques, Medicinal plants, Plant products, Native Trees and Traditional Rice Varieties on 02-03-2022 at Department of Botany. No. of beneficiaries: 112.
- 6. Intercollegiate programme on Effective implementation of DBT Star College Scheme** on 12.03.2022 organized by Department of Botany. F:31 (IC)
- 7. National seminar on Innovative research approaches in Biological sciences**, conducted from 25<sup>th</sup> to 26<sup>th</sup> May 2022, inaugurated by Dr. M. Krishnan, Vice Chancellor, Central University of Tamil Nadu and Dr.N. N. Thajuddin Professor, Department of Microbiology, Bharathidasan University addressed the validation. B: 150



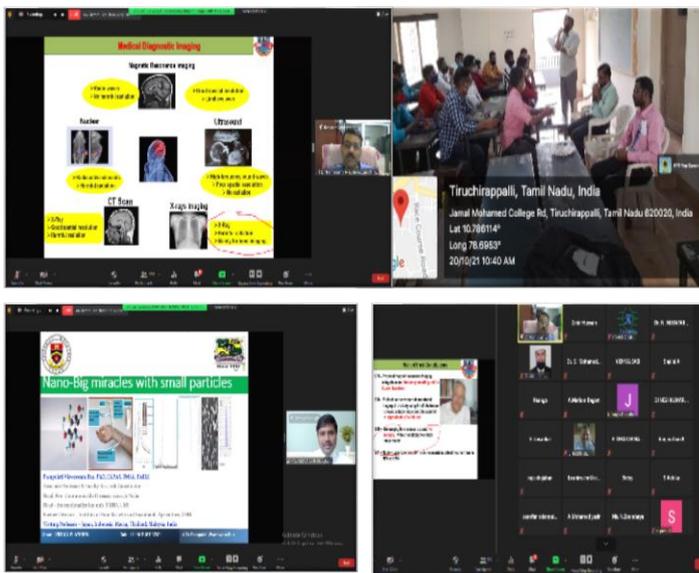
  
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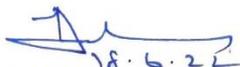


  
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(ii) Department of Chemistry

1. **Online seminar on Drug Delivery**-Dr. V. Raj, Professor and Head, Department of Chemistry, Periyar University, Salem on 06-07-2021. **S:145(IC)**
2. **Intercollegiate Online seminar on Iron Based MRI Contrast Agents**-Dr. R. Mayil Murgan, Assistant Professor, School of Chemistry, Madurai Kamaraj University, Madurai on 17-07-2021. **S:130. (IC)**
3. **Online seminar on Emerging Materials for Solar Hydrogen Production**-Dr. A. Pandi kumar, Scientist-Materials Electrochemistry, Division, CSIR-CECRI, Karaikudi on 27-07-2021. **S: 140. (IC)**
4. **Online seminar on Nano-Big miracles with small Particles**-Dr. Pasupuleti Visweswara Rao, Associate Professor & Research Coordinator, Head of Unit, Non-communicable Diseases Research Niche Areas, Department of Biomedical Sciences and Therapeutics, University of Malaysia, Malaysia on 13-08-2021 **S: 99 (IC)**
5. Awareness on DBT programmes for pursuing higher education and research-Dr. M.Syed Ali Padusha, Associate Professor of Chemistry, Jamal Mohamed College from 20<sup>th</sup> & 21<sup>st</sup> Oct 2021 **S:45. (ID.)**
6. **Training programme on Role of Ionic Liquids** - Dr. A. Ilangovan, Professor of Chemistry, Dean, Faculty of Science Engineering and Technology Bharathidasan University, Tiruchirappalli, 04-03-2022. **F: 30. (ID.)**
7. **International conference on Innovations in chemical and environmental research** - Keynote addressed by Dr. Mohammed Sakhawat Hussain DL, Principal, College of Science and Engineering and Management, London, UK on 25-05-2022. **B: 400**



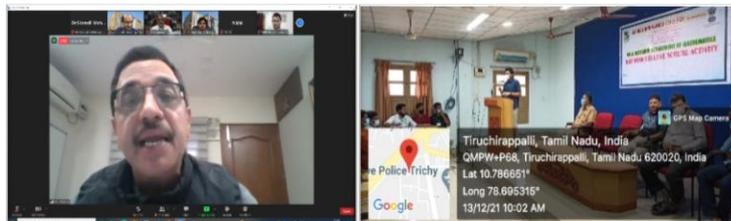
  
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(iii) Department of Mathematics

1. **Workshop on Astronomy**-Dr. S. Ruban Raj, Principal, Iks College of Arts & Science, Trichy on 31.08.2021. **F:** 27
2. **Workshop on Vedic Mathematics**-Mr. Ashwani Jain, Asst. Professor of Mathematics, Khalsa College for Women, Sidhwan Khurd, Ludhiana District, Punjab from 26.10.2021 to 30.10.2021 (5 Days). **S:** 87 (Interdisciplinary- Mathematics-52, Chemistry-28, Physics-7).
3. **Seminar on General Application of Mathematics**-Dr. B. Mohamed Harif, Asst. Professor in Mathematics, Rajah Serfoji Government College, Thanjavur on 10.12.2021 **S:**46
4. **Seminar on Group Theory**-Dr. B. Mohamed Harif, Asst. Professor in Mathematics, Rajah Serfoji Government College, Thanjavur on 11.12.2021. **S:**39
5. **Seminar on Present Trends in Mathematics**-Dr. R. S. Elancheeran, PMRF Fellow, Department of Mathematics, IIT Madras, Chennai on 13-12-2021. **S:**176
6. **Seminar on Applied Mathematics** -Dr. R.S. Elancheeran, PMRF Fellow, Department of Mathematics, IIT Madras, Chennai on 15-12-2021. **S:**61
7. **Seminar on Fractal Analysis and its Applications**-Dr. R. Uthayakumar, Professor of Mathematics, The Gandhigram Rural Institute Gandhigram, Dindigul on 16-12-2021. **S:** 47.
8. **Training Programme on Trouble Shooting in Computers** Mr. N. Mohamed Bayas, System Administrator, Jamal Mohamed College, Tiruchirappalli on 20-12-2021. No. of Beneficiaries: 23. **(ID)**
9. **Virtual Workshop on Differential Equations and its Application** organized by Department of Mathematics on 21<sup>st</sup> & 22<sup>nd</sup> Dec. 2021 **F:**13.
10. **FDP on ICT Tools for E-content Development** organized by Department of Mathematics from 24 to 29 Jan. 2022 **F:**13
11. **Online interdisciplinary workshop on data analysis & mathematical software tools** in association with PMMMNMTT Teaching Learning Centre, Ramanujan College University of Delhi from 26<sup>th</sup> Feb to 3<sup>rd</sup> March 2022 **F:** 160.
12. **Online Quiz programme "Smart Hacks 2021-22"** in association with Electronics & ICT Academy, IIT Kanpur. **S:** 184 **(ID)**



  
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(iv) Department of Physics

1. a) **Online Workshop on Materials Science: A Seesaw of Science and Engineering**-Prof. Mangalaraja Ramalinga Viswanathan, Department of Materials Engineering, Faculty of Engineering, University of Concepcion, CHILE, Latin America on 15-02-2022. S:146. (FN)(IC)



- b) **Online Workshop on Applications of NMR in Battery Research**-Dr. Dorai Arunkuma, Asst. Professor of Physics, Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Japan on 15-02-2022. S: 146. (FN) (IC)



- c) **Online Workshop on Liquid Crystals – An Overview**-Dr. Gurusurthy Hegde, Director, Centre for Advanced Research & Development (CARD), Professor of Materials Science, Department of Chemistry, Christ (Deemed to University), Bengaluru, Karnataka on 15-02-2022. S: 146. (AN) (IC)

- d) **Online Workshop on Birefringence study of NLO crystals by channeled spectrum Method**-Dr. P. Hemalatha, Asst. Professor of Physics, Government Arts College Coimbatore, on 16-02-2022. S: 146. (FN) (IC)

- e) **Online Workshop on Materials Modeling**-Dr. Basherrudin Mahmud Ahmed, Asst. Professor of Physics, School of Physics, Madurai Kamaraj University, Madurai, on 16-02-2022. S: 146. (FN) (IC)

- f) **Online Workshop on “Simulating and visualizing the physical world”** Dr. K. A. Z. Syed Abuthahir, Asst. Professor of Physics, Dr. Zakir Husain College, Ilayangudi, on 16-02-2022. S: 146. (AN) (IC)

2. **Online Training Programme on Image Editing using Inkscape – An Open Source Scalable Vector Graphics Package**-Mr. J. Veeranathan Balaji Institute of Computer Graphics, Coimbatore on 20-10-2021 to 22-10-2021 S: 39 (IC)

3. **Training Programme on Role of Physics in Disaster Forecasting**-Dr. S. Selvaraj Assistant Professor, Department of Geology National College (Autonomous) Tiruchirappalli on 17-11-2021. S: 39 (ID)

4. **Training Programme on Role of Physics in Soil Testing** by N.S. Anitha, Senior Agricultural Officer Soil Testing Laboratory Tiruchirappalli on 18-11-2021. S: 40 (ID)

  
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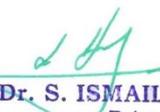


  
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5. **Training Programme on Oncology – Diagnostics and Therapy-** Mr. S. Karthik Chief Medical Physicist & Radiological Safety Officer, Sri Kauvery Health Care, Tiruchirappalli on 19-11-2021. **S: 39 (ID)**
6. **Training Programme for Non-Teaching Staff members on Maintenance and Servicing of Laboratory Instruments-** K.B. Syed Ishack, Department of Physics, Jamal Mohamed College (Autonomous), Tiruchirappalli on 10-01-2022. **B: 22. (ID)**
7. a) **Seminar on Identification of Asteroid Families-** Mr. Surender Ponnalagar, Project Director, Chiguru Colab, Bangalore, National Point of Contact – India, Space Generation Advisory Council on 28-02-2022. **S: 42 (ID)**  
b) **Seminar on HAM Radio Communications-**Mr. S. Sivakumar, District Teacher Education & Training Institute, Kanchipuram on 28-02-2022. **S: 42 (ID)**  
c) **Seminar on Radiation Safety-**Mr. S. L. Ansar Ali, Head, Health Physics Laboratory, Bhabha Atomic Research Centre, Kalpakkam on 28-02-2022. **S: 42. (ID)**
8. a) **Seminar on Sir CV Raman – A Light Legendary and His Invention-**Dr. S. Gunasekaran, TANSA Awardee, Dean, Research & Development, St. Peter's Institute of Higher Education & Research, Chennai on 03-03-2022. **S: 48. (ID)**  
b) **Seminar on Contribution of CV Raman to Science Research-**Dr. M. Selvapandiyan, Associate Professor & Head i/c Department of Physics Periyar University PG Extension Centre, Dharmapuri 03-03-2022. **S: 48. (ID)**
9. **National Webinar on Origin and Utilization of Pyramid Energy-**Dr. M. Jamal Mohamed Jaffar, Associate Professor & Head, Department of Physics, Jamal Mohamed College (Autonomous), Tiruchirappalli on 26-02-2022. **B: 100 (IC)**
10. **Workshop on PCB Making-**Mr. A. R. Kasturi, Proprietor, AK Tronics, Tiruchirappalli on 08-03-2022. **S:48**
11. **Webinar on Asteroid search-**Mr. Surender Ponnalagar, Project Director, Chiguru Colab, Bangalore, National Point of Contact – India, Space Generation Advisory Council on 29-03-2022. **S:33 (ID)**

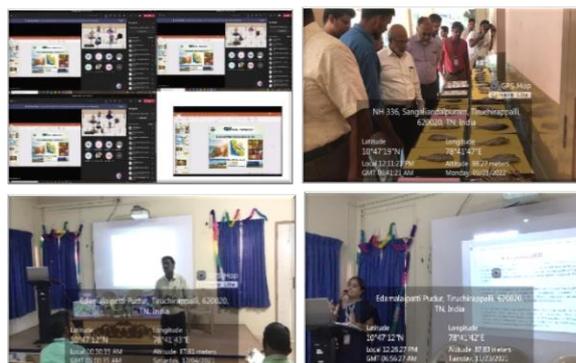
  
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(v) Department of Zoology

1. **Seminar on Commercial importance of Zooplanktons**-Dr. A. Janakiraman, Assistant Professor, Department of Zoology, National College, Tiruchirappalli on 16-11-21. **S: 35**
2. **Seminar on Micro Plastics and their impacts on marine Environment**-D. Gayathri, Assistant Professor, National College, Tiruchirappalli on 23-11-2021. **S: 35**
3. **Webinar on Food and Water Safety**-Dr. Naresh Devarajan, Research Scientist, Food and Water Safety, WFCB, University of California, Davis, USA on 13.08.2021 **S: 35**.
4. **Short term training on Preservation of Zoological Specimens**-Mr. T. Pakirisami Curator Government Museum Pudukkottai on 23-03-22 to 28-03-22. **S: 35**.
5. **Philately Exhibition** Mr. N. Raveendran Founder President Irugukal Amritha Nature Trust Madurai on 08-12-21. **S: 240. (ID)**
6. **Entrepreneurial Development Programme on Aquaculture** by. Mr. V. Suresh Aquarium Consultant Vasantham Aquarium Tiruchirappalli on 04-12-21. **S: 35(ID)**
7. **Entrepreneurial Development Program (EDP): Opportunities in Mariculture** by a) Dr. R. Jayakumar Principal Scientist & Head in Charge b) Dr. B. Johnson Senior Scientist, c) Dr. K.K. Anikuttan, Scientist Central Marine Fisheries Research Institute Indian Council of Agricultural Research Mandapam from 28<sup>th</sup> to 29<sup>th</sup> Sep.2022 **(ID)**
8. **Indian Patent and Patenting**- Dr. S. N. Sheik Umar Sahith, Associate Professor of Zoology, Jamal Mohamed College, Tiruchirappalli on 17-02-22. **S:20 (ID)**



  
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## Enclosure-7: 9.11. Books/Journal Subscribed from Grants

### (i) Department of Botany

1. Research methodology for biological sciences- N. Gurumani (1 copy)
2. Principles and practice of floriculture Nair K. Kumar M. (1 copy)
1. Post harvest methodology of horticulture crops Vol. 07 Horticulture sciences series, Sudheer K.P (1 copy)
3. A text book of seed science and Technology S.Padmavathi (1 copy)
4. Laboratory manual of Biochemistry, Khan (1 copy)

### (iii) Department of Physics

2. A text book of Atomic and Nuclear Physics,2022, Dr. N. Subrahmanyam, ISBN: 9788121904148, S. Chand Publication (2 copies)
3. A text book of Basic Electronics,2021, B L Theraja, ISBN: 9788121925556, S. Chand Publication (2 copies)
4. A text book of Concepts of Astrophysics,2019, A. Mujiber Rahman, ISBN: 9789385983733, Scitech Publication (4 copies)
5. A text book of CSIR-UGC NET/JRF/ Exam. Solved Papers Physical Sciences, Pratiyota Darpan, ISBN: 9789350134191, Upkar Prakashan Publication (1 copy)
6. A text book of Elements of Properties of Matter, 2022 D.S. Mathur, ISBN: 9788121908153, S. Chand Publication (2 copies).
7. A text book of Mathematical Physics,2018, H K Dass, ISBN: 9789352837229, S. Chand Publication (2 copies).
8. A text book of Principles of electronics,2020, V K Metha, ISBN: 9789352838363, S. Chand Publication (2 copies).
9. A text book of UGC NET/JRF/SET Physical Science, Tomar, ISBN: 9788174825278, Upkar Prakashan Publication (2 copies).

### (v) Department of Zoology

1. A text book of Invertebrate,2021, N. Arumugam, N.C Nair, S. Leelavathy, N. Soundara Pandian, ISBN: 9789384826093 Saras Publication (2 copies)
2. A text book of Chordata,2021, N. Arumugam, A. Thangamani, S. Prasanna kumar, L.M. Narayanan, ISBN: 9789382459170 SARAS Publication (2 copies)
3. Animal Physiology,2021, N. Arumugam SARAS Publication (2 copies)
4. Developmental Biology,2021, N. Arumugam ISBN: 9789386519672 SARAS Publication (2 copies)
5. Environmental Biology,2021, N. Arumugam, A., SARAS Publication (2 copies)
6. Biophysics,2021, N. Arumugam, A. SARAS Publication. (2 copies)
7. Biostatistics, computer application and Bioinformatics,2021, N. Arumugam, A. SARAS Publication (2 copies)
8. A Text Book of Embryology (Developmental Zoology),2021, N. Arumugam ISBN: 9789382459767 SARAS Publication (2 copies)
9. Cell and Molecular Biology,2021, N. Arumugam, SARAS Publication (2 copies)
10. Genetics,2021, R. P. Meyyan, SARAS Publication (2 copies)

  
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Enclosure-8: 9.12. Outreach activities (Popular lectures)

\*S: Number of Students, F: Faculty, B: Beneficiaries, SS: School Students, ST: School Teachers, ID: Inter Departmental Programme, IC: Intercollegiate.

(i) Department of Botany

1. Traditional Knowledge documentation and awareness programme conducted by students of Botany department in Amoor village near Salem on 20-04-21 **B:25**
2. Seed Ball preparation & Nursery technique to school teachers and students of Ayesha Girls Matriculation Hr. Sec. School, Tiruchirappalli on 23-11-2021 **F: 12; S:20.**
3. "Awareness on Pollution and its control" to school teachers and students of Ayesha Girls Matriculation Hr. Sec. School, Tiruchirappalli on 02-12-2021. **F: 12; S:40.**
4. Botanical Techniques- Dr. B. Balaguru, Asst. Professor of Botany, Jamal Mohamed College to school teachers and students of Panchayat Union Middle School, MGR Nagar, Nagamangalam, Tiruchirappalli on 20-12-21 **S:40.**
5. International Biodiversity Day: Drawing and Elocution Competition for school children from Karur and Tiruchirappalli Districts on 22<sup>nd</sup> May 2022 **B: 120.**



(ii) Department of Chemistry

1. Chemical structures and their interpretation using chemical software-Dr. M. Purushothasman, Asst. Professor of Chemistry, Jamal Mohamed College & Dr.S.S.Syed Abuthahir, Asst. Professor of Chemistry, Jamal Mohamed College to Government Arts College students, Tiruverumber, Tiruchirappalli on 22-12-2021 **S: 70.**
2. Chemical structure Drawing using Chemdraw-Dr. S. S. Syed Abuthahir, Asst. Professor of Chemistry, Jamal Mohamed College to School Teachers on 08-01-2022 **B: 21**



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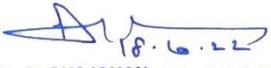
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3. Water Quality Parameters Analysis-Dr. J. Sirajudeen, Asst. Professor of Chemistry, Jamal Mohamed College to School Teachers on 08-01-2022. **B:** 21.
4. Identification of Water Quality Parameters by Dr. R. Abdul Vahith, Asst. Professor of Chemistry, Jamal Mohamed College to Self-Women Help Group People, Barma colony, Navalpattu, Tiruchirappalli on 26-12-2021. **B:** 42.
5. Domestic products preparations-Dr. S.S.Syed Abuthahir, Asst. Professor of Chemistry, Jamal Mohamed College to Self-Women Help Group People, Navalpattu, Tiruchirappalli on 26-12-2021. **B:** 42.
6. Identification of Water Quality Parameters-Dr. R. Abdul Vahith, Asst. Professor of Chemistry, Jamal Mohamed College to Self-Women Help Group People Nagamangalam, Tiruchirappalli on 18-12-2021. **B:** 42.
7. Analysis of water quality Parameters-Dr. R. Abdul Vahith, Assistant Professors of Chemistry, Jamal Mohamed College, Tiruchirappalli on 24-03-2022 UG students of Chemistry, Thanthai Periyar Govt. Arts & Science college, Tiruchirappalli **B:**40.
8. Drawing chemical structure-using Chemdraw Software-Dr. S. S. Syed Abuthahir, Asst. Professors of Chemistry, Jamal Mohamed College, Tiruchirappalli on 24-03-2022 to UG students of Chemistry, Thanthai Periyar Govt. Arts & Science college Tiruchirappalli. **B:**40.

### (iii) Department of Mathematics

1. Theory of Equations-Dr. M. Mohamed Althaf, Assistant Professor, Department of Mathematics, Jamal Mohamed College, Tiruchirappalli to School teachers on 20-11-2021. **ST:** 20
2. Math's & Magic's-Mr. M. Manikandan, District Secretary, Tamil Nadu Science Forum, Tiruchirappalli for Corporation Middle School students of Subramaniapuram, Tiruchirappalli on 10-12-2021. **SS:** 99
3. Activity Based Mathematics Learning by B.Sc. Mathematics Students to Corporation Middle School students of Subramaniapuram, Tiruchirappalli on 10-12-2021. **SS:** 40.
4. Importance of Life Skills Education-Dr. R. Jahir Hussain, Associate Professor of Mathematics, Jamal Mohamed College, Tiruchirappalli to School Teachers on 11-12-2021. **ST:** 15
5. Distribution of Omicron awareness pamphlets to Public's & Students at TVS Tollgate, Trichy on 16-12-2021 & 18-12-2021 **B:** 400



  
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6. Experimental Mathematics by B.Sc. Mathematics Students to Panchayath Union Middle School Students of Gandhinagar, Tiruchirappalli on 18-12-2021. **SS: 30.**
7. Experimental Learning by B.Sc., Mathematics Students to B.H.M High School Students, Tiruchirappalli, 26-02-2022. **SS: 110**
8. Experimental Learning using Mathematic Models by B.Sc., Mathematics Students to Corporation Middle School Students, Airport, Tiruchirappalli on 28-02-2022. **SS:65**
9. We know Science-Dr. D. Dhamodharan, Asst. Professor of Mathematics, Jamal Mohamed College to Corporation Middle School Students, Airport, Tiruchirappalli on 28-02-2022. **SS:42**
10. Experimental Learning using Mathematic models by B.Sc., Mathematics Students to Corporation High School Students, Airport, Tiruchirappalli on 28-02-2022. **SS:42**

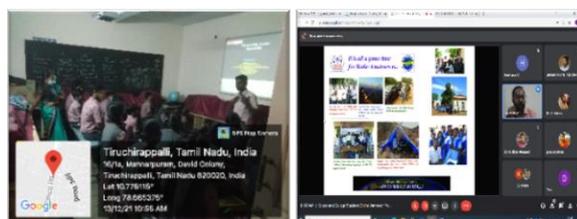
#### (iv) Department of Physics

1. The Great Conjunction of Mars and Venus-Dr. T. V. Venkateshwaran, Senior Scientist, Vigyan Prachar, New Delhi on 12-07-2021. **B: 79.**
2. Online Outreach Programme on World Science Space Programs-Dr. Mylswamy Annadurai, Former Director – ISRO, Bangalore on 04-10-2021. **B: 117**
3. Role of ISRO in the Development of Science and Technology- Mr. V. Rajasekar, Scientist, ISRO – Trivandrum to School Teachers on 20-10-2021. **B: 93**
4. Neutrino – An Elusive Particle-Dr. Mohammad Sajjad Athar, Professor of Physics, Aligarh Muslim University, Uttar Pradesh to School and College Teachers on 16-11-2021. **B: 57**
5. Learning Made Simple- Dr. M. Thirunavukkarasu, Research Associate Department of Educational Technology Bharathidasan University, Tiruchirappalli to School teachers at Bharathi Matric Higher secondary school, Tiruchirappalli- on 13-12-2021 **B: 10**

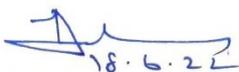
6. Learning Made Simple-Dr. M. Thirunavukkarasu, Research Associate Department of Educational Technology Bharathidasan University, Tiruchirappalli to School teachers at Khajamian Higher Secondary, Tiruchirappalli-. 21-12-2021. **B: 15**



7. Sky-Watch Programme-Mr. S. Jaya Paul, Scientific Assistant (Rtd.), Anna Science Centre – Planetarium, Tiruchirappalli on 17-12-2021. **B: 74**



8. HAM Radio as a Technical Hobby for Social Service-Dr. A. Aslam, Assistant Professor, Department of Botany, Jamal Mohamed College (Autonomous), Tiruchirappalli on 05-02-2022. **B: 82.**

  
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**(v) Department of Zoology**

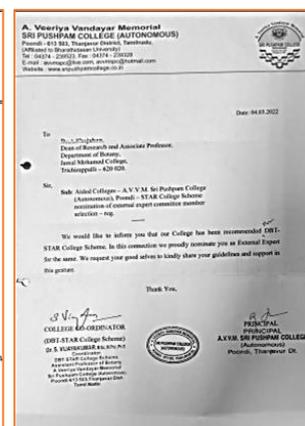
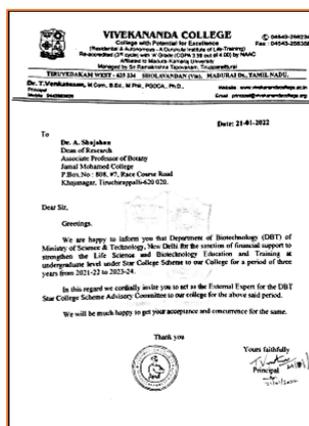
1. Museum Visit for School Students and College Students at Department of Zoology, Jamal Mohamed College, Tiruchirappalli on 8-12-21. **B:** 225.
2. Clinical Waste Disposal-Dr. R. Krishnamoorthy, Assistant Professor, Jamal Mohamed college at Nagamangalam village and MGR Nagar, Tiruchirappalli for the village people on 19-12-21. **B:** 35.
3. Developing Scientific Temper- Dr.R.Krishnamoorthy, Assistant Professor, Jamal Mohamed college at SBIOA matric Hr. Sec. School, Trichy on 28.02.2022. **S:**100.
4. Importance of checking water quality parameters by UG students to school students participated in National Science day celebration on 28-02-22. **S:**40
5. Aquaculture training-Mr.V.Suresh , Aquarium Consultant to school students of Nagamangalam village and MGR Nagar, Tiruchirappalli on 04-01-21. **S:** 56. **(ID)**
6. Philately Exhibition conducted in collaboration with *Iragukal Amritha* Trust, Madurai to school and College students on 8-12-21. **S:** 250



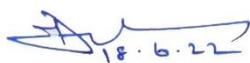
**Enclosure-9: 9.13. College Mentored to apply for DBT Star College**

We mentored and guided the following institutions to apply for DBT-Star college scheme

- i. Vivekanda College, Thiruvengadam, Madurai (Dr.A.Shajahan Coodinator, DBT STAR College Scheme, Jamal Mohamed College),
- ii. G.T.N. College, Dindigul (Dr. M. Syed Ali Padusha, Addl. Coodinator, DBT STAR College Scheme, Jamal Mohamed College),
- iii. A.V.V. M Sri Pushpam College, Poondi, Thanjavur (Dr.A.Shajahan Coodinator, DBT STAR College Scheme, Jamal Mohamed College),
- iv. Marudhar Kesari Jain College for Women, Vaniyambadi, Tirupattur(Dr. M. Syed Ali Padusha, Addl. Coodinator, DBT STAR College Scheme, Jamal Mohamed College),.
- v. The New College, Chennai (Dr. M. Syed Ali Padusha, Addl. Coodinator, DBT STAR College Scheme, Jamal Mohamed College),.



Among these five colleges, Vivekanda College, Thiruvengadam, Madurai, G.T.N. College, Dindigal, A.V.V. M Sri Pushpam College, Poondi, Thanjavur have been selected for DBT Star College Scheme.

  
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Enclosure-10: 9.14. Invited Lectures

\*S: Number of Students, F: Faculty, B: Beneficiaries, SS: School Students, ST: School Teachers, ID: Inter Departmental Programme, IC: Intercollegiate.

(i) Department of Botany

1. Integrated Pest Management -Dr. B. Padmanaban, (Former) Principal Scientist, NRC Banana Research Institute, Thayanur, Tiruchirappalli, 21-10-2021. S:35 (ID)
2. Pandemic disease and importance of Vaccine-Dr. A. Vairamoorthy Administrative officer, Pasteur Institute of India, Coonor, 22-11-2021. S:30 (ID)
3. Novel Biopesticides for crop production-Dr. K.Sahayaraj, Associate Professor of Zoology St. Xaivers College, Palayamkottai, 10-03-2022 S: 28 (ID)
4. Species Recovery and Conservation-Dr. S. Kaliamoorthy Scientist E, National Orchidarium and Experimental Garden BST, SRC, Yercaud on 10-03-2022 (FN). S:28 (ID)
5. Bioprospecting of medicinal plants-Dr. Shanthiraj Asst. Professor of Botany, Holy cross college (Autonomous), Tiruchirappalli , 10-03-2022 (AN). S:28 (ID)
6. Nutraceuticals of Traditional Rice Varieties- Dr.S.Bakiyalakshhmi, Asst. Professor of Biotechnology, Bonsecours College for Women, Thanjavur, 11-03-2022 (FN). S:28 (ID)
7. Developing bioentrepreneur skills among the biological society - Dr.Amzad Basha Kolar, Asst. Professor of Botany, The New College (Autonomous) Chennai , 11-03-2022 (AN). S:28 (ID)
8. Plant viruses in vegetable crops-Dr. K. Kathiravan, Associate Professor of Biotechnology, Madras University, Chennai,14-03-2022. S:28 (ID)
9. Forests Lungs of Earth-Mr. A. Mageshwa, Range Officer, Manaparai Range, Trichirappalli Forest Division, Tamil Nadu Forest Department , 21-03-2022. S:34 (ID)
10. Carrier Opportunities in Biology-Dr. N. Sisubalan, Assistant Professor, Department of Botany, Bishop Heber College Tiruchirappalli ,13-12-2021. S:28 (ID)



  
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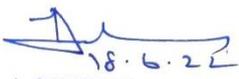


  
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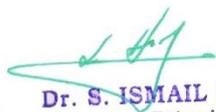
11. The Way forward: Technology for enabling rural Economy-Dr. A. Sangeetha, Assistant Professor, Department of Nutrition and Dietetics, Jamal Mohamed College, Tiruchirappalli on 17-12-2021. **S:28. (ID)**
12. Science and Technology for Sustainable Future-Dr. Cathrine Sara, Assistant Professor & Head, Department of Botany, Holy Cross College, Tiruchirappalli, 25-02-2022. **S:150 (ID)**

### (ii) Department of Chemistry

1. Impact of pesticides on environmental and human Health-Dr. N. Vasimalai, Asst. Professor of Chemistry, BS Abdur Rahman Crescent Institute of Science and Technology, Chennai, 27-10-2021. **S:9 (ID)**
2. Building an innovation Ecosystems in Colleges -Dr. S. Senthamarai, Associate professor & Head, Department of Economics and Dr. Sujatha Elangovan, Assistant Professor, Department of Zoology, Holy Cross College(A), Tiruchirappalli on 10-01-2022. **F: 107 (ID)**
3. Citation of Database-Dr. R. Balasubramani, Associate Professor, Department of Library and Information Science, Bharathidasan University Tiruchirappalli on 24-01-2022. **F: 69 (ID)**
4. Scholarly Information Resources-Dr. C. Ranganathan, Associate Professor, Department of Library and Information Science, Bharathidasan University Tiruchirappalli on 25-01-2022. **F:69 (ID)**
5. Entrepreneurship & Startups-Dr. N. Prasanna Director i/c Bharathidasan University Entrepreneurship, Innovation and Career Hub (BECH)Bharathidasan University, Tiruchirappalli on 27-01-2022. **F: 69 (ID)**
6. Business Opportunity Identification and Market Survey-Er. D.Ravi, Proprietor, Techny Chemy Tiruchirappalli on 27-01-2022. **F: 69 (ID)**
7. Quality Research Writing-Dr. S. Senthilnathan, Director (FAC) UGC - Human Resource Development Centre (HRDC) Bharathidasan University Tiruchirappalli on 28-01-2022. **F: 69 (ID)**
8. Digital learning and Teaching-Dr. Elavazhagan Kannan Librarian & Chief Knowledge Officer Indian Institute of Management Tiruchirappalli on 29-01-2022. **F: 69 (ID)**
9. Contribution of noble laureates to Science and Technology-Dr. Iruthaiya Jothi, Assistant Professor, Department of Chemistry, St. Joseph's College (Autonomous) Tiruchirappalli on 25.02.2022. **F: 40 (ID)**

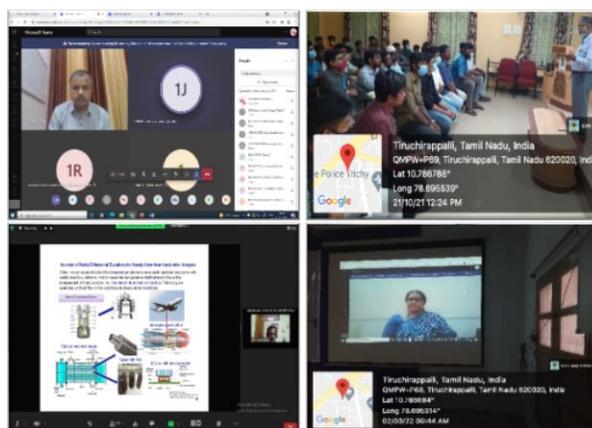
  
18.6.22  
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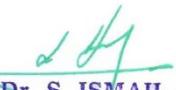
(iii) Department of Mathematics

1. LaTeX for Beginners-Dr. D. Dhamodharan, Asst. Professor of Mathematics, Jamal Mohamed College, Tiruchirappalli on 13-09-2021. S:60
2. Continuity and Differentiability-Dr. M. Marudai, Honorary Professor of Mathematics, Bharathidasan University, Tiruchirappalli on 21-10-2021. S:40.
3. Online lecture on Calculus-Dr.Surinder Mohan Deep, Associate Professor & Head, Department of Mathematics, Govind National College, Narangwal District, Ludhiana on 11-11-2021. S:44
4. Linearization Technique for nonlinear BVPs and Applications to Fluid Flow Problems-Dr. Satyajit Roy, Professor, Department of Mathematics, Indian Institute of Technology Madras, Chennai on 21-12-2021. S:125
5. Online Lecture on Employment Prospects for Mathematics Aspirants-Dr. Richa Brar, Asst. Professor of Mathematics, Sri Guru Granth Sahib World University, Fatehgarh Sahib. Punjab on 15-11-2021. S:41
6. Online lecture on Partial Differential Equations and their Applications-Prof. R. Sahadevan, Former Director and Head, Former UGC Emeritus Fellow, Ramanujam Institute for Advanced Study in Mathematics, University of Madras on 21-12-2021. S:125.
7. Online programme to commemorate National Mathematics Day: Lecture on Applications of Linear Differential Equations-Dr. P. Kandaswamy, Professor & Head (Rtd.), Bharathiar University, Coimbatore on 22-12-2021. S:53.
8. Online programme to commemorate National Mathematics Day: Lecture on Applications of Linear Differential Equations by Prof. M. Lakshmanan, Professor of Eminence & DST – SERB National Science Chair, Department of Nonlinear Dynamics, School of Physics, Bharathidasan University, Tiruchirappalli on 22-12-2021. S:53.
9. Computations of Molecular Descriptors-Dr. Sr. S. Kulandai Therese, Asst. Professor in Mathematics & Deputy Principal, St. Mary's College, Thoothukudi on 28-02-2022. S:33 (ID)
10. Challenges in Computations of Molecular Descriptors-Dr. S.Prabhu, Associate Professor of Mathematics, Rajalakshmi Engineering College, Chennai on 28-02-2022. S:33 (ID)



  
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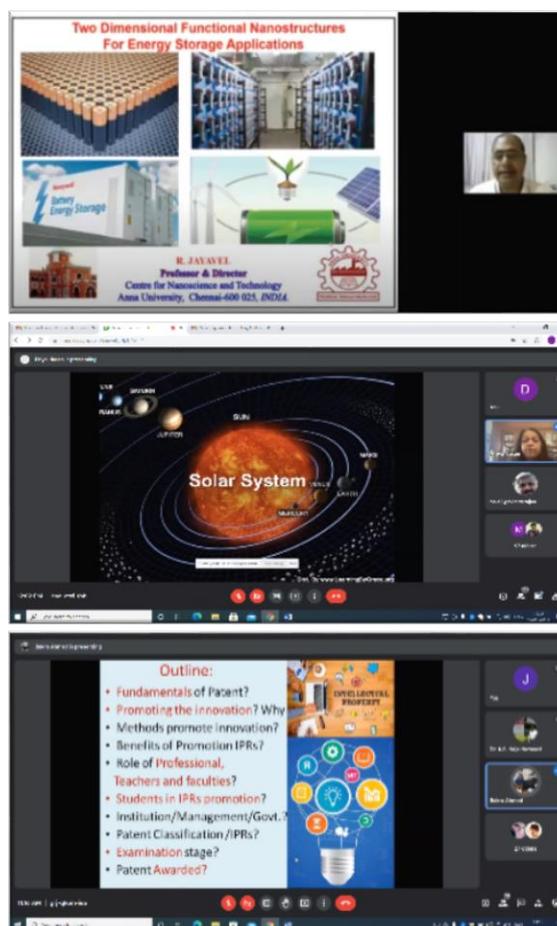
  
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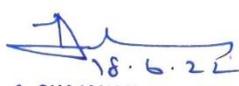
11. Cyber Security- the need of the hour- What is it for the common people? -Dr. G. Padmavathi, Professor, Department of Computer Science, Dean, School of Physical Sciences & Computational Sciences, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore on 02-03-2022. **S:92 (ID)**
12. International Day of Mathematics “PI” ( $\pi$ ) Day: Lecture on Carnal Mantras of Data Science-Dr. Felix Bast Professor and Head Department of Botany Central University of Punjab, on 15-03-2022. **S:61(ID)**



**(iv) Department of Physics**

1. Introduction to Condensed Matter Physics- Dr.S.Gunasekaran, TANSA Awardee, Dean, Research & Development, St. Peter’s Institute of Higher Education & Research, Chennai on 24-01-2022. **B:244. (IC)**
2. Photon Upconversion Nanomaterials and their Bio-Applications - Dr. J. Senthil Selvan, Assistant Professor, Department of Nuclear Physics University of Madras, Chennai on 24-01-2022. **B:244. (IC)**
3. Oxide Thermoelectric Materials for Energy Harvesting-Dr. M. Arivanandhan Professor Centre for Nanoscience and Technology Anna University, Chennai on 25-01-2022. **B:244. (IC)**
4. Two Dimensional Nanocomposites Functional Materials for Energy Storage Applications- Prof.R.Jayavel, Director, Centre for Nanoscience and Technology, Anna University, Chennai on 25-01-2022. **B:244 (IC)**
5. Recent Development in Astronomical Studies – Higher Education Perspective-Dr.TV Venkateswaran Scientist F, VigyanPrasar, Department of Science and Technology Government of India, 07-02-2022. **B: 168. (IC)**



  
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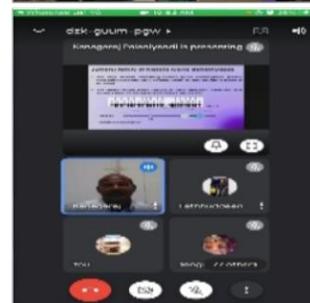


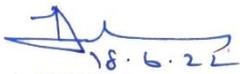
  
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6. Career Pathways to Astronomy Education and Research-Dr. Priya Hasan, Assistant Professor, Department of Physics, Maulana Azad National Urdu University, Hyderabad on 07-02-2022. **B:168 (IC)**
7. Astronomy for Development-Mr. Ramasamy Venugopal Head-Operations, Office of Astronomy for Development, International Astronomical Union 08-02-2022. **B: 168 (IC)**
8. Astronomical Data & Technology-Mr. Ramasehsan Head-Research & Development, Chiguru Colab, Bangalore 08-02-2022. **B: 168. (IC)**
9. Introduction to Astrolab-Mr. Surender Ponnalagar, Project Director, Chiguru Colab, Bangalore 08-02-2022.**B: 168. (IC)**
10. Nuances of Patent Filing Procedure-Dr. M.S. Mary Mangaiyarkarasi, Consultant – IPR, Bioinnovation Centre, Bangalore, 09-02-2022. **B: 55 (IC)**
11. Promoting Innovative Ideas to IPR-Dr. A. Bakrudeen Ali Ahmed, Associate Professor, Dean, School of Life Sciences, Centre for Research and Development, PRIST Deemed University, Thanjavur on 09-02-2022. **B: 55. (IC)**

### (v) Department of Zoology

1. Naturopathy for Health- Dr. Suhail, Coimbatore on 21-10-21. **S:30**
2. Wetland birds of River Kaveri; an Overview-N. Raveendran, Iragukal Amritha Trust, Madurai on 08-12-21. **S:62**
3. KDM3A; A Novel the rapeutic target for pancreatic cancer by Dr. A. Kanagaraj Palaniyandi, Asst. Professor of Biotechnology, SRM Institute of Science and Technology on 20-01-22. **B:75 (IC)**
4. Egg albumin doped Zinc Oxide Nanoparticle; a new alternative to cancer therapy-Dr.Bupesh Giridharan, Asst. Professor of Nagaland University on 21-01-22. **B:60. (IC)**
5. The History and Evolution of Radiation in Medicine-Dr.K.Mohamathu Rafic, Chief Physicist, Govt Rajaji Hospital, Madurai on 22-01-22. **B:35. (IC)**
6. Environmental radioactivity- Dr.Hassan ali, Health and safety division, IGCAR on 28-02-22. **S:30 (ID)**
7. Probiotics for Human and Animal Health-Dr. A. Balasundaram, Asst. Professor of Zoology, Periyar EVR College, Trichy on 14-03-22. **S:82.**
8. Opportunities for Life science students in Industries-Dr. N. Manivannan, Consultant-Biotech Industries, Department of Biology, Gandhigramam University, Dindigul on 14-03-22. **S:82.**



  
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