



GOVERNMENT OF WEST BENGAL  
OFFICE OF THE PRINCIPAL  
*Maulana Azad College*



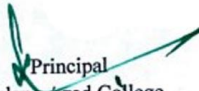
8, RAFI AHMED KIDWAI ROAD, KOLKATA 700013, INDIA  
Phone: 033 2249-3737/2226-7814 e-mail: maulanaazadcollegekolkata@gmail.com  
Website: <https://maulanaazadcollegekolkata.ac.in>

### **3.2 Innovation Ecosystem**

#### **3.2.1 Activities under the DBT STAR College programme**

Maulana Azad College has inculcated the culture of developing student research aptitude through the support of DBT Star College Scheme. The college was awarded Star status by DBT in the year 2017 (STAR College support Phase II) as a recognition of its continuous strive towards augmenting research in biotechnology and other allied subjects. The initiative started way back in 2012 as DBT launched the STAR College scheme and Maulana Azad College was selected as one of the very few colleges to receive a grant for augmenting its infrastructure in scientific Research (STAR College support Phase I). As a Star status recipient, the college, received a further generous grant of Rs. 159 lakhs (Actual utilization of 103 lakhs due to lockdown inflicted by CoViD-19 pandemic). A Memorandum of Agreement has been signed with DBT in this regard for capacity building in Biotechnology in this college. This funding has facilitated the infrastructural upliftment for a good Central Instrumentation Facility and creation of an ecosystem for research and innovation through the focus and commitment of the faculty members and students of various academic departments. In addition, the five beneficiary departments have also organized science popularisation programmes, seminars and workshops to foster the spirit of scientific research amongst school children and college students and have also supported faculty members for attending workshops in developing high-end state-of-the-research skills.

The seminars, workshops and science popularisation programmes have been detailed under key metric 3.2.2 whereas student research and publication have been detailed in a separate report of 3.2.1. Following section enlists the other activities carried out by the college, under DBT STAR College Scheme. A representative documentation of the meetings held and resolutions taken for implementing the various programmes with DBT STAR College support under the Research Advisory Council of Maulana Azad College is also included.

  
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Maulana Azad College  
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Maulana Azad College  
Kolkata  
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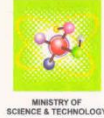


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Copy of STAR Status award by DBT



भारत सरकार  
विज्ञान और प्रौद्योगिकी मंत्रालय  
बायोटेक्नोलॉजी विभाग  
ब्लॉक-2, 7 वां तल, सी० जी० ओ० कम्प्लेक्स  
लोदी रोड, नई दिल्ली-110003  
GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE & TECHNOLOGY  
DEPARTMENT OF BIOTECHNOLOGY  
Block-2, 7th Floor C.G.O. Complex  
Lodi Road, New Delhi-110003

Dr. Garima Gupta  
Sc 'D'  
Tele: 011-24369385  
E.mail: [Garima.g@nic.in](mailto:Garima.g@nic.in)

BT/HRD/11/03/2011 Vol-II

29.06.2017

Sub: Review of Maulana Azad College, Kolkata supported under Star College Scheme

Dear Dr. Dasgupta,

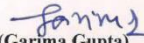
This is with reference to the presentation made by your college, in the "7<sup>th</sup> Expert Committee Meeting to Review Colleges Supported Under Star College Scheme of DBT held on 11<sup>th</sup> and 12<sup>th</sup> April, 2017 at Doaba College, Jalandhar."

In this regard, please see the recommendations of the committee as follows:

"The Expert Committee appreciated outstanding progress made by the college."  
In view of outstanding performance, it was decided to upgrade the college and award Star Status with one time non-recurring grant of ₹ 10 Lakhs and recurring grant of ₹ 3 Lakhs per year for a period of three years for 5 depts. (Physics, Chemistry, Botany, Zoology and Microbiology) departments currently benefited under the scheme."

With regards

Yours sincerely

  
(Garima Gupta)

Dr. Subir Dasgupta  
Coordinator  
Maulana Azad College,  
8, Rafi Ahmed Kidwai Road,  
Kolkata-700013, West Bengal

Copy to:

- The Principal, Maulana Azad College, 8, Rafi Ahmed Kidwai Road, Kolkata-700013, West Bengal

Website: <http://www.dbtindia.nic.in> <http://www.btisnet.gov.in>  
दूरभाष / Telephone : 24363012, 24362329 फ़ैक्स / Fax : 011-24362884

  
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Maulana Azad College  
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**Representative documentation of notices held and resolutions taken**

**1. DBT Star College Program meeting held on 4<sup>th</sup> July 2018 regarding disbursement of fund for interdisciplinary workshop:**

Office of the Principal  
Maulana Azad College  
8 Rafi Ahmed Kidwai Road, Kolkata 700013  
26<sup>th</sup> June 2018

Notice No: 316

A meeting of DBT Star College Programme will be held on 4<sup>th</sup> July at 1 PM at Principal Chamber. All Head of the Department of Botany, chemistry, Physics, Microbiology and Zoology are requested to attend the meeting. The following teachers are also requested to attend the meeting positively as Star College committee members.

*D. S. Dutta*  
Principal

*Dr. S. C. Dasgupta*  
Co-ordinator, DBT Star College programme  
Co-ordinator  
DBT-Star College Programme

**Agenda:** Disbursement of fund for interdisciplinary workshop and other Star College related activities and Planning for advisory committee meeting

1. Dr Ambarish Roy ( Chem)
2. Dr Avishek Ghosh ( Micro)
3. Dr S Chattopadhy ( Physics)
4. Dr Subhodip Samanta ( Chem)
5. Dr S R karmakar ( Zoology)
6. Dr P Roy ( HOD , Botany)
7. Dr S Maity ( HOD Chemistry)
8. Dr .S P Banik ( HOD , Microbiology)
9. Mrs Nabanita Ghosh ( Zoology)
10. Dr U Sinha Mahapatra ( Phy)
11. Dr S Panda ( Botany)

*J. Dasgupta*  
*P. Roy*

*Sulhendur Maity*  
*Samanta*  
*Subhodip Samanta*  
*Sandhya Prasad Banik*  
*Nabanita Ghosh*  
*Susara Karmakar*  
*Ambarish Roy*  
12. *Uttam Sinha Mahapatra*  
13. *Avishek Ghosh*

*[Signature]*  
Principal  
Maulana Azad College  
Principal  
Maulana Azad College  
Kolkata  
Govt. of West Bengal





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2. Notice for fund allotment for interdisciplinary workshop as resolved in the meeting held on 4<sup>th</sup> July 2018:

Maulana Azad College  
8, Rafi Ahmed Kidwai Road, Kolkata 700013

Notice No: 328 Dated 4<sup>th</sup> July 2018

This is to notify that following allotment has been made to five beneficiary departments (Botany, Chemistry, Microbiology, Zoology, Physics) from DBT Star College Scheme.  
Expenditure will be made strictly in the Recurring Heads only. (for Organizing interdisciplinary workshop/Hands on training/ organizing seminar/ industry visit / summer school/ small objective oriented research idea/project / contingency purchase etc)  
Out of the sanctioned and allotted amount **Rupees 25,000/ [Except Physics]** may be used as contingency purpose and rest amount may be use for other recurring expenditures.  
All bills and vouchers should be submitted including previously drawn of Rs 40,000/- within 14<sup>th</sup> August, 2018 positively to the Co-ordinator so that the **audited statement to be sent to DBT within third week of August 2018 for further release of Star Status award grant.**  
PFMS committee previously constituted are requested to take care about the submission of UC & GFR to DBT.  
For continuation of subscription of Journals to Central Library an amount of Rs 40,000/ has been allotted from Star College scheme. Librarians are requested to take necessary steps for that.  
Departmental teachers are requested to train their undergraduate students who are engaged in the small objective oriented research project for presenting their finding in any UGC or allied State /National level conference through Poster with due acknowledgement to DBT star College Scheme. Participating Students name should be in order of merit as decided upon by the PI.

	Contingency	Recurring Head	Total
Microbiology	25000/-	68567/-	93567/-
Botany	25000/-	97708/-	122708/-
Chemistry	25000/-	97708/-	122708/-
Zoology	25000/-	97708/-	122708/-
Physics	Nil	1456/-	122708/-
		(Plus previous expenditure 121252)	
Library	Nil	40000/-	

Principal  
Maulana Azad College  
Kolkata

Co-ordinator  
DBT Star College Programme  
Co-ordinator  
DBT-Star College Programme  
Dr. Subir Chandra Dasgupta  
Professor & Head (W.B.S.E.S.)  
Department of Zoology  
Maulana Azad College  
Govt. of West Bengal

Copy to:  
HOD - Chemistry  
HOD - Botany  
HOD - Zoology  
HOD - Physics  
HOD - Microbiology  
Co-ordinator - DBT  
Librarian -  
Principal - MAE

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**DBT Star College Program meeting notice and resolution held on 30<sup>th</sup> July 2018**

Maulana Azad College  
8, Rafi Ahmed Kidwai Road, Kolkata 700013  
Notice No: 346  
Dated 23<sup>rd</sup> July 2018

A meeting of DBT Star College Scheme will be held with external advisory committee members on 30<sup>th</sup> July, Monday at 3 PM at Principal chamber. All Head of the beneficiary departments and the members of the Star College programme are hereby requested to attend the meeting to discuss some important aspects of the said project.

Dr. S. Dutta  
Principal  
Maulana Azad College

Dr. S. C. Dasgupta  
Co ordinator, Star College Scheme  
DBT-Star College Programme  
Co-ordinator

1. Dr S Bhattacharjee, Retd. Prof. of Chemistry, Jadavpur University, External Advisory member
2. Dr T B Jha Retd. Prof. of Botany, WBSES Barasat Govt. College
3. Head of the Department, ( Chemistry, Physics, Microbiology, Botany, Zoology)
4. Dr. Ambarish Roy
5. Dr. Avishkek Ghosh
6. Dr. Subhodip Samanta
7. Dr. S R Karmakar
8. Dr. S Panda
9. Mrs. Nabanita Ghosh
10. Dr. Sanjoy Chattopadhyay

1.  
2. S. C. Bhattacharjee  
3. T. B. Jha  
4. S. R. Karmakar  
5. Avishkek Ghosh  
6. Subhodip Samanta (Botany) 30/07/2018  
7. Samanta Prasad Senik (Microbiology) 30/07/18  
8. Avishkek Ghosh. 30/7/18  
9. Amitava Ghosh 30/7/18  
10. S. C. Dasgupta

It was unanimously resolved in DBT Star College advisory committee meeting held on 30<sup>th</sup> July 2018, that Dr. S. P. Banik, Department of Microbiology and Dr. A. Mukherjee Department of Zoology will attend the National Science Congress ( NSTC-IISF-2018) will be held at Lucknow during 6<sup>th</sup> and 7<sup>th</sup> October 2018 on behalf of participating star college beneficiary departments. Their travel expenditure will be meet up from star College grant as directed by DBT.

Co ordinator urged all heads of the department to expedite the process of utilising grant so that UC can be submitted to DBT as early as possible

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**DBT Star College Program meeting notice held on 12<sup>th</sup> February 2019**

110703

Maulana Azad College  
8 Rafi Ahmed Kidwai Road, Kolkata 70042

Notice No: 674/DBT Dated: 4<sup>th</sup> February 2019.

A meeting of DBT Star College will be held on 12<sup>th</sup> February 2019 at 1.00 PM at Principal Chamber to discuss the modalities of expenditure and future planning of execution of Star Status grant. All Heads of the beneficiary Department and the members of the Star College Programme are hereby requested to attend the meeting to discuss the above mentioned objectives.

Dr. S. Dutta  
Principal  
Maulana Azad College  
Kolkata

Dr. S. C. Dasgupta  
Co-ordinator  
DBT-Star College Programme  
Maulana Azad College

1. Head of the Department – Boatny, Chemistry, Physics, Microbiology, Zoology
2. Dr Ambarish Roy ( Chem)
3. Dr Subhodip Samanta ( Chem)
4. Dr Sanjoy Chattopadhyay ( Phy)
5. Dr Nabanita Ghosh ( Zoo)
6. Dr S R Karmakar ( Zoo)
7. Dr S Panda ( Bot)
8. Dr Avishek Ghosh ( Micro)

Members Present

- 1.
- 2.
3. Roy
4. Subhodip Samanta 12/2/19
5. Subhodip Samanta
6. S. Panda 12/2/19
7. S. Panda 12/02/19
8. Subhodip Samanta 12/02/19
9. Nabanita Ghosh 12/02/19
10. S. R. Karmakar 12.02.19
11. Sanjoy Chattopadhyay 12.02.19
12. Ambarish Roy 12/02/19
13. Amitava Ghosh 12/2/19

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**Notice of allotment sanctioned for student research**

Office of the Principal  
Maulana Azad College  
8 Rafi Ahmed Kidwai Road, Kolkata 700013  
Notice No. 674/19 Dated: 05<sup>th</sup> Feb, 2019

This is to notify that the following allotment has been made to the five beneficiary departments (Botany, Chemistry, Microbiology, Physics and Zoology) out of the recurring grant received from STAR College support of DBT vide sanction No. BT/HRD/11/03/2011 Vol II dated 24.12.2018 for execution of small student research projects of duration not exceeding one year. In this regard, the Heads of the five departments are requested to do the needful for execution of the research projects within the aforesaid period.

Department	Allotment made
Botany	Rs 50,000/-
Chemistry	Rs 50,000/-
Microbiology	Rs 50,000/-
Physics	Rs 50,000/-
Zoology	Rs 50,000/-

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Kolkata  
Govt. of West Bengal

Co-ordinator  
DBT STAR College Programme  
Co-ordinator  
DBT-Star College Programme

**DBT Star College Program meeting notice held on 3<sup>rd</sup> May 2019**

MAULANA AZAD COLLEGE  
8 RAFI AHMED KIDWAI ROAD, KOLKATA 700013  
29<sup>th</sup> April 2019  
Notice No: 675

A meeting of DBT Star College will be held on 3<sup>rd</sup> May 2019 at 9 PM at Seminar Hall (Room No 1.07) to discuss some important issues. All faculty members of beneficiary departments including Head of the Department are requested to attend the meeting.

Dr. Tahir Baran Isha who is our External member of DBT Star College Advisory committee is also requested to attend the meeting.

Principal  
Maulana Azad College  
Kolkata-13

Dr. S C Dasgupta  
Coordinator, DBT Star College  
Dr. Subo Chandra Dasgupta  
Professor & Head of O.S.C.S.J  
Department of Zoology  
Maulana Azad College  
Govt. of West Bengal

Agenda  
1. Report of Recent Task Force meeting held at Pondicherry University  
2. Purchase of Equipment and utilisation of grant  
3. Recent proposal of DBT regarding one day popularization student centric programme

Copy to:  
All Head of the Department & faculty members: Zoology, Chemistry, Physics, Microbiology, Botany  
Prof T Baran Isha External advisory member

1. K. P. 3/5/19  
2. H.C.  
3. A.B. 3/5/19  
4. P. Choudhury 3/5/19  
5. M. S. 3/5/19  
6. Ananta 3/5/19  
7. Sanku 3/5/19  
8. Ananta 3/5/19  
9. H. S. 3/5/19  
10. P. 3/5/19  
11. Ananta  
12. Ananta 3/5/19  
13. Mica Nazim 3/5/19  
14. Naim Uddin 3/5/19  
15. Ananta 3/5/19  
16. Raju Lal 3/5/19  
17. Ananta 3/5/19  
18. Sanku 3/5/19  
19. Madhusudan Choudhury 3/5/19  
20. Ananta 3/5/19  
21. Ananta

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**DBT Star College Program meeting notice held on 29th August 2019**

Maulana Azad College  
8 Rafi Ahmed Kidwai Road, Kolkata 700013  
26<sup>th</sup> August 2019  
**NOTICE - 136**

A meeting of DBT Star College programme will be held on 29<sup>th</sup> August at 3 PM at Principal's chamber. All Heads of the Department of Botany, Chemistry, and Microbiology, Physics are requested to attend the meeting.  
Dr. Timir Baran Jha, External Advisor member of this DBT Star College is also requested to attend the meeting.  
The following teachers are also requested to attend the meeting positively as Star College committee members.

Dr S C Dasgupta  
Principal  
Maulana Azad College  
Kolkata

Dr S C Dasgupta  
Co ordinator  
Department of ZOOLOGY  
Maulana Azad College, Kolkata  
Govt. of West Bengal

Copy to:

1. Dr. Amabarish Ray( Chem)
2. Dr Subhodip samanta( Chem)
3. Dr Sanjoy Chattopadhyay( Phy)
4. Dr S R karmakar( Zoo)
5. Dr S Panda( Bot)
6. Dr Avishek Ghosh( Phy)
7. Dr T B Jha( External Advisor)

1. k 29/8/19  
2. H.C.  
3. Jha 29.8.19.  
4. Sanjoy Chattopadhyay.  
5. Avishek Dey  
6. Panda  
7. P Ray  
8. Jha 29.8.19.  
9. Sanjoy k. a., 29/08/19.  
10. Ambarish Ray  
11. Samanta  
12. Samanta Prasad Jha

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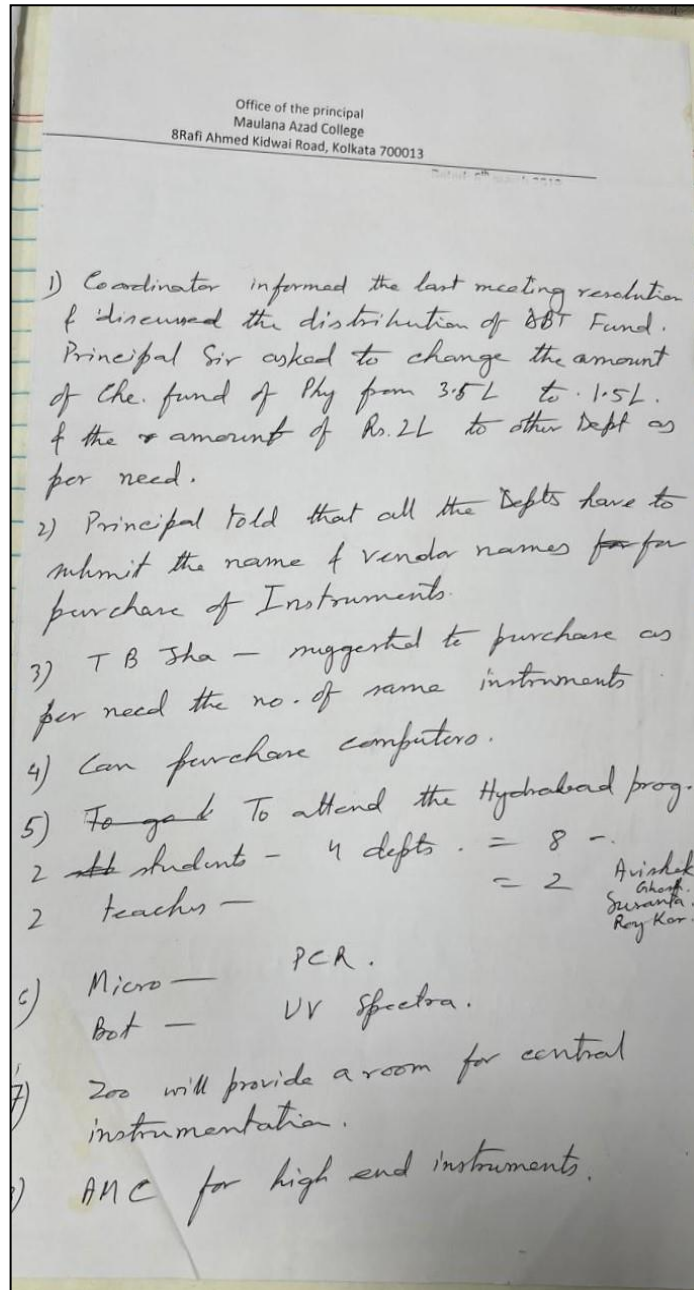


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Resolution of the meeting held on 29th August 2019



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**DBT Star College Program meeting notice held on 16<sup>th</sup> September 2019**

Maulana Azad College  
8, Rafi Ahmed Kidwai Road, Kolkata 700013  
5<sup>th</sup> September 2019-

Notice No. 109

A meeting of DBT Star College programme regarding One day Popularization programme will be held on 16<sup>th</sup> September 2019 at 3 PM at principal Chamber. All Heads of the Department of Botany, Chemistry, Physics, Microbiology and Zoology are requested to attend the meeting. Prof Subhas Bhattacharjee, Ex Dean, Jadavpur University and Prof Timir Baran Jha who is our external advisor are also invited to attend the meeting.

Principal  
Maulana Azad College  
Kolkata

Co Ordinator  
DBT Star College Programme

Copy to:  
Head Of the Department, Botany, Chemistry, Microbiology, Physics, Zoology  
Prof T B Jha, Retd Prof. WBSES  
Prof S Bhattacharjee, Ex Dean, Jadavpur University  
Prof. M. Bhattacharjee - Director. JBNSTS.

Members Present

1. ✓ 14/11/19
2. ✓ J. D. Jha
3. ✓ Subhas Bhattacharjee
4. ✓ Bhattacharjee
5. ✓ Jha
6. ✓ P Roy (Bot)
7. ✓ Umagesunder (Phy)
8. ✓ Samudra Prasad Sankar (Microbiology)
9. ✓ Meeting on 16/09/2019

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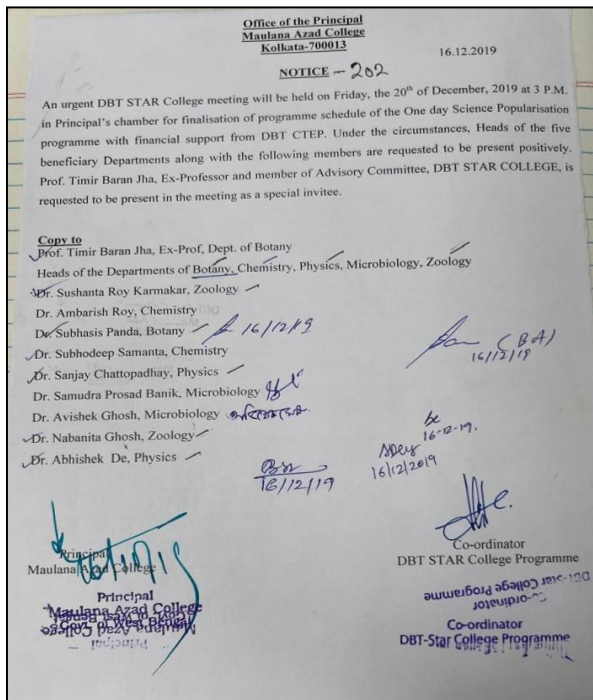


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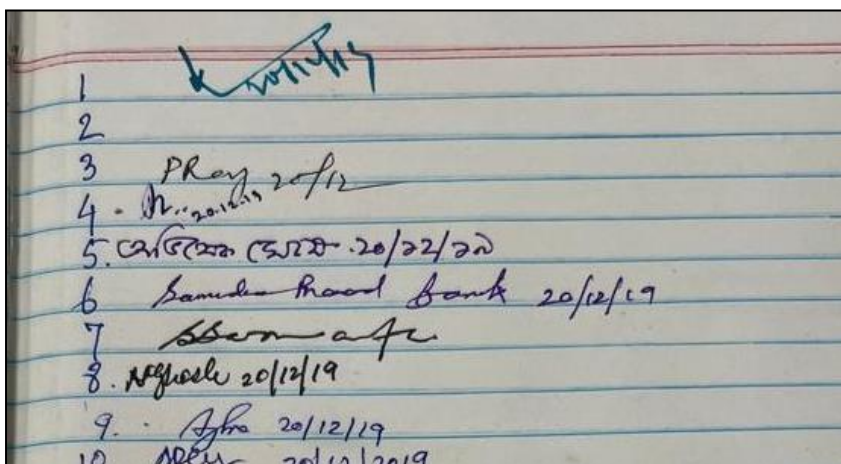


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**DBT Star College Program meeting notice held on 20<sup>th</sup> December 2019**



**Members present in the meeting**



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**DBT Star College Program Advisory Committee meeting notice held on 13<sup>th</sup> February 2020**

Maulana Azad College  
8 Rafi Ahmed Kidwai Road, Kolkata 700013

02.02.2020

An Advisory committee meeting of DBT Star College Programme will be held on 13<sup>th</sup> February 2020 at 2 PM at Principal Chamber. All Heads of the beneficiary departments and the faculty members are requested to attend the meeting. Dr Garima Gupta, Deptt of Biotechnology has agreed to be present in the said meeting.

Principal  
Maulana Azad College

Principal  
Maulana Azad College

Co Ordinator  
DBT star College Programme

Copy forwarded to

All Head of the beneficiary Department  
External member – Dr Timir B Jha  
Dr S Bhattacharjee  
All faculty members of the beneficiary departments

Members Present

1. [Signature]
2. [Signature] 13/02/2020. (Dr. Garima Gupta)
3. [Signature] 13/02/2020.
4. [Signature] 13/2/20
5. [Signature] 13/2/2020
6. [Signature] 13/2/20
7. [Signature] 13/2/2020
8. [Signature] 13/02/2020.

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**Notice of DBT STAR College meeting held on 16<sup>th</sup> December, 2021**

Office of the Principal  
Maulana Azad College, Kolkata  
Notice Dated: 11<sup>th</sup> December 2021

A DBT Star College meeting will be held on 16<sup>th</sup> December 1.00 P.M. at seminar hall to discuss and finalise the detail planning for "One day interaction programme / Science Adda" - a programme launched by DBT for its Star Colleges.

In this connection all Head of the beneficiary departments and their all teachers are requested to attend the meeting positively.

Principal  
Maulana Azad College

Coordinator, DBT Star College Programme  
Maulana Azad College

Members Present

1. [Signature]
2. [Signature]
3. Singha 16.12.21
4. Sam 16/12/21
5. [Signature]
6. Debabrata Mukhopadhyay 16/12/21
7. [Signature] 16/12/21
8. [Signature] 16/12/21
9. Subodip Samanta
10. Sanj Sam 16.12.2021
11. [Signature] 16.12.2021
12. Madhuvanti Chatterjee 16/12/2021.
13. Smita K. Bhunia 16/12/2021
14. [Signature] Sam 16/12/2021
15. Susana & Kamakan 16/12/2021
16. Rajaraj Ghosh 16/12/21
17. Sanjukta Manna 16/12/21

18. Sanjay Chattopadhyay 16.12.21.
19. Sanjay K. S. 18/12/2021
20. Mohisheta Deo 16/12/2021
21. Pijush Kanti Ghosh 16/12/2021
22. Apban Das 16.12.21.
23. [Signature] 26/12/21
24. Bipasha Ray 16.12.21.
25. Samanta Prasad Sanyal 16/12/21
26. Partha Ray
27. [Signature] 16/12/21
28. Maim Uddin 16/12/21
29. Sukanya De 16.12.21
30. Anima Saha 16.12.21

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**Notice regarding termination of DBT Star college scheme**

Office of the Principal  
Maulana Azad College

Notice 22 23<sup>rd</sup> March 2022

This is to inform you that the ongoing DBT Star College scheme with Star Status is going to end by March 2022.  
Now the college is planning to apply a fresh proposal to DBT including its all existing beneficiary department along with Mathematics and Statistics.  
In this circumstance a new DBT Star College Committee of this college is being constituted for that purpose.  
All faculty members of the proposed beneficiary departments are hereby requested to co-operate with this committee.

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committee

**Joint Co-ordinator:**  
Dr. Samudra Prasad Banik, Assistant Prof & Head, Deptt of Microbiology  
Dr. Ajanta Mukherjee, Assistant Professor, Deptt. of Chemistry

**Members:**  
Dr. Nanda Das Associate Professor, Deptt of Mathematics  
Dr. Abhishek Ghosh, Assistant Prof, Deptt of Microbiology  
Dr. Abhishek Dey, Assistant Prof & Head, Deptt of Physics  
Dr. Subhodip samanta, Assistant Professor, Deptt of Chemistry  
Dr. Nabanita Ghosh, Assistant Professor, Deptt of Zoology  
Dr. Abhishek Mukherjee, Assistant Professor, Deptt of Zoology  
Dr. Madhuvanti Chatterjee, Assistant Professor, Deptt of Botany  
Sri Debjit Chakraborty, Assistant Professor, Deptt of Statistics  
All Head of the Departments (Science) [Ex Officio members]

**Mentors:**  
Prof. S. C. Dasgupta, Professor & Head, Deptt of Zoology  
Prof. Tapan Karpfa, Professor & Head, Deptt of Chemistry

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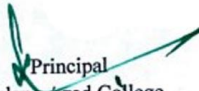
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**Selection of faculty members of the college to represent Maulana Azad College at different DBT workshops and conferences across the country**

1. Dr. Abhishek Mukherjee, Assistant Professor, Dept. of Zoology and Dr. Samudra Prosad Banik, Assistant Professor, Dept. of Microbiology, were nominated to represent the college in the 4<sup>th</sup> India International Science Festival (IISF 2018) held between 5<sup>th</sup> and 8<sup>th</sup> October, 2018.

  <p>भारत सरकार विज्ञान और प्रौद्योगिकी विभाग सर्वोपदेशिका भवन ब्लॉक-2, 7<sup>म</sup> मंज, एन.डी.डी. सिटी, लुधियाना पिन कोड, 110003</p> <p>GOVERNMENT OF INDIA MINISTRY OF SCIENCE &amp; TECHNOLOGY DEPARTMENT OF BIOTECHNOLOGY Block-2, 7th Floor, C.G.O. Complex Ludhiana Road, New Delhi-110002</p> <p>Dated: 20.08.2018</p> <p>Dr. Garima Gupta Scientist 'E' Department of Biotechnology Room No 509, Block 3, CGO Complex Ludh Road - 110003 Contact: 011-24369385 E-mail: garima.g@nic.in</p> <p>Dear Principal,</p> <p>You will be happy to know that Department of Biotechnology, Ministry of Science and Technology in association with Ministry of Earth Sciences is organizing the 4th India International Science Festival (IISF 2018) from 05<sup>th</sup> to 08<sup>th</sup> October 2018 at Lucknow. IISF 2018 will be hosted by Department of Bio-technology at Indira Gandhi Pratishthan, Lucknow. The festival is primarily aimed to involve the common masses to improve their scientific understanding, temperament and appreciation towards various Indian achievements in the field of Science &amp; Technology. It provides a platform to the young scientists, students, technicians for exchange of knowledge and ideas. IISF supports Government's flagship programs like Swachh Bharat, Digital India, Smart City, Swasth Bharat etc.</p> <ol style="list-style-type: none"><li>2. One of the prominent components of IISF is National Science Teacher's Congress. Nearly 500 science teachers from kindergarten (KG) to post graduate (PG) are participating in the workshop. The two day workshop is on 06<sup>th</sup> and 07<sup>th</sup> October 2018. This platform is provided for innovative, dedicated, and passionate teachers to share their experiences and learn the innovative methods of science teaching. Many teacher practitioners will get a chance to showcase the innovative methods of science teaching based on the subject themes and ideas.</li><li>3. The workshop has many components like panel discussions on Science Education and Role of Science Teacher as well as Pedagogy of Science Teaching and Learning, plenary talks by eminent science communicators and educationists and demonstrations by selected science teachers. Since Star College is a specific scheme of the Department for undergraduate teaching, it would be an opportunity for the young teachers across the participating colleges to come in contact with each other and also to interact with reputed leaders in the field of education that shall motivate them towards learning and imparting knowledge.</li></ol> <p>Website : <a href="http://www.dbtindia.nic.in">http://www.dbtindia.nic.in</a> <a href="http://www.dbsinet.gov.in">http://www.dbsinet.gov.in</a> GSM/Telephone: 24369313, 24369329; Fax: 011-24369384</p>	<p>From your college, Dr. Samudra Prosad Banik, Assistant Professor and Dr. Abhishek Mukherjee, Assistant Professor, has been nominated for this workshop by our organizing partner institutions like Vigyan Prasar (DST), NCERT (MHRD) and Vijayana Bharti- an voluntary science movement lead by eminent scientists. Since the programme is initiated by Government of India, you are requested to depute them for this workshop to be held at Indira Gandhi Pratishthan, Lucknow.</p> <ol style="list-style-type: none"><li>4. To attend the Workshop, to and fro travel to Lucknow by direct-shortest route as well as frugal shared accommodation at Lucknow will be provided from 04<sup>th</sup> to 08<sup>th</sup> October 2018 at Lucknow (4 nights/5 days). The travel fare would be reimbursed on actual through bank transfer at cost not exceeding rail fare AC-III (other states) from nearest railway station to Lucknow and back. The individual be instructed to present the original ticket (railway ticket/bus ticket) at the Workshop during registration and present a signed letter along with from the Head of the Institution being deputed bringing out the nearest railway station and bank details (Name, Account no., Bank and IFSC Code) for due reimbursement.</li><li>5. Arrival and departure details for Lucknow need to be intimated to Workshop coordinators by Travel Form generated and circulated to you by email. For any query on this, please contact Mr Suraj Pandey (Mobile no. 8800687989/9643499869) OR Ms Babita Rani (8800664845). The travel plan should be informed maximum by 10th September 2018.</li><li>6. Your cooperation and support is anticipated to make this event a success.</li></ol> <p>Yours Sincerely,  (Dr. Garima Gupta) Convener-IISF-2018</p> <p>To, The Principal, Maulana Azad College 8, Rafi Ahmed Kidwai Rd, Tahala, Kolkata, West Bengal 700013</p> <p>CC to: 1. Dr. Samudra Prosad Banik, Assistant Professor, Maulana Azad College, Kolkata 2. Dr. Abhishek Mukherjee, Assistant Professor, Maulana Azad College, Kolkata</p>
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Dr. Abhishek Mukherjee and Dr. Samudra Prosad Banik at the conclave of IISF, 2018 ahead of the scheduled start of National Science Teacher's Congress where both participated



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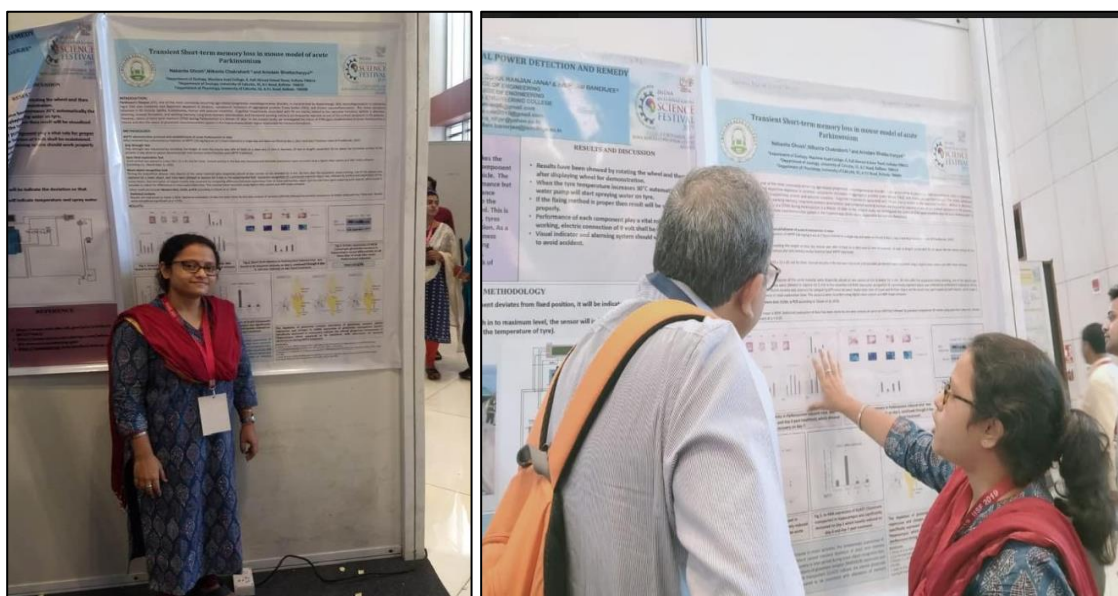


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Prof. Subir C. Dasgupta, Head, Dept. of Zoology, Maulana Azad College and Co-ordinator, DBT Star College Scheme and Dr. Abhishek Mukherjee, Assistant Professor, Dept. of Zoology, Maulana Azad College attended the 5<sup>th</sup> Meeting of the task force for reviewing ongoing programmes under STAR College Support, 18<sup>th</sup> April-20<sup>th</sup> April, 2019 at Pondicherry University



Dr. Nabanita Ghosh, Assistant Professor, Dept. Of Zoology, Maulana Azad College presented her research in the Young Scientist Conference at the 5th India International Science Festival, 2019 held between 5th and 7th November, 2019 at the Biswa Bangla Convention Centre, Kolkata



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Dr. Subhasis Dutta, Principal, Maulana Azad College and Prof. Subir C. Dasgupta, Co-ordinator, STAR College Scheme along with Dr. Garima Gupta, nodal officer, DBT Star College Scheme, at the 5th India International Science Festival, 2019 held between 5th and 7th November, 2019 at the Biswa Bangla Convention Centre, Kolkata



Dr. Samudra Prosad Banik, Assistant Professor, Dept. of Microbiology, Maulana Azad College presented his research findings in the Young Scientists' conference at the India International Science Festival, 2020 held between 22<sup>nd</sup> and 24<sup>th</sup> December, 2020 in virtual mode.



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Three faculty members from the beneficiary science departments of Botany, Chemistry and Microbiology also participated in a DBT sponsored workshop on **Molecular testing for Genetic disorders at CDFD, Hyderabad from 11<sup>th</sup> November, 2019 to 15<sup>th</sup> November, 2019**

**REPORT ON THE DBT-STAR COLLEGE SCHEME SPONSORED WORKSHOP for faculty members at CDFD, Hyderabad**

Name of the workshop: **Molecular testing for Genetic disorders**  
Organised by **Centre for DNA Fingerprinting & Diagnostics, Hyderabad**

**Objective:** This workshop's aim was to provide hands on training to all the participants from diverse fields of biology and allied disciplines about the advanced molecular techniques used for the detection and diagnosis of the common as well as rare genetic disorders. The way to successfully understand, detect, predict the causes at the genetic and molecular level and give prognosis and devise treatment plans of these severe diseases is the ultimate goal of personalised medicine. This programme was designed very meticulously and enabled us to learn the various technical aspects very well. As a part of one beneficiary department of DBT Star College scheme in Maulana Azad College, the faculty members from various disciplines like Chemistry, Microbiology & Botany visited CDFD to attend the said hands-on-training workshop.

**Duration of the workshop:** 11<sup>th</sup> November, 2019 to 15<sup>th</sup> November, 2019.

**Participants form Maulana Azad College:**

1. Dr. Subhodip Samanta, Department of Chemistry
2. Dr. Madhuvanti Chatterjee, Department of Botany
3. Dr. Avishek Ghosh, Department of Microbiology

**Details of the workshop:** The hands-on-training was conducted by Molecular Genetics and Diagnostics Division under the supervision and guidance of Dr. Ashwin Dalal, the Head and Group Leader of this division.

**Outcome:** This workshop had provided hands on training to all the participants from diverse fields about the advanced molecular biology techniques used for the detection and diagnosis of the common and rare genetic disorders. The way to successfully understand, detect, predict the causes at the genetic and molecular level and give prognosis and device treatment plans of these severe diseases is the ultimate goal of personalised medicine. This programme was designed very meticulously and enabled us to learn the various technical aspects very well.

In addition to the specific agenda of this workshop we also had the opportunity of visiting the famous 'Centre for Basmati rice DNA analysis', which was established in CDFD

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in 2005 in collaboration with the Agricultural and Processed Food Export Development Authority (APEDA), Ministry of Commerce, Government of India. In this laboratory the Basmati rice samples, received from Basmati rice exporters and importers from India and other countries, are tested for their purity and if there are any adulterations with non-basmati rice grains.

Another great opportunity was the witnessing of the detailed demonstration of the wide range of high precision, sophisticated scientific instrumentation and analytical services, used for modern basic research in the frontier areas of genetics, molecular and cell biology, molecular pathogenesis and computational biology. at CDFD.

The downstream goal at our institution from the exposure that we faculties had in this workshop was three-fold:

First- Informing students in general of the very recent updates of this field of molecular diagnostics and passing the knowhow of the basics and techniques to a vast number of students from multiple disciplines.

Second- Inspiring students to enter into this very challenging field of molecular diagnostics and give them an insight into how they would take this particular field as their future research area.

Third - Another very important point emphasised was how students could enter into an entrepreneurship program by getting trained in this new emerging area and establish a molecular diagnostic facility.

Certificate of participation



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Few representative photographs taken during the workshop



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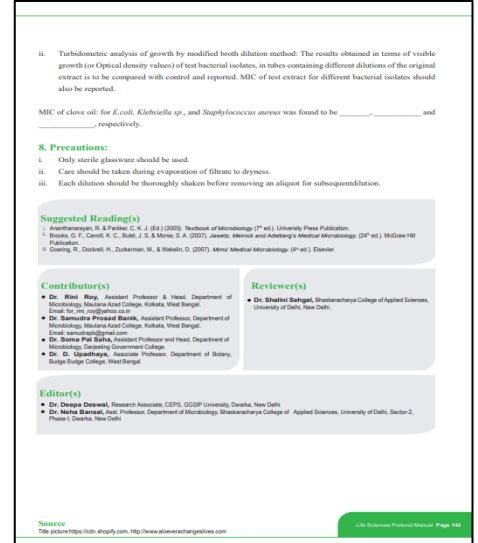
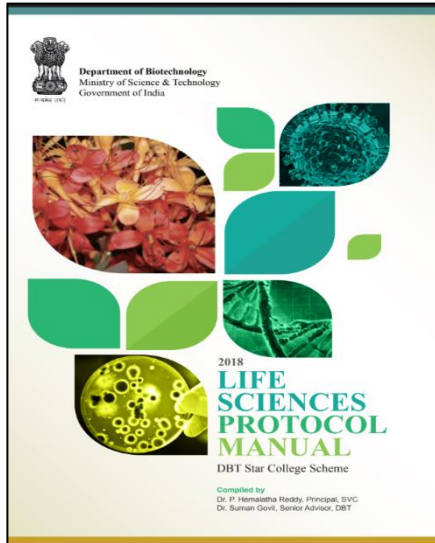


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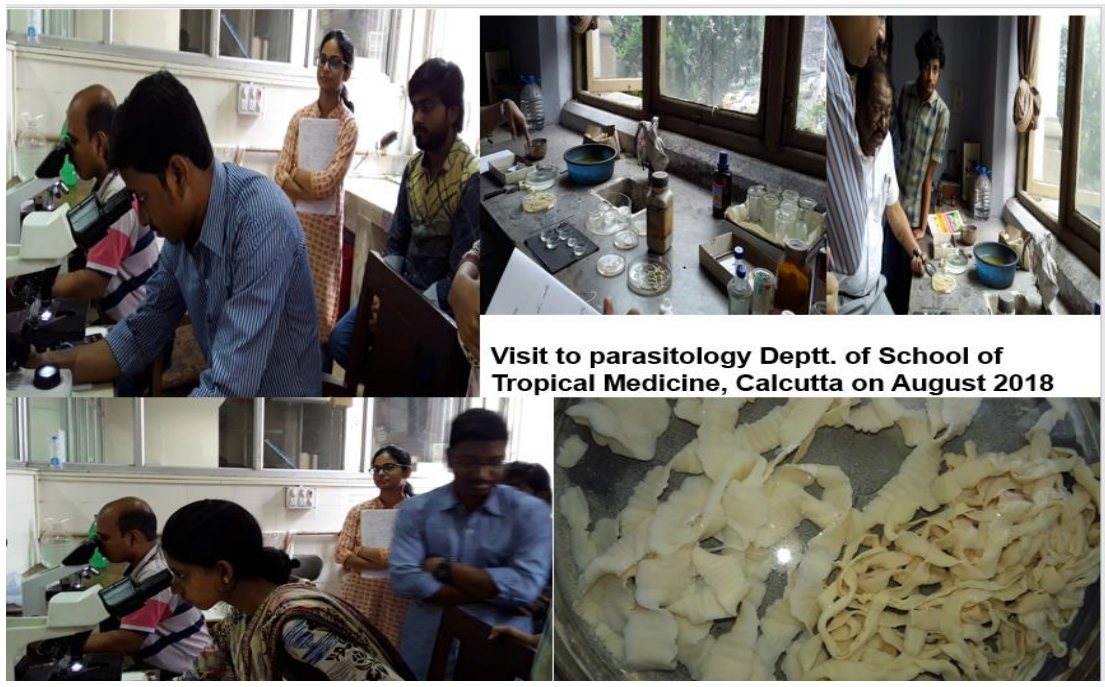


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Selection of a hands-on workshop protocol compiled by Dept. of Microbiology, Maulana Azad College in the Life Sciences Protocol Manual published by DBT STAR College scheme, Ministry of Science and Technology, Govt. of India, Antibacterial potential of natural products, Pgs 139- 143



Other student centric activities including workshops, field and industry visits conducted during the period



Visit to parasitology Deptt. of School of Tropical Medicine, Calcutta on August 2018

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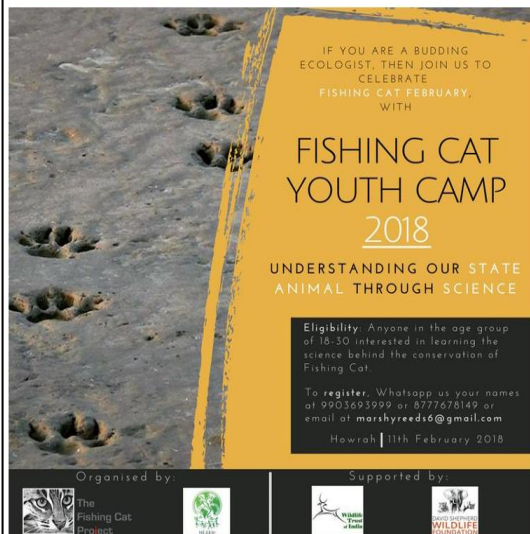
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Conservation of fishing cat, a collaborative activity of the Dept. of Zoology with NCBS, Bangalore

Initiation of a DBT Star College sponsored collaborative project



Collaborative study on Fishing Cat Ecology- A DBT Star College Initiative

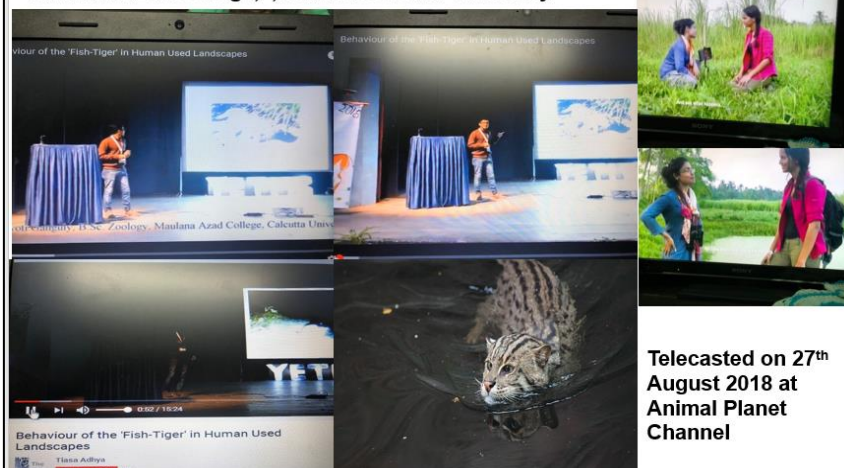
Collaborator: Dr. Tiasha Adhya, NCBS, Bangalore & Zoomac

Objectives :

- 1) Examine seasonal variation in diet with respect to warm-wet and cold-dry seasons (pre and post monsoon)
- 2) Study foraging efficiency of primary prey (fish) and examine if foraging efficiency is affected by seasonal climate
- 3) Examine habitat quality through physico-chemical parameters
- 4) To examine seasonal variation in parasite load (which could be linked to objective 3)
- 5) to examine heavy metal accumulation in fish and fishing cat scats (linked to objective 3)
- 6) to examine nutritional variation (protein:fat:carbohydrate) in diet (with respect to variation in percentage of scats containing rodents and fish seasonally) - after establishing objective 1

International Union for Conservation of Nature and Natural Resources (IUCN) with us being a member of the Species Survival Commission. We are also Project Partners of Small Wild Cat Conservation Foundation <https://smallcats.org/partner-project/tiasha-adhya-and-parthadey/> .

This is a talk on the hunting behaviour and activity pattern of the Fishing Cat in human used landscapes-"Behaviour of the 'Fish-Tiger' in Human Used Landscapes"-presented at YETI Baroda 2018 by Divyajyoti Ganguly, student researcher at The Fishing Cat Project and an undergraduate student from Maulana Azad College, Kolkata Calcutta University.



Telecasted on 27<sup>th</sup>  
August 2018 at  
Animal Planet  
Channel

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**PROGRESS REPORT  
DBT STAR COLLEGE SCHEME  
(After STAR Status)**

**Submitted to**

**Department of Biotechnology  
Govt. of India  
2018-2021**

Completion Report  
(24.12.2018 to 23.12.2021)

Department of Biotechnology

Proforma for submission of Completion Report supported under Star College Scheme

**(Kindly note that the Completion report from Point 6 to 10, should not be more than 25 A4 size sheets, with fontsize 12pt and linespacing 1.5) Relevant annexure may be attached at appropriate places.**

1. Name of the College: M AULANA AZAD COLLEGE
2. Name of Coordinator, designation : Dr Subir Chandra Dasgupta, Professor of Zoology  
Address, Phone nos. Maulana Azad College, Kolkata mob: 9830471981
2. (A) Assessment duration: 24/12/2018 to 23/12/21 (B) Duration in years: 4 years  
(C) Extension period if any: Nil
3. Details of Departments Supported

SI No	Name of Department	Courses (B.Sc./M.Sc./PG Diploma, certificate etc) offered	Regular Faculty members	
			With Ph.D.	Without Ph.D.
			Total=	
1	Botany	B.Sc	05	Nil
2	Chemistry	B.Sc	09	Nil
3	Physics	B.Sc	05	01
4	Microbiology	B.Sc	04	01
5	Zoology	B.Sc, M.Sc	08	Nil

4. Number & Date of Advisory committee meeting held :- 13th February, 2020
5. Qualitative improvements due to DBT support. Please highlight 5 salient points (within 1000 words).

(You may enumerate 5 minor projects where students were involved and their impact or similar activities and their outcome; this is for representative purpose and coordinator may include details as per his own choice; kindly refrain from providing philosophical data. Avoid any introduction. All the justifications must be very crisp like any aspect non-existent pre-STAR Scheme and you achieved after the grant). This information may be given department wise:-

- A) Students Research and Achievements
- B) Publication of Students and Faculties
- C) Participation and organized Series of lecture
- D) Faculty Improvement programme
- E) Interdisciplinary Hands on training programme

## Student Research and Achievements

1. Md. Osama Ali, a student of 4<sup>th</sup> semester (2021) has participated in “Winter School 2021” on “Quantum Field Theory” organized by Blackbeam United Cosmos Organization during 6<sup>th</sup> to 11<sup>th</sup> January 2021. He has submitted an essay on “Quantum Field Theory” at the school.
2. Sayak Banerjee, a student of 4<sup>th</sup> semester (2021) has successfully completed a “Fundamentals of Maroscopic and Microscopic Thermodynamics” an online course organized by University of Colorado. (Feb-02-2021)
3. Sayak Banerjee, a student of 4<sup>th</sup> semester (2021) has successfully completed an online course titled “Building Arduino robots and devices” organized by Moscow Institute of Physics and Technology. (09.07.2020)
4. Sidhartha Chatterjee, a student of 4<sup>th</sup> semester (2021) has successfully completed an online course titled “Learning Physics Through Simple Experiments”, organized by IIT Kanpur.( April 2 to June 10, 2020)
5. Sidhartha Chatterjee, a student of 4<sup>th</sup> semester (2021) has successfully completed an online course titled “Classical Electromagnetism - 1 (Electrostatics)”, organized by IIT Kanpur.( August 15 to December 13, 2020 )
6. Award for 3<sup>rd</sup> best oral presentation won by the students of second semester (2019-20 batch) in collaboration with Dept. of Biotechnology, IIT-Roorkee in the National online conference on Environment, Human Health and Sustainable Development Goals and World Environment Day 2020 Celebrations organized by Environment and Social Development Association (ESDA) along with Dr. Bhim Rao Ambedkar College, CSIR- NEERI, GRC-India, GD Goenka University Gurugram, Amity University Haryana and RML Avadh University Ayodhya
7. Ananya Biswas, a student of 6<sup>th</sup> Semester (2021) has attended in **Krittika Summer Projects** Organised by Krittika, the Astronomy club of IIT Bombay on the Topic: Exoplanets during 17 May 2020 – 16 August 2020.
8. Samik Dutta, a student of 6<sup>th</sup> semester (2021) has participated in the course “Advanced Course on Special theory of Relativity” organised by Centre for Continuing Education, Indian Institute of Technology, Kanpur during January 26 to May 19, 2020
9. Sandeep Sharma, a student of 6<sup>th</sup> semester (2021) has participated in the “National Anveshika Experimental Skill Test” organised by Centre for Continuing Education, Indian Institute of Technology, Kanpur during August 16 to August 19, 2020.

## Publications of students:

1. S Baiidya, M Ghosh, V Jhungare, M Bhambri, SP Banik, **D Bhattacharya**, S Hazra, “BcII-metallo- $\beta$ -Lactamase as bacterial response to Carbapenems, the last human anti-microbial resort”, on “Environment, Human Health and Sustainable Development Goals”, held on **5<sup>th</sup>-6<sup>th</sup> June 2020**, organised by Environment and Social Development Association (ESDA), Delhi Abstract book Pg No. 278.
2. Rajarshi Ghosh, Pradip Bhattacharjee and Anish Pal. Emerging applications of nanotechnology in neurological disorders- Recent Review, BBRC,14,(1) 66-73.2021.
3. Sanjukta Manna, Ansh Pal and Pradip Bhattacharjee. Asymptomatic SARS-CoV2infection and challenges in India. International Journal of Recent Scientific Research, 12(3)41220-41227, 2021
4. Sujit Kumar Bhowal, Subir C Dasgupta, Susanta R karmakar, Arnab Kar, Eerondyoti Chakrabarty, Monalisha Ghosh and Poulami Dey, Uttarpradesh Journal of Zoology
5. Sanjukta Manna and Arnab Kar, Impact of urbanization on abundance of soil arthropods. Uttar Pradesh Journal of Zoology 41(11) 122-127, 2020.



## Participation of series of Lectures organized by different beneficiary departments

1. The Webinar on “How to read Scientific Literature” and successfully completed The Online evaluation test to enroll in the Manav Human Atlas Initiative, a joint venture by DBT, Govt. of India, National Centre for Cell Science, Pune and IISER, Pune as part of the “National science series” held on 4<sup>th</sup>-6<sup>th</sup> August 2020, organised by Bhaskaracharya College of Applied Sciences, Delhi University
2. 27<sup>th</sup> June, 2020: Webinar on “CoViD-19 diagnosis: Prospects and Challenges” organized jointly by Departments of Microbiology and Zoology.
3. 10<sup>th</sup> August, 2020 to 12<sup>th</sup> August, 2020: 3 day e-Workshop on “Molecular Visualization and Modeling using Python Programming” organized by Departments of Physics, Microbiology and Zoology.
4. 2<sup>nd</sup> September, 2020: Webinar on “How to live a healthy life amidst the Pandemic crisis” organized by all beneficiary Science Departments.
5. 18<sup>th</sup> September, 2020: Webinar on “Regulations and Safety Measures in Food Industry” organized by Departments of Zoology and Microbiology.
6. 23<sup>rd</sup> September 2020 to 24<sup>th</sup> September 2020: Two-day National webinar on “Some selected topics on DSE Physics course under CBCS, CU” organized by Departments of Physics in collaboration with IQAC.
7. One-day international webinar on “Emerging Health Management with special reference to Covid-19 & Snake -bite In India” organised by Internal Quality Assurance Cell, Maulana Azad College in collaboration with Dr. Sites Chandra Lahiri Memorial Foundation. 21st Nov, 2020
8. 28<sup>th</sup> February, 2021: Celebration of National Science Day, “Science, Technology and Innovation in shaping Education” organized by all beneficiary Science Departments

## Faculty Improvement programme

### Publication by Faculties

#### Book chapters, Journals and Conference Proceedings:

1. **Manna S, Manna B.** (2020) Advanced Laboratory Manual of Parasitology and Immuno parasitology. New Central Book Agency. ISBN no. 978-93-5255-148-4 .
2. S Banerjee, **B Maiti**, B Saha, Device independent key generation using decoy state, *Scopus-Indexed 3rd International Conference on Computational Intelligence, Security & Internet of Things (ICCISIoT 2020)*, National Institute of Technology Agartala, Tripura, on 29<sup>th</sup> – 30<sup>th</sup> December, 2020.
3. PS Banerjee, SN Mandal, D De, **B Maiti**, RL-sleep: Temperature adaptive sleep scheduling using reinforcement learning for sustainable connectivity in wireless sensor networks, *Sustainable Computing: Informatics and Systems*, vol. 26 (June 2020) pp. 100380.
4. PS Banerjee, SN Mandal, D De, **B Maiti**, MACE: Multiple Attributes Correlation based Entropy Measurement of Heterogeneous Wireless Sensor Networks, International Conference on Advanced Computing and Applications (ICACA 2021), Computer Society of India, Kolkata Section, on 27<sup>th</sup> – 28<sup>th</sup> March, 2021.
5. **Ghosh, R**, Bhattacharjee, P. and Pal, A. (2021). Emerging applications of nanotechnology in neurological disorders: Recent review. *Bioscience Biotechnology Research Communication*, 14(1), pp: 66-73.
5. Poster presentation by **Dr. Rajarshi Ghosh**: received an award for the **Best Poster** at the Frontiers in Modern Biology (FIMB) 2020 symposium organized by the Department of Biological Sciences, IISER Kolkata, held on February 28-29, 2020.

6. Oral presentation by **Dr.RAJARSHI GHOSH**: “Break the barriers with Nanotechnology- An emerging tool for neurological disorders” in the in the **First International Virtual Conference On Nanomaterials, FIVCON-2020, 10th–12th September, 2020** organized by Dept. of Nanotechnology, Acharya Nagarjuna University, Guntur, AP., India

### Book chapters

1. **Banik SP**, Bhattacharyya M, Ghosh R, Majumder R (2020) Glycation-induced protein aggregation and cellular toxicity: an insight into the disease realm of high dietary sugar intake, In. Preuss HG, Bagchi D. Dietary Sugar, Salt and Fat in Human Health, Academic Press, pp 251-275
2. Ghosh R, Das A, Bandyopadhyay A, Majumder R, **Banik SP** (2020) Vanadium Toxicity Revisited: Striking the Right Balance between Potential New Generation Therapeutics and Adverse Side Effects, In Bagchi D, Bagchi M. Metal Toxicology Handbook, CRC Press pp 323-343.
3. Biorefinery Approach for Bioethanol Production, R Saha, **D Bhattacharya**, M Mukhopadhyay, Biorefinery Production Technologies for Chemicals and Energy, 313-333, John Wiley & Sons, Inc. 2020
4. Bioactive Compounds Production from Vegetable Biomass: A Biorefinery Approach, S Sengupta, D Bhattacharya, M Mukhopadhyay, Biorefinery Production Technologies for Chemicals and Energy, 241-258, John Wiley & Sons, Inc.2020
5. Stem Cell Aging and Regenerative Medicine, D De, P Karmakar, **D Bhattacharya\***, Adv Exp Med Biol - Cell Biology and Translational Medicine, Springer Nature, New York, NY, 2020
6. Application of Plant Stress for Enhanced Biofuel Production, S Sengupta, **D Bhattacharya**, M Mukhopadhyay, Plant Stress Biology: Progress and Prospects of Genetic Engineering, 35, CRC Press, 2020
7. Plant Responses to Weeds, Pests, Pathogens, and Agrichemical Stress Conditions, R Saha, **D Bhattacharya**, M Mukhopadhyay, Plant Stress Biology: Progress and Prospects of Genetic Engineering, CRC Press, 143, 2020
8. “Enzyme-Nanoparticle Corona: A Novel Approach, Their Plausible Applications and Challenges” M Paul, N Pandey, G Shroti, P Tomar, H Thatoi, **D Bhattacharya**, **S.P Banik**, D Ghosh, S Hazra, Bioprospecting of Enzymes in Industry, Healthcare and Sustainable Environment, Springer, 175-199, 2021
9. Biopolymer based nanofilms for the treatment of burn wounds, B Ghosh, M Mukhopadhyay, **D Bhattacharya\***, Bio-polymer based Nanofilms, 311-336, Elsevier Science, 2021

### Journals:

1. Das A, Basak P, Pramanik A, Majumder R, **Ghosh A**, Hazra S, Guria M, Bhattacharyya M, **Banik SP** (2020) Ribosylation induced structural changes in Bovine Serum Albumin: understanding high dietary sugar induced protein aggregation and amyloid formation, Heliyon, Volume 6, Issue 9, e05053.
2. Mutations in membrane fusion subunit of spike glycoprotein play crucial role in the recent outbreak of COVID19. Podder S.; **Ghosh A.** ; Ghosh T. J. Med Virol 2021, 93:8790-2798. DOI. 10.1002/jmv.26598
3. **D Bhattacharya**, Dutta M, Mukhopadhyay M, Bhattacharyya M, Chowdhury S, Karmakar P” The protective role of metformin in autophagic status in peripheral blood mononuclear cells of type 2 diabetic patients” Cell Biology International 441628-1644, 2020 **IF: 2.571**

4. R Saha, M Mukhopadhyay, **D Bhattacharya\*** “Clinical and Pathological Correlation between SARS-CoV-2 Infection with Coexisting Health Conditions: A Review” Pre-print.org, 10.20944/preprints202012.0356.v1, 2020
5. J Karmakar, P Nandy, S Das, **D Bhattacharya**, P Karmakar, Samaresh Bhattacharya, “Utilization of Guanidine-Based Ancillary Ligands in Arene–Ruthenium Complexes for Selective Cytotoxicity”, ACS Omega, 6, 12, 8226–8238, 2021 IF: 2.87
6. **B Ghosh**, D Bhattacharya and M Mukhopadhyay, “Fabrication of natural polysaccharide-based hydrogel with utility to entrap pollutants”, *J. Phys.: Conf. Ser.* **1797** 012060, 2021
7. **Manna S**, Kar A (2020) Impact of urbanization on abundance of soil arthropods. Uttar Pradesh Journal of Zoology, ISSN: 0256-971X (P); 41(11): 122-127.
8. **Manna S** (2020) Morphogenesis and histopathology of fruit galls induced by Pseudophacopteran sp. on *Alstoniascholaris*. Uttar Pradesh Journal of Zoology, ISSN: 0256-971X (P); 41(22): 1-8.
9. **Manna S**, Das S (2020). Overview of plant nematodes as an agricultural nemesis. International Journal of Recent Scientific Research, Vol. 11, Issue, 10 (C), pp. 39928-39932.
10. **Manna S**, Mondal T and Mitra A (2020). Gluten induced inflammatory responses in murine model: an overview. International Journal of Recent Scientific Research; 11: 07 (B), pp. 39147-39151
11. **Manna S**. (2020). Lacerated myiasis by blowfly on *Bufo melanostictus* schneider, 1799 in west bengal, india. International Journal of Recent Scientific Research. Vol. 11, Issue, 08 (B), pp. 39479-39482
12. **Manna S**, Pal A and Bhattacharjee P. (2021). Asymptomatic sars-cov-2: infection and challenges in india. International Journal of Recent Scientific Research Vol. 12, Issue, 03 (B), pp. 41220-41227.
13. **Manna S**, Naskar S. (2021). Impact of *Thelohanellus* spp. On *Cirrhinus mrigala*: Prevalence, Histopathological and Haematological Alterations. Uttar Pradesh Journal of Zoology. ISSN: 0256-971X (P); 42(7):132-142.

## Seminar/ Workshop by Faculties

1. **Dr. Nabanita Ghosh** along with students presented a poster titled “Parasitic burden and subsequent immune status of common toad (*Bufo* sp.) during rainy season” at National Conference on Future India - Science & Technology, on 27th and 28th February, 2019 held at City College, Kolkata.
2. **Dr. Susanta Roy Karmakar** with students presented a poster titled “Toxicological effect of formalin as food preservative evidenced by cytotoxic and genotoxic effects in mice: A preliminary study” at 3<sup>rd</sup> Regional Science and Technology Congress, 2018, Southern region, on 18-19 December 2018.
3. **Dr. Nabanita Ghosh**, presented a poster titled “Effect of rainfall and environmental temperature on parasitic burden in common toad (*Bufo* sp.) : a preliminary study” at Frontiers in Biotechnology, Chapter III, on 12th October 2018 at St. Xavier’s College (Autonomous), Kolkata.
4. **Dr Samudra P Banik** and Dr A Mukherjee participated Indi International Science Festival at Lucknow on 5<sup>th</sup>-8<sup>th</sup> October 2018.
5. **Dr Ambarish Roy** delivered an Invited lecture at international conference on Synthetic Molecule and Its Application SMIT on 30<sup>th</sup> & 31<sup>st</sup> October 2018.
6. **Dr A Roy**, Dr S Bandyopadhyay, Dr.S Samanta, S Das and Dr A Kundu Discussion meet on experiments in the new syllabus of chemistry under cbcs at Basanti Devi College on 10<sup>th</sup> October 2018.
7. Dr A Kundu & Sri Sanju Das participated in the workshop on CBCS at Gokhel memorial Girls college on 24<sup>th</sup> May 2018
8. Dr Ambarish Roy and Sanju Das presented poster in an International conference entitled Facets of Basic Sciences & Applications (FBSA) at Bijoy Krishna Girls College on 5<sup>th</sup>-7<sup>th</sup> February 2018.



9. Dr.S Roy Karmakar Therapeutic potential of *Nigella sativa* against cadmium induced cytotoxicity, haematological disturbances and hepatorenal damage in mice. in Recent trend in science towards sustainable development, PP134, August 2018.
10. Abhishek Mukherjee, Shubhanwita Basak and Smaranika Biswas presented a paper entitled "*Monocrotophos resistance in Aulacophora foveicollis*" at 5<sup>th</sup> convention of society for Ethnopharmacology at National symposium on promotion & development of Indian Medicinal Plant, Jadavpur University Sept 7<sup>th</sup> & 8<sup>th</sup> 2018 .
11. S K Bhowal Participated in Training workshop on Taxidermy Organised by Zoological Survey of India , Kolkata 8<sup>th</sup> & 9<sup>th</sup> September 2017
12. Dr Rajarshi Ghosh Presented a poster in the International Conference on ‘Contemporary Health issues and Environmental Impact’ held on 30.11.2017, in the department of zoology, Sarojini Naidu College for Women, Kolkata, West Bengal.
13. Dr Rajarshi Ghosh Participated Poultry education programme at Paschim Banga Poultry Mela on 17.02.2018.
14. Dr Rajarshi Ghosh and Sri Sujit Bhowal Participated in the state level one day seminar entitled Biodiversity of West Bengal organized by the Department of Zoology, Ramakrishna Mission Vidyamanira, Belur Math, Howrah, held on 28.09.2018.
15. Dr. Abhishek Dey has participated in “Python For a Cause : Online Workshop on Python Computing”, organized by Teach Python in collaboration with IISER, Kolkata. (12<sup>th</sup> to 24<sup>th</sup> June 2020)
16. Dr. Abhishek Dey has participated in “Web Based Workshop on Teaching Physics at the UG & PG Level using Python” organized by Department of Physics, Victoria Institution (College), Kolkata in collaboration with UGC-DAE Consortium for Scientific Research, Kolkata Centre. (July 6<sup>th</sup> – 10<sup>th</sup> 2020)
17. Dr. Abhishek Dey has participated in “The Enigma of Gravity: From The Apple to The Black Hole” a webinar organized by The Bhawanipur Education Society College, Kolkata on 17<sup>th</sup> July 2020.
18. Dr. Abhishek Dey has successfully completed a 4 week Induction Program organized by TLC, Ramanujan College, New Delhi, under PMMMMNTT, MHRD, Govt. of India. (June 26 - July 24, 2020)
19. Dr. Abhishek Dey has participated in “NATIONAL SCIENCE SERIES: IGNITING YOUNG MINDS”, August 4-6, 2020 organised by Bhaskaracharya College of Applied Sciences, University of Delhi under the aegis of Star College Scheme, Department of Biotechnology, Government of India and IQAC.
20. Dr. Abhishek Dey has participated in “Two Day National Webinar on Fundamental Physics”, Department of Physics, in Collaboration with IQAC, Asutosh College, Kolkata. (27<sup>th</sup> and 28<sup>th</sup> August 2020)
21. Dr. Abhishek Dey has participated in Webinar titled “Modern Aspect of Non-linear Dynamics”, on 6<sup>th</sup> September 2020, organized by Dept. of Physics and Mathematics and IQAC , Govt. Gen. Degree College, Kalna I, West Bengal.
22. Dr. Abhishek Dey has participated in Webinar titled “CONCEPTS AND CHALLENGES IN ASTRONOMY AND ASTROPHYSICS” on 28<sup>th</sup> August, 2020 organized by Department of Geography in collaboration with IQAC, Kishore Bharati Bhagini Nivedita College, Kolkata.
23. Dr. Abhishek Dey has participated in National webinar titled *HARNESSING QUANTUM “WEIRDNESS” TOWARDS NEW-AGE TECHNOLOGIES*, on 26<sup>th</sup> September 2020, by Dept of Physics and Central Library, Sushil Kar College.
24. Dr. Abhishek Dey has participated in the FDP titled “Quantum Mechanics in Python” on 19<sup>th</sup> February 2021, organized by Department of Physics, Prabhu Jagatbandhu College.

25. Dr. Abhishek Dey has successfully completed the “Refresher Course in Physics”, organized by TEQIP-III, IIT-Dhanbad. (8<sup>th</sup> to 20<sup>th</sup> February 2021.)
26. Dr. Sanjay Chattopadhyay has participated in the “Webinar on Exploring universal phenomenon in different energy scales: materials for the decades” on 12<sup>th</sup> June, 2020, organised by Adamas University.
27. Dr. Sanjay Chattopadhyay has participated in “Python For a Cause : Online Workshop on Python Computing”, organized by Teach Python in collaboration with IISER, Kolkata. (12<sup>th</sup> to 24<sup>th</sup> June 2020).
28. Dr. Sanjay Chattopadhyay has participated in One Day National Level Webinar “Nanomaterials: Their Recent Issues & Impacts on Society” held on 21<sup>st</sup> August, 2020 organized by Department of Physics in collaboration with IQAC, Sovarani Memorial College, Jagatballavpur, Howrah.
29. Dr. Sanjay Chattopadhyay has participated in National level one day webinar on "Discovering the Fascinating World of Physics", Chapter 02: "Exploring the Sky: From Aryabhata to Chandrayaan", organised by the Department of Physics, Krishnagar Government College, Krishnagar, Nadia, West Bengal, held on 21st August, 2020.
30. Dr. Sanjay Chattopadhyay has participated in state level one day webinar on "Discovering the Fascinating World of Nano-Science" organised by the Department of Physics in collaboration with IQAC, Krishnagar Government College, Krishnagar, Nadia, West Bengal, held on 3rd August, 2020.
31. Indrani Roy has successfully completed National level One Week Online Faculty Training Program on "PEDAGOGICAL TRAINING FOR EFFECTIVE ONLINE TEACHING & LEARNING", organised by DeenDayal Upadhyaya College (University of Delhi) and K.T.H.M. College, Nashik, Maharashtra, under IQAC and DBT star college program, from 3rd to 10th August 2020.
32. Indrani Roy has successfully completed a one week Faculty Development Program on “UG Level Computational Physics Practical Using Python” held from 04th January 2021 to 09th January, 2021, Organized by Department of Physics & Internal Quality Assurance Cell (IQAC) of BirjhoraMahavidyalaya, Bongaigaon, Assam, India.
33. Indrani Roy is undergoing a course titled “Introduction To Quantum Physics and Its Applications”, under Annual Refresher Programme in Teaching (ARPIT), from SWAYAM.
34. Indrani Roy is undergoing a course titled “Components And Applications Of Internet Of Things”, under Annual Refresher Programme in Teaching (ARPIT), from SWAYAM.
35. Indrani Roy has successfully completed the online level 2 credentialing requirement of the “International Certified Career Coach Program”, by Mindler (India) and Career Development Alliance (USA) April 2020 to June 2020
36. Indrani Roy has successfully completed a 50hours online internship in clinical psychology from 3<sup>rd</sup> to 12<sup>th</sup> July 2020, organised by department of mental health and behavioural sciences, Fortis Healthcare.
37. Dr.Sanjit K. Das has participated in “Python For a Cause : Online Workshop on Python Computing”, organized by Teach Python in collaboration with IISER, Kolkata. (12<sup>th</sup> to 24<sup>th</sup> June 2020)
38. Dr. Sanjit K. Das has participated in the webinar on “Electron Spectroscopy: An Undergraduate View” organised by the Department of Physics, in collaboration with IQAC, Scottish Church College, on 21st July, 2020.
39. Dr.Sanjit K. Das has participated in the webinar ‘Spacetime Mysteries - from Newton to Einstein to Hawking’, organised by Sky Watchers’ Association on 1st August 2020.
40. Dr.Sanjit K. Das has participated in a one day State Level Webinar organised by Dept. of Physics in collaboration with IQAC, DinabandhuMahabidyalaya on “ The Story of Gravity, From Apple to the Black Hole and the Gravitational wave” on 4<sup>th</sup> August, 2020.

41. Dr. Sanjit K. Das has participated in a two day National Webinar on Fundamental Physics Organized by Department of Physics, in Collaboration with IQAC, Asutosh College the webinar on (i) 'Role of Symmetries in Physics' presented by Dr. Biswarup Mukherjee, HAG Professor, Department of Physical Science, IISER, Kolkata, held on 27th August, 2020 & (ii) on 'Quasiperiodic order in Physics', presented by Dr. Arunava Chakrabarti, Professor, Presidency University, held on 28th August, 2020.
42. Dr. Sanjit K. Das has participated in a one day webinar on Online Teaching and Learning – Strategic Insight Into Physics organised by Department of Physics in collaboration with IQAC, Ramsaday College on 31<sup>st</sup> August, 2020.
43. Dr. Sanjit K. Das has participated in a Two-Day Web Based International Workshop on "ARDUINO and other Simulated Experimental Techniques" organized by the Department of Physics, Victoria Institution (College) held during 1st - 2nd Sep, 2020.
44. Dr. Sanjit K. Das has participated in a One Day State Level Webinar on "MODERN ASPECTS OF NONLINEAR DYNAMICS" on 6th September, 2020 organized by Department of Physics and Mathematics with IQAC, Govt. General Degree College at Kalna – I.
45. Indrani Roy was ranked 3rd for her performance in the online MCQ test on Python on "UG Level Computational Physics Practical Using Python" held on 09th January, 2021, Organized by Department of Physics & Internal Quality Assurance Cell (IQAC) of Birjhora Mahavidyalaya, Bongaigaon, Assam, India.
46. Dr. Rajarshi Ghosh has participated in National Webinar on 'Health and Healthcare in the Present Scenario – COVID19' organized by Internal Quality Assurance Cell of The Maharaja Sayajirao University of Baroda, Vadodara, held during 08- 09 May, 2020.
47. Dr. Rajarshi Ghosh has participated in the Online Scientific Writing Program on the topics Structuring your manuscript to impress journal editors and Selecting a journal and preparing a great submission package organized by Editage on 21.05.2020.
48. Dr. Rajarshi Ghosh has participated in the Webinar on "CARE TO BIODIVERSITY" organized by ENVIS Resource Partner on Environmental Biotechnology, University of Kalyani, West Bengal, India, and Sponsored by MoEF& CC, Govt. of India on world environment Day on 05.06.2020.
49. Dr. Rajarshi Ghosh has participated in the webinar session entitled 'Physics of Life Sciences: A perspective' organized by Department of Zoology & IQAC, Gurudas College on 05.06.2020.
50. Dr. Rajarshi Ghosh has actively participated in the episode 1 of BCRCP webinar series 2020 "Patents in pharmacological industry", organized by Dr. B.C. Roy College of Pharmacy and Allied Health Science, held on 06.06.2020.
51. Dr. Rajarshi Ghosh has actively participated in the webinar "SARS COV-2: Virus and Health issues" organized by IQAC, Bethune College on 12.06.2020.
52. Dr. Rajarshi Ghosh has actively participated in the webinar "Transforming ourselves: Revisiting health and education in covid-19 world" jointly organized by Dept. of Zoology and IQAC, NarasinhaDutt College on 14.06.2020.
53. Dr. Rajarshi Ghosh has actively participated in National Level Webinar on "COVID 19 Diagnosis: Prospects & Challenges", Organized by Dept. of Microbiology & Zoology, Maulana Azad College, 27<sup>th</sup> June, 2020.
54. Dr. Rajarshi Ghosh has participated in International webinar on "COVID 19: The Disease, Prevention and Control", organized by IQAC, GGDC Singur on 2<sup>nd</sup> July, 2020.
55. Dr. Rajarshi Ghosh has participated in International webinar on "COVID 19: Through the eyes of young researchers", organized by Department of zoology, Chemistry, Botany and Physics, Surendranath College on July 3-4, 2020.
56. Dr. Rajarshi Ghosh has participated in national webinar on "COVID 19: Testing and Modelling Perspective", organized by Department of zoology, Chemistry, Botany and Physics, Surendranath College on July 5, 2020.



57. Dr. Rajarshi Ghosh has participated in state-level webinar on “Administrative Affairs Thrusting upon Promotion of College Teachers / Librarians under CAS” organized by Teacher’s council and IQAC, City College on July 11, 2020.
58. Dr. Rajarshi Ghosh has actively participated in the national webinar on “Covid 19 and other emerging issues in wildlife crime” organized by IQAC, Narasinha Dutt College on 12.07.2020.
59. Dr. Rajarshi Ghosh has actively participated in the one day international web conference on “Need of the hour amidst pandemicity: Immunological and Psychological, with special attention to students” jointly organized by Dept. of Zoology and Botany, Victoria Institution (College) on 15.07.2020.
60. Dr. Rajarshi Ghosh has actively participated in the international webinar entitled “Living amidst COVID-19: Issues and Concerns” organized by ABN Seal College, Cooch Behar on 18.07.2020.
61. Dr. Rajarshi Ghosh has actively participated in the one day webinar entitled “The wonders of the Toothless Sea Giants-Baleen Whales” organized by ZSI marine aquaculture and Regional centre, Digha, West Bengal on 24.07.2020.
62. Dr. Rajarshi Ghosh has actively participated in the two- day international webinar entitled “Down syndrome research-approach and updates” organized by department of Zoology, University of Calcutta held on July, 30-31, 2020.
63. Dr. Rajarshi Ghosh from Maulana Azad College, Kolkata has participated in the National Science Series, organized by Bhaskaracharya College of Applied Sciences, University of Delhi under the aegis of Star College Scheme, Department of Biotechnology, Government of India and IQAC on August 4-6, 2020.
64. Dr. Rajarshi Ghosh has participated in Webinar on "How to Read Scientific Literature?" and successfully completed the Online Evaluation including the English Proficiency Test organized by MANAV
65. Dr. Rajarshi Ghosh participated actively on National level e-Workshop on Molecular Visualization and Modelling using Python Programming, Organized by Departments of Physics, Microbiology and Zoology, 10th-12th August, 2020.
66. Dr. Rajarshi Ghosh has actively participated in the two-day international webinar entitled “Sustainability amidst the covid-19 pandemic” jointly organized by department of Zoology and Botany, Charuchandra College, Kolkata held on August 12-13, 2020.
67. Dr. Rajarshi Ghosh has actively participated in the one-day international webinar on “Science, biology and the world’s future” organized by Department of Botany in collaboration with IQAC, Dinabandhu Andrews College, Kolkata held on 25.08.2020.
68. Dr. Rajarshi Ghosh has actively participated in the one-day national webinar on “How to live a healthy life amidst the pandemic crisis?” organized by Maulana Azad College held on 02.09.2020.
69. Dr. Rajarshi Ghosh has actively participated in the one-day national webinar on “Surviving in a covid world: Major issues in India” organized by Barasat Government College held on 03.09.2020.
70. Dr. Rajarshi Ghosh has actively participated in the one-day national level webinar on “Regulations and safety measures in food industry” jointly organized by department of zoology, microbiology and IQAC, Maulana Azad College held on 18.09.2020.
71. Dr. Rajarshi Ghosh has actively participated in the one-day international webinar on “Emerging health management with special reference to covid-19 and snake bite in India” organized by IQAC, Maulana Azad College in collaboration with Dr. Sites Chandra Lahiri Memorial Foundation, held on 21.09.2020.
72. Dr. Rajarshi Ghosh has actively participated in the one-day webinar on “Control of malaria and dengue vectors by targeting the insecticide resistance development mechanisms on mosquitoes”

organized by insect biochemistry and molecular biology lab, department of zoology, University of North Bengal held on 20.02.2021.

73. Dr. Rajarshi Ghosh has actively participated in the one-day webinar on “Science, technology and innovation in shaping education” on the occasion of celebration of National Science Day organized by Maulana Azad College in collaboration with Microbiologists Society, India held on 28.02.2021.
74. Dr. Samudra ProsadBanik, “Stabilisation of Extracellular Fungal Cellobiase by trehalose: A Cross-linker free approach to prevent spontaneous dissociation of big cellulolytic enzyme assemblies” in the 7<sup>th</sup> International e-conference on “Challenges and opportunities in Medical, Environmental and Biotechnological Research” GenoPro2020 on 10<sup>th</sup>-11<sup>th</sup> December, 2020 organized by Invertis University, Bareilly.
75. Dr. Samudra ProsadBanik, “Ribosylation induced Non-canonical amyloid formation in Bovine Serum Albumin: Insights into glycation mediated protein aggregation” in the India International Science Festival 2020 organized during 22.12.2020 to 24.12.2020.
76. Dr. Debalina Bhattacharya B Ghosh, D Bhattacharya, A Kotal, A Kuila, M Mukhopadhyay “Cytocompatible, Thermostable Hydrogel with Utility to Release Drug Over Skin” in National Online Conference on “Environment, Human Health and Sustainable Development Goals”, held on 5th-6th June 2020, organised by Environment And Social Development Association (ESDA), Delhi.
77. Dr. Debalina Bhattacharya B Ghosh, D Bhattacharya, M Mukhopadhyay, “Fabrication of natural polysaccharide based hydrogel with utility to entrap pollutants” on “International Online Conference on Engineering Response to Covid-19, 2020”, held on 8th-9th October 2020, organised by JIS College of Engineering Kalyani, West Bengal, India.
78. Dr. Debalina Bhattacharya S Ghosh Chowdhury, R Ray, D Bhattacharya, P Karmakar, “Modification of Cancer Cell Survivability By Exosomes” in Young Scientists Conference, India International Science Festival-2020, held on 22nd-24th December 2020, organised by Ministry of Science and Technology, Ministry of Earth Sciences and Ministry of Health and Family Welfare, Govt of India.

#### **Invited lectures in webinars by Faculty members**

79. Dr. Samudra ProsadBanik “ Biotechnology: A tool for improving human welfare” on 12<sup>th</sup> March, 2021 organized by Jagadis Bose National Science Talent Search, Kolkata, supported by Dept. of Science and Technology and Biotechnology, Govt. of West Bengal.
80. Dr. Debalina Bhattacharya, Dr. Avishek Ghosh, Dr. Arpan Das, Mrs. Bipasha Roy, Dr. Samudra ProsadBanik, One-day National webinar on “Regulations and Safety Measures in Food Industry” 18th Sep 2020, DBT star college programme, organised by department of Zoology, Microbiology and Internal Quality Assurance cell of MAC.
81. Dr. Debalina Bhattacharya, Dr. Avishek Ghosh, Dr. Arpan Das, Mrs. Bipasha Roy, Dr. Samudra ProsadBanik Mrs. Bipasha Roy, One-day International webinar on “Emerging Health Management with special reference to Covid-19 & Snake -bite In India” organised by Internal Quality Assurance Cell, Maulana Azad College in collaboration with Dr. Sites Chandra Lahiri Memorial Foundation. 21st November, 2020
82. Mrs. Bipasha Roy, Faculty Enrichment for Life-Science Teachers in Higher Education, organised by National Resource Centre for Education, 14th January, 2021
83. Dr. Debalina Bhattacharya, Dr. Avishek Ghosh, Dr. Arpan Das, Mrs. Bipasha Roy, Dr. Samudra ProsadBanik Mrs. Bipasha Roy, National webinar on “the Covid-19 economic crisis”- organised by Department of Economics and IQAC , MAC, 31st July, 2020
84. Dr. Debalina Bhattacharya, Dr. Avishek Ghosh, Dr. Arpan Das, Mrs. Bipasha Roy, Dr. Samudra ProsadBanik Mrs. Bipasha Roy, National Science Day webinar on “Future of Science, Technology and Innovation: Impacts on Education, Skills and Work” organised by Maulana Azad College held, 28th February, 2021. DBT star college programme.

85. Dr. Debalina Bhattacharya, Dr. Avishek Ghosh, Dr. Arpan Das, Mrs. Bipasha Roy, Dr. Samudra ProsadBanik Mrs. Bipasha Roy, Three day National level e-Workshop on Molecular Visualization and Modelling using Python Programming, Organized by Departments of Physics, Microbiology and Zoology, 10th-12th August, 2020.
86. Dr. Debalina Bhattacharya, Dr. Avishek Ghosh, Dr. Arpan Das, Mrs. Bipasha Roy, Dr. Samudra ProsadBanik National Level Webinar on CoViD 19 Diagnosis: Prospects & Challenges, Organized by Dept. Of Microbiology & Zoology, Maulana Azad College, 27<sup>th</sup> June, 2020.
87. Dr. Avishek Ghosh, One Day State level Webinar on An Expedition to Antarctica, Dept. Of Zoology, BhairabGanguly College. 28<sup>th</sup> July, 2020.
88. Dr. Avishek Ghosh, Emergence of New Pandemics: New Challenges to Microbiologists, Dept. Of Microbiology & IQAC, Bidhannagar College, 5<sup>th</sup> August, 2020.
89. Dr. Avishek Ghosh, Structure-Function Aspects of proteins using X-Ray Crystallography, Dept. Of Biochemistry, Vivekananda College, Thakurpukur, 5<sup>th</sup> August, 2020.
90. Dr. Avishek Ghosh, NAAC Revised Accreditation Guidelines & Role of IQAC in Post COVID 19 Era, IQAC, St. Vincent Pallotti College of Engineering & Technology, Nagpur with NAAC, Bangalore, 6<sup>th</sup> August, 2020.
91. Dr. Avishek Ghosh, acted as member of Organising Committee in the Four day National Level Webinar DSE topics of UG Chemistry, CBCS Syllabus, University of Calcutta, IQAC, Maulana Azad College & IQAC, Ashutosh College, 4<sup>th</sup> to 7<sup>th</sup> August, 2020.
92. Dr. Avishek Ghosh, Acted as member of organising committee & participated in the Three day National Level e-Workshop on Molecular Visualisation & Modelling using Python Programming, Dept. Of Physics, Microbiology & Zoology, Maulana Azad College, 10<sup>th</sup> to 12<sup>th</sup> August, 2020.
93. Dr. Avishek Ghosh, NAAC Accreditation Process in the perspective of New Education Policy, Jointly organised by IQAC of Malda College, K.K. Das College, Kolkata & SahidKshudiram College, Alipurduar, 22<sup>nd</sup> August, 2020.
94. Dr. Avishek Ghosh, Science, Biology & World's Future, Dept. Of Botany & IQAC, Dinabandhu Andrews College, 2<sup>th</sup> August, 2020.
95. Dr. Avishek Ghosh, 'Shataborshe Satyajit: ShishukishorersimanaperiyeFeluda', IQAC, NarasinhaDutt College, 26<sup>th</sup> August, 2020.
96. Dr. Avishek Ghosh 'Acted as member of organising committee & participated in the One day National level Webinar on Role of Indigenous Traditional Knowledge & Herbal Drugs in combating against Pandemic CoViD 19, Dept. Of Botany & IQAC, Maulana Azad College, 11<sup>th</sup> September, 2020.
97. Dr. Avishek Ghosh 'Acted as member of organising committee & participated in the One day National level Webinar on Herbs for Healthcare- Exploring the Ethnopharmacology for better Therapeutics, Dept. Of Botany & IQAC, Maulana Azad College, 12<sup>th</sup> September, 2020.
98. Dr. Avishek Ghosh Acted as member of organising committee & participated in the One day National level Webinar on Regulations & Safety measures in Food Industry, Dept. Of Microbiology, Zoology & IQAC Maulana Azad College, 18<sup>th</sup> September, 2020.
99. Dr. Avishek Ghosh Mathematics & its Recent Trends, Dept of Mathematics & IQAC, Maulana Azad College & Biomathematical Society of India, 28<sup>th</sup> and 29<sup>th</sup> September, 2020.
100. Dr. Avishek Ghosh, Acted as member of organising committee & participated in One Day International Webinar on "Emerging Health Management with special reference to Covid-19 & Snake -bite In India" IQAC, Maulana Azad College & Dr. Sites Ch. Lahiri Memorial Foundation, 21<sup>st</sup> November, 2020.
101. Dr. Debalina Bhattacharya "Science Leader Workshop", held on 22<sup>nd</sup>-28<sup>th</sup> June 2020, organised by Central university of Punjab, Bhatinda.



102. Dr. Debalina Bhattacharya “Three day National Level e-Workshop on Molecular Visualization and Modelling Using Python Programming”, held on 10-12<sup>th</sup> August 2020, organised by Maulana Azad College
103. Dr. Debalina Bhattacharya Got Elite-Silver Certificate in Four Weak Faculty Development Program on “Functional Genomics” exam held on 18<sup>th</sup> December 2020, organised by NPTEL Online Certification Course.
104. Dr. Debalina Bhattacharya Got A+ in Faculty Development Program on “Development of e-content and Moocs in Four Quadrants” held on 18<sup>th</sup>-21<sup>st</sup> January 2021, organised by Guru Angad Dev Teaching Learning Centre, University of Delhi with Kanya Maha Vidyalaya, Jaladhar.
105. Dr. Debalina Bhattacharya Sir J. C. Bose Annual Memorial Lectures, held on 26<sup>th</sup> June 2020, organized by Raidighi College, West Bengal
106. Dr. Debalina Bhattacharya, National Online seminar on "Covid-19 Pandemic-Challenges and conquest for students, held on 26<sup>th</sup> June 2020, organized by City College, Kolkata
107. Dr. Debalina Bhattacharya, International Webinar Series of Session II on "From Microbes to Plants: It's Biology All The Way: Refreshment Amidst The Pandemic Gloom" held on 26<sup>th</sup> & 28<sup>th</sup> June 2020, organised by Vijoygarh Jyotish Ray College, Kolkata
108. Dr. Debalina Bhattacharya, Webinar on "Microbiome-Perceptions and Perspectives" held on 27<sup>th</sup> June 2020, organised by Biotechnika and K-Tech
109. Dr. Debalina Bhattacharya, Webinar on "Covid-19 Invasion: A Challenge to Humanity", held on 29<sup>th</sup> June 2020, organised by T.K Jain College
110. Dr. Debalina Bhattacharya, “Nucleic Acid Handling Webinar series”, held on June-July 2020, conducted by Merk Innovation Lab
111. Dr. Debalina Bhattacharya, International Webinar on “Covid 19; The Disease, Prevention and Control” held on 2<sup>nd</sup> July 2020, organised by IQAC Govt General degree College Singur
112. Dr. Debalina Bhattacharya, “Clinical And Molecular Aspect of SARS-Cov2: Its Implication on the current pandemic”, held on 2<sup>nd</sup> & 4<sup>th</sup> July 2020, organised by Scottish Charge College.
113. Dr. Debalina Bhattacharya, Webinar on “Virtual Online Classroom Teacher” held on 4<sup>th</sup> July 2020, organised by Skillnet
114. Dr. Debalina Bhattacharya, A Webinar on Oncology Scientific Update in Covid19 Pandemic, held on 18<sup>th</sup> July 2020, organised by International Association of Oncology
115. Dr. Debalina Bhattacharya, “An Expedition to Antartica”, held on 28<sup>th</sup> July 2020, organised by BhairabGanguly College
116. Dr. Debalina Bhattacharya One Day State Level Webinar on Well-Being During Covid19 Pandemic: Psycho and Philosophical Perspectives”, held on 30<sup>th</sup> July 2020, organised by Krishnanagar Government College
117. Dr. Debalina Bhattacharya, An International Webinar on “The Emerging Pandemic Crisis: Physiological and Socio-environmental Imperatives”, held on 3<sup>rd</sup> August 2020, organised by Sister Nibedita Govt. General Degree College For Girls
118. Dr. Debalina Bhattacharya, Dr. Arpan Das “National science series” held on 4<sup>th</sup>-6<sup>th</sup> August 2020, organised by Bhaskaracharya College of Applied Sciences
119. Dr. Debalina Bhattacharya One day National Level Webinar on the "Relevance of Massive Open Online Courses (MOOCs) in the Time of Pandemic" held on 12<sup>th</sup> August 2020, organized by Jhargram Raj College, Jhargram.
120. Dr. Debalina Bhattacharya National Webinar on ‘NAAC Accreditation Process in the perspective of New Education Policy’ held on 22<sup>nd</sup> August 2020, Jointly Organized by IQAC, Malda College, Malda, IQAC, K.K. Das College, Kolkata & IQAC, Saheed Kshudiram College, Alipurduar in collaboration with NAAC, Bengaluru

121. Dr. Debalina Bhattacharya Webinar Series on “Microbiology: Industrial Applications And Sustainable Development”, held on 24<sup>th</sup>, 28<sup>th</sup> & 29<sup>th</sup> August 2020, organised by T.K Jain College
122. Dr. Debalina Bhattacharya “Webinar on India I EMBO Lecture Courses” held on 15<sup>th</sup> December 2020, organised by India Alliance
123. Dr. Debalina Bhattacharya Webinar on “Does the Everyday world obey the quantum mechanics?” held on 13<sup>th</sup> January 2021, organised by The National Academy of Science, India
124. Dr. Arpan Das From Microbes to Plants: It's Biology All The Way: Refreshment Amidst The Pandemic Gloom National Level Webinar organized by Department of Botany, Microbiology & IQAC of Vijaygarh Jyotish Ray College, Kolkata on the 28<sup>th</sup> June, 2020.
125. Dr. Arpan Das Frontiers in Biological Sciences....Current Scenario, International webinar organized by St. Xaviers College, Kolkata, 2<sup>nd</sup> and 4<sup>th</sup> July, 2020.
126. Dr. Arpan Das MICROBIOME - PERCEPTIONS AND PERSPECTIVES, National Level Webinar organized by Biotechnika Info Labs Pvt Ltd, 27<sup>th</sup> June, 2020.
127. Dr. Arpan Das Covid 19....Control, International webinar organized by Govt. General Degree college, Singur on 2<sup>nd</sup> July, 2020.
128. Dr. Arpan Das Covid 19....Containment, National Level webinar organized by Prafulla Chandra College, Kolkata, 20<sup>th</sup> July, 2020.
129. Dr. Samudra Prosad Banik MicroBi-Con-2020 an International Webinar on “SARS-CoV-2 : In search of an Origin to Antidote” organized by Department of Microbiology, Dum Dum Motijheel College, Kolkata, India on 7<sup>th</sup> and 8<sup>th</sup> July, 2020
130. Dr. Samudra Prosad Banik webinar on “Covid-19 Invasion: A Challenge to Humanity”, organized by Department of Microbiology on 29<sup>th</sup> June, 2020.
131. Dr. Samudra Prosad Banik, Webinar series, entitled “Regulation of eukaryotic gene at post-transcriptional level” on 16<sup>th</sup> July, 2020 organized by Raidighi College, West Bengal
132. Dr. Samudra Prosad Banik, Webinar on Microbial enzyme mediated carbon sequestration organized by Department of Biotechnology, Muthayammal College of Arts & Science, Rasipuram on 14-07-2020.
133. Dr. Samudra Prosad Banik Webinar on “And Then There Were None! Metabolic Systems Biology Approaches To Overcome Drug Resistance In Cells” organized by MANAV, A Human ATLAS Initiative on 26 Nov 2020.
134. Dr. Samudra Prosad Banik, participated in the third lecture of the Webinar series, entitled “Gene Interactions that Control Longevity”, on 21<sup>st</sup> July, 2020 organized by Raidighi College, West Bengal.
135. Dr. Samudra Prosad Banik. Webinar on the response of DBT's autonomous Institutes to COVID-19 (Part III) organized by India Alliance.
136. Dr Samudra Prosad Banik, National Science Series from August 4-6, 2020 organised by Bhaskaracharya College of Applied Sciences, University of Delhi under the aegis of Star College Scheme, Department of Biotechnology, Government of India and IQAC
137. Dr. Samudra Prosad Banik International Online Faculty Enrichment Programme on "Tips & Tricks for Publishing in International Scientific Journals" on June 20<sup>th</sup>, 2020 Organized by Department of Zoology, Chemistry, Botany & Physics (Under DBT-Star College Strengthening Scheme, Govt. of India) Surendranath College, Kolkata.
138. Dr. Samudra Prosad Banik International Webinar entitled "COVID-19: Through the Eyes of Young Researchers" on July 3<sup>rd</sup> & 4<sup>th</sup>, 2020 organized by Surendranath College, Kolkata.
139. Dr. Samudra Prosad Banik Two Days National Workshop titled “Blended Learning Approaches in Teaching” (WS-BLAT) on 17<sup>th</sup> July -18<sup>th</sup> July, 2020 organized by Microbiologist Society, India

140. Dr. Samudra Prosad Banik participated in the National Webinar on Health and Healthcare in the Present Scenario – COVID19 organized by Internal Quality Assurance Cell of The Maharaja Sayajirao University of Baroda, Vadodara, held during 08 – 09 May 2020.
141. Dr. Samudra Prosad Banik National Webinar on “Clinical and Molecular Aspects of SARS CoV2: Its implication on the current pandemic” organized by Department of Microbiology, Scottish Church College, in collaboration with IQAC, on 2nd and 4th July 2020.

## **F) Interdisciplinary Hands on training programme**

1. Immobilisation and Characterisation of extracellular fungal amylase (produced through solid state fermentation).
2. Effect of various sound and electromagnetic waves on growth of bacteria.
3. Development and optimisation of an agarose/sepharose based DNA gel electrophoresis for separation of broad range DNA fragments.
4. Production of amylase through solid state fermentation of agrowaste.
5. Production of heavy metal nanoparticles by microorganisms.
6. Workshop on Probiotics
7. Structural Characterization of a polynuclear Cu(II) azido complex and its DNA interactions
8. Characterization of Organic Compounds Through TLC & FTIR
9. Spreadsheet Applications in Chemistry Using Microsoft Excel
10. Extraction of alkaloids through Column Chromatography and characterization through FTIR and UV-Vis spectroscopy
11. Quadrat Sampling in NEWTOWN HIDCO LAND to study Community structure
12. Making of Heating tools for drying Macrophytic Fungi
13. Collection Techniques of Fungi and Algae
14. Dissecting Angiosperm Flowering Plants by using a Flowering Parts Mounting technique on Curtis Paper (Acid Free papers)
15. Quadrat Sampling in Rabindra Sarovar Park Areas
16. Biosorption of Dyes by Water Hyacinth Root and Coir pith
17. Cell viability Study through Trypan Blue assay
18. Demonstration of Budding in Hydra and Regeneration process of *Planaria* sp
19. Study of Chromosome and Fluorescence staining
20. Discrete Fourier Transform with its Plant Cell application to Fast Fourier Transform Spectroscopy
21. Application of Differential Equation in Biology
22. Verification of Bohr's theory with Frank Hertz Experiment
23. Mathematical modelling in Biology
24. Polarisation of light and optical rotation
25. Resonance phenomenon in electrical and electronic circuit
26. Electromechanical workshop practice

### **6. Any Novel aspect introduced during the Scheme duration.**

1. Organized One Day Science popularization programme on concept & advances of modern Biology & Biotechnology under DBT-CTEP Scheme, 13<sup>th</sup> February 2020.



2. Organized "Three-day National level e-Workshop on Molecular Visualization and Modeling using Python Programming" in collaboration with IIT Roorkee ,10th -12th August, 2020.
3. Oral presentation by students in collaboration with Dept. of Biotechnology, IIT-Roorkee in the National online conference on Environment, Human Health and Sustainable Development Goals and World Environment Day 2020 Celebrations organized by Environment and Social Development Association (ESDA) along with Dr. Bhim Rao Ambedkar College, CSIR- NEERI, GRC-India, GD Goenka University Gurugram, Amity University Haryana and RML Avadh University Ayodhya.
4. Participation and paper presentation at IISF 5<sup>th</sup> to 8<sup>th</sup> November 2019 , Kolkata. Students of all beneficiary department visited the stall and exhibition of IISF, Kolkata

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

- a) During two years 2020 & 2021 College authority faced a lot of difficulties in holding adequate number of hands-on training programme, industry visit, etc due to severe lockdown due to covid pandemic attack.
- b) Students were busy throughout the session due to introduction of online class and also in online examination conducted by University.
- c) Due to the introduction of PFMS portal system, the college submitted the Utilization certificate after due date and accordingly the flow of fund was delayed which badly hampered overall progress of the projects in the last financial year.

8. **Keyperformanceindicators**

S. no	Indicator	Pre-support	During/After Support	Remarks
1	No. of students admitted	<b>Total =300</b>	<b>Total =344</b>	
		<b>M=205</b>	<b>F=95</b>	
		SC ST OBC G	SC ST OBC G	
		37 3 43 122	19 0 15 61	
			36 5 55 144	
			18 0 11 75	
2	Admission cut-off %			
3	No. of students passing out (%) [Students Admitted/passing out (pass%)]	276 (92%)	327 (95%)	
4	Drop-out rates	24 (8%)	17 (4.9%)	
5	No. of students opting for MSc / M.Tech/ PG Diploma in Science	255	310	
6	Average marks	70%	80%	
7	No. of hands-on experiments being conducted	05	17	
8	No. of new experiments introduced	Nil	15	
9	Publications (scopus indexed)/patents, if any.		ANNEXURE D	
10	Training received by (A) Faculty (B) Students (Summer/ Winter Projects)		ANNEXURE -E	
11	Exhibitions/seminars /training courses conducted		ANNEXURE -F	
12	Books/journals subscribed from grants		NO GRANT	
13	Outreach activities (Popular lectures)		ANNEXURE -F	
14	Colleges mentored to apply for DBT Star College grants		06	
15	Invited lectures		ANNEXURE F	

- Proofs (S.No. 6-14 not more than 5 pages per departments, 1.5 line spacing 11 times roman font size) to be provided duly attested by Principal and Coordinator.

10. Details of colleges / schools mentored during the Star Scheme Tenure (Name of college / school; class / standard; No. of students benefited; whether any mentored college applied under Star College Scheme, if yes what was the outcome.

Scottish Church College, Kolkata- Applied  
 Bijoy Krishna Girls College, Howrah- Applied  
 Ramakrishna Mission centenary College, Rahara Selected for Phase I Star College  
 Durgapur Govt College, Durgapur Selected for Phase I Star College  
 Nowgong College, Assam Selected for Phase I Star College

11. Details of increase in the faculty generated resources viz extramural research grants from other funding agencies to strengthen the Star College Scheme efforts.

1. "Inventorization of Sacred Groves in Jalpaiguri and Alipurduar districts in West Bengal" West Bengal Biodiversity Board, Rs 4,00,000/- 2017-2020. PI- Dr S Panda, Deptt of Botany
2. "Studies on the silkworm (*Bombyx mori*) nourishment levels at larval periods and the growth there after with immune power" Dept. of Higher Education, Science and Technology and Biotechnology, Govt. of West Bengal Rs 7,98,000/- 2017-2021. PI-Dr D.K Som. Deptt of Zoology
3. Effect of trehalose on aggregation of fungal glycosidase. UGC, Rs-14,53,000/-2015-2018. PI- Dr S P Banik, Deptt of Microbiology
4. Development and testing of herbo nano compounds against experimental snake envenomation, ICMR, Rs-11,84,410/- PI- Dr S C Dasgupta, Deptt of Zoology, 2015-2018.

12. SOPs developed, lab manuals created and uploaded on website or submitted to DBT.

**Life Science Protocol Manual- DBT Star College Scheme 2018**

**13. Self-evaluation**

Department	*Objective(asstatedinproposal)	%achieved	Reasons forunderachievement /Ifachieved, state in quantitativemetrics
	ANNEXURE G		

\* For quantitative analysis you may fix five objective (max) each having 2 marks and accordingly calculatethe matrix.

  
 Course Coordinator  
 (With Seal)  
 Co-ordinator  
 DBT-Star College Programme

**CourseCoordinator  
 (WithSeal)**

**HeadoftheInstitution  
 (WithSeal)**



## Annexure A

1. Md. Osama Ali, a student of 4<sup>th</sup> semester (2021) has completed a project titled “Propagation of Electron Acoustic (KdV) Solitary Structure in an Ultrarelativistic Quantum Plasma” under supervision of Dr.Swarniv Chandra, Assistant Professor, Govt. General Degree College, Kushmandi, West Bengal 733121.He has submitted the project to “Summer Workshop on Plasma Physics 2020” organized by PhysicsJoint, An Association of Physicists, Kolkata 700032, India, on 27<sup>th</sup> August 2020.
2. Md. Osama Ali, a student of 4<sup>th</sup> semester (2021) has participated in “Winter School 2021” on “Quantum Field Theory” organized by Blackbeam United Cosmos Organization during 6<sup>th</sup> to 11<sup>th</sup> January 2021. He has submitted an essay on “Quantum Field Theory” at the school.
- 3.Sayak Banerjee, a student of 4<sup>th</sup> semester (2021) has successfully completed a “Fundamentals of Maroscopic and Microscopic Thermodynamics” an online course organized by University of Colorado. (Feb-02-2021)
4. Sayak Banerjee, a student of 4<sup>th</sup> semester (2021) has successfully completed an online course titled “Pythonfor Data Science and AI” organized by IBM. (08.07.2020)
5. Sayak Banerjee, a student of 4<sup>th</sup> semester (2021) has successfully completed an online course titled“Building Arduino robots and devices” organized by Moscow Institute of Physics and Technology. (09.07.2020)
- 6.Sayak Banerjee, a student of 4<sup>th</sup> semester (2021) has successfully completed an online course titled“Python101 for Data Science” organized by Cognitive Class, IBM. (11.07.2020)
7. Sidhartha Chatterjee, a student of 4<sup>th</sup> semester (2021) has successfully completed an online course titled“Learning Physics Through Simple Experiments”, organized by IIT Kanpur.( April 2 to June 10, 2020)
8. Sidhartha Chatterjee, a student of 4<sup>th</sup> semester (2021) has successfully completed an online course titled “Classical Electromagnetism - 1 (Electrostatics)”, organized by IIT Kanpur.( August 15 to December 13, 2020 )
9. Sidhartha Chatterjee, a student of 4<sup>th</sup> semester (2021) has successfully participated in the online “NationalAnveshika Experimental Skill Test”, organized by National Anveshika Network of India.
10. Award for 3<sup>rd</sup> best oral presentation won by the students of second semester (2019-20 batch) incollaboration with Dept. of Biotechnology, IIT-Roorkee in the National online conference on Environment,Human Health and Sustainable Development Goals and World Environment Day 2020 Celebrationsorganized by Environment and Social Development Association (ESDA) along with Dr.Bhim RaoAmbedkar College, CSIR- NEERI, GRC-India, GD Goenka University Gurugram, Amity University Haryana and RML Avadh University Ayodhya
11. Ananya Biswas, a student of 6<sup>th</sup> Semester (2021) has attended in Krittika Summer ProjectsOrganised byKrittika, the Astronomy club of IIT Bombay on the Topic: Exoplanets during 17 May 2020 – 16 August2020.
12. Ananya Biswas, a student of 6<sup>th</sup> Semester (2021) has attendedin an Astrophysics workshoporganised byKrittika, the Astronomy club of IIT Bombay, in collaboration with Techfest, the Annual Science andTechnology festival of IIT Bombay, during 18 December 2020 – 20 December 2020.
13. Samik Dutta, a student of 6<sup>th</sup> semester (2021) has participated in the course “Advanced Course on Specialtheory of relativity” organised by Centre for Continuing Education, Indian Institute of Technology,Kanpur during January 26 to May 19, 2020
14. Sandeep Sharma, a student of 6<sup>th</sup> semester (2021) has participated in the “National Anveshika ExperimentalSkill Test” organised by Centre for Continuing Education, Indian Institute of Technology, Kanpur duringAugust 16 to August 19, 2020.
15. Sidhartha Chatterjee, a student of 4<sup>th</sup> semester (2021) has participated in “Spooky Quizzes, Cycle 2”organized by Pravega, IISc Bangalore and stood Third

## Annexure D

### Publication by Faculties Journals (SCOPUS indexed):

5. Das A, Basak P, Pramanik A, Majumder R, **Ghosh A**, Hazra S, Guria M, Bhattacharyya M, Banik SP (2020) Ribosylation induced structural changes in Bovine Serum Albumin: understanding high dietary sugar induced protein aggregation and amyloid formation, *Heliyon*, Volume 6, Issue 9, e05053.
2. Podder S.; **Ghosh A**. Ghosh T. (2021) Mutations in membrane fusion subunit of spike glycoprotein play crucial role in the recent outbreak of COVID-19. *J. Med Virol* 2021, 93:8790-2798.
3. **D Bhattacharya**, Dutta M, Mukhopadhyay M, Bhattacharyya M, Chowdhury S, Karmakar P (2020) The protective role of metformin in autophagic status in peripheral blood mononuclear cells of type 2 diabetic patients” *Cell Biology International* 44:1628-1644.
4. R Saha, M Mukhopadhyay, **D Bhattacharya** (2020) “Clinical and Pathological Correlation between SARS-CoV-2 Infection with Coexisting Health Conditions: A Review” Pre-print.org, 10.20944/preprints202012.0356.v1.
5. J Karmakar, P Nandy, S Das, **D Bhattacharya**, P Karmakar, Samaresh Bhattacharya (2021) “Utilization of Guanidine-Based Ancillary Ligands in Arene–Ruthenium Complexes for Selective Cytotoxicity”, *ACS Omega* 6(12), 8226–8238, 2021.
6. B Ghosh, **D Bhattacharya** and M Mukhopadhyay (2021) “Fabrication of natural polysaccharide based hydrogel with utility to entrap pollutants”, *J. Phys.: Conf. Ser.* **1797** 012060.
7. **Panda, S.** 2021 *Tigridiapavonia* (L.f.) Redoute (Iridaceae: Tigridieae) a Central American taxon naturalized in and around Jalapahar- Cantonment Forest of Darjeeling Himalaya, India. *Zoo’s Print Plantasia* 36 (2):
8. **Panda, S.** 2020. *Agapetes smithiana* Sleumer var. *smithiana* ----A Threatened plant on the verge of extinction. *Zoo’s Print* 35 (10): 9-11.
9. **Mukherjee, A.**, Makal, A. Visual and olfactory cues for mate recognition in male pumpkin beetle, *Aulacophora foveicollis*. *Int J Trop Insect Sci* 41, 725–735 (2021).
10. Karmakar, A., Mitra, S., **Mukherjee, A.** et al. (2019) Variations in Composition of Alkanes and Free Fatty Acids in *Aulacophora foveicollis* Lucas (Coleoptera: Chrysomelidae) on Exposure to Monocrotophos. *Proc Zool Soc* 72, 301–312.

### Books/Book chapters:

1. **Manna S**, Manna B. (2020) Advanced Laboratory Manual of Parasitology and Immunoparasitology. New Central Book Agency. ISBN no. 978-93-5255-148-4 .
2. S Banerjee, **B Maiti**, B Saha, Device independent key generation using decoy state, *Scopus-Indexed 3rd International Conference on Computational Intelligence, Security & Internet of Things (ICCISIoT 2020)*, National Institute of Technology Agartala, Tripura, on 29<sup>th</sup> – 30<sup>th</sup> December, 2020.
3. PS Banerjee, SN Mandal, D De, **B Maiti**, RL-sleep: Temperature adaptive sleep scheduling using reinforcement learning for sustainable connectivity in wireless sensor networks, *Sustainable Computing: Informatics and Systems*, vol. 26 (June 2020) pp. 100380.
4. PS Banerjee, SN Mandal, D De, **B Maiti**, MACE: Multiple Attributes Correlation based Entropy Measurement of Heterogeneous Wireless Sensor Networks, International Conference on Advanced Computing and Applications (ICACA 2021), Computer Society of India, Kolkata Section, on 27<sup>th</sup> – 28<sup>th</sup> March, 2021.

### Book chapters

1. **Banik SP**, Bhattacharyya M, Ghosh R, Majumder R (2020) Glycation-induced protein aggregation and cellular toxicity: an insight into the disease realm of high dietary sugar intake, In. Preuss HG, Bagchi D. Dietary Sugar, Salt and Fat in Human Health, Academic Press, pp 251-275
2. Ghosh R, Das A, Bandyopadhyay A, Majumder R, **Banik SP** (2020) Vanadium Toxicity Revisited: Striking the Right Balance between Potential New Generation Therapeutics and Adverse Side Effects, In Bagchi D, Bagchi M. Metal Toxicology Handbook, CRC Press pp 323-343.
3. Biorefinery Approach for Bioethanol Production, R Saha, **D Bhattacharya**, M Mukhopadhyay, Biorefinery Production Technologies for Chemicals and Energy, 313-333, John Wiley & Sons, Inc. 2020
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### Other publications including student publications

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11. **A. Mukherjee**, A. Sengupta, S. Shaw, S. Sarkar, D. Pal, U.K. Das Interrelation between Surface Wax Alkanes from Red Kidney Bean (*Phaseolus vulgaris* L.) Seeds and Adzuki Bean Weevil [*Callosobruchus chinensis* (F.)] (Coleoptera: Bruchidae) Article Id: LR-4420.
12. S Baidya, M Ghosh, V Jhungare, M Bhambri, SP Banik, **D Bhattacharya**, S Hazra, "Bacterial response to Carbapenems, the last human anti-microbial resort", on "Environment, Human Health and Sustainable Development Goals", held on 5<sup>th</sup>-6<sup>th</sup> June 2020, organised by Environment and Social Development Association (ESDA), Delhi Abstract book Pg No. 278.
13. S. Bhattacharya, A. Ghosh, R. K. Gazara, O. Saha, A. Mukherjee, S. Pal, M. Pal, S. Haider, Saugata Hazra and **S.P. Banik** "In Pursuit Of An Intermediate Host Of Sars-Cov2: The Ace2 (And Furin Cleavage) Trail" on Environment, Human Health and Sustainable Development Goals", held on 5<sup>th</sup>-6<sup>th</sup> June 2020, organised by Environment and Social Development Association (ESDA), Delhi Abstract book Pg No. 278.
14. **Sujit Kumar Bhowal**, **Subir C Dasgupta**, **Susanta R Karmakar**, Arnab Kar, Eerondyoti Chakrabarty, Monalisha Ghosh and Poulami Dey (2021) "Impact of Urea on monogastric. mammalian system: A short term study", Uttar Pradesh Journal of Zoology 42(1): 40-50.

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16. Saha K, Ghosh S, Gomes A, **Dasgupta SC**, Gomes A. (2021) Cobra venom neutralization by gold nano particle-2-hydroxy-4-methoxy benzoic acid. *Indian J Pharmacol* 53:73-5
17. **Som D.K.**, Laha P. and Mondal S (2021) Larvicidal effect of *Coffea arabica* L., *Camellia sinensis* (L.) Kuntz and *Punica granatum* L. on *Aedes albopictus* (Skuse), the vector of Dengue and Chikunguniya Uttar Pradesh *Journal of Zoology* 42(10): 10-18.

#### Annexure E

1. **Dr. Subhodip Samanta, Dr. Avishek Ghosh and Dr. Madhuvanti Chatterjee** participated in the “Molecular Testing for Genetic Disorders” organized by Centre for DNA Fingerprinting and Diagnostics, Hyderabad, 11<sup>th</sup> November to 15<sup>th</sup> November, 2019.
2. **Dr. Samudra Prosad Banik**, Department of Microbiology participated in a DBT STAR college sponsored one day workshop on “Bioinformatics for therapeutic interventions”, organized by Lady Brabourne College, Kolkata on 16<sup>th</sup> January, 2020.
3. **Dr. Rajarshi Ghosh** has been awarded the certificate on completion of online course on “HealthGIS: Geoinformatics for COVID19” which was conducted by Indian Institute of Remote Sensing (IIRS), ISRO Dehradun, during 15-06-2020 to 19-06-2020.
4. **Dr. Ajanta Mukherji** participated in an online workshop on "Mastering Virtual Classroom Teaching" from 16<sup>th</sup> June, 2020 to 18<sup>th</sup> June, 2020.
5. **Dr. Rajarshi Ghosh** has been awarded the certificate on completion of online course on ‘Dino101: Dinosaur Paleobiology’, authorized by University of Alberta and offered through Coursera on 28.06.2020.
6. Faculty members from the beneficiary Departments of Botany, Chemistry, Microbiology, Physics and Zoology received training on python programming and homology modeling using Pymol and coot softwares at the 3 day e-Workshop on “Molecular Visualization and Modeling using Python Programming”, 10<sup>th</sup> August, 2020 to 12<sup>th</sup> August, 2020

## Annexure F

1. 13<sup>th</sup> February, 2020: Organized **DBT-CTEP sponsored** one day Science popularization programme on Concept and Advances of Modern Biology and Biotechnology along with quiz for school students and poster competitions for UG and PG students. Invited speakers – Dr. Debashis Mitra, Prof. Maitree Bhattacharya, Dr. Tapan K. Adhya, Dr. Timir Baran Jha.
2. 24<sup>th</sup> February, 2020: Dept. of Zoology organized a lecture for students on “Analyzing the role of Autophagy in events leading to tumor cell migration and drug tolerance”. Invited speaker – Dr. Rajdeep Chowdhury
3. 28<sup>th</sup> February, 2020: Celebrated National Science Day through outreach activity: Lab visit by school students.
4. 27<sup>th</sup> June, 2020: Webinar on “CoViD-19 diagnosis: Prospects and Challenges” organized jointly by Departments of Microbiology and Zoology. Invited Speakers- Dr. Shubho Dasgupta and Dr. Sumon Poddar.
5. Co-hosted “National science series” held on 4<sup>th</sup>-6<sup>th</sup> August 2020, organised by Bhaskaracharya College of Applied Sciences, Delhi University
6. 10<sup>th</sup> August, 2020 to 12<sup>th</sup> August, 2020: Three day e-Workshop on “Molecular Visualization and Modeling using Python Programming” organized by Departments of Physics, Microbiology and Zoology. Invited speakers- Dr. Abhijit Kar Gupta and Dr. Saugata Hazra
7. 2<sup>nd</sup> September, 2020: Webinar on “How to live a healthy life amidst the Pandemic crisis” organized by all beneficiary Science Departments. Invited speakers- Dr. Shalini Sehgal and Dr. Susmita Das.
8. 11<sup>th</sup> September, 2020: National Webinar on “Role of Indigenous Traditional Knowledge and Herbal Drugs in combating against PANDEMIC COVID-19” organized by Department of Botany in collaboration with IQAC. Invited speakers – Dr. Tapan Kr. Mukherjee and Dr. Ramesh C. Srivastava
9. 12<sup>th</sup> September, 2020: National Webinar on “Herbs for healthcare – Exploring ethnopharmacology for better therapeutics” organized by Department of Botany in collaboration with IQAC. Invited speaker – Prof. Pulak K. Mukherjee.
10. 18<sup>th</sup> September, 2020: Webinar on “Regulations and Safety Measures in Food Industry” organized by Departments of Zoology and Microbiology. Invited Speakers- Dr. Paramita Bhattacharya, Mr. Anirvan Sen, Dr. Niloy Samaddar.
11. 23<sup>rd</sup> September 2020 to 24<sup>th</sup> September 2020: Two-day National webinar on “Some selected topics on DSE Physics course under CBCS, CU” organized by Departments of Physics in collaboration with IQAC.
12. 21<sup>st</sup> Nov, 2020: One-day international webinar on “Emerging Health Management with special reference to Covid-19 & Snake -bite In India” organised by Internal Quality Assurance Cell, Maulana Azad College in collaboration with Dr. Sites Chandra Lahiri Memorial Foundation. Invited speakers – Dr. Dibakar Chakrabarty, Dr. Manas Mandal.
13. 28<sup>th</sup> February, 2021: Celebration of National Science Day, “Science, Technology and Innovation in shaping Education” organized by all beneficiary Science Departments in collaboration with Microbiologists Society India (Invited speakers: Dr. Sudheer Sahu, Dr. Abhrajyoti Ghosh). In addition, an intercollege e-poster competition was organized on the theme of this year’s Science Day celebration.
14. 21<sup>st</sup> April, 2021: MANAV Human Atlas Initiative, How to read Scientific literature and Introduction to MANAV – The Human Atlas Initiative organized in collaboration with IISER, Pune. Invited speaker – Dr. Anupma Harshal W.



## Faculty members of beneficiary departments as resource persons

1. **Prof. Subir. C. Dasgupta**, A One day National Level Webinar on “DBT STAR CollegeScheme, Govt. Of India: Its importance and process of implementation”, organized by Silapathar Science College in collaboration with Zoological Society of Assam and Rainforest Research Institute, Jorhat on 18.08.2020.
2. **Prof. Subir. C. Dasgupta**, A DBT STAR College sponsored one day webinar on “COVID-19 and students well-being”, organized by Dept. Of Zoology, Jhargram RajCollege on 28.08.2020.
3. **Prof. Subir C. Dasgupta**, A value added course on “Introduction to Ophiology” offered by IQAC and Department of Zoology, Government General degree College, Singur held between 1<sup>st</sup> August 2020 and 31<sup>st</sup> August, 2020.
4. **Dr. Subhasis Panda** One Day National Webinar on “Indian Biodiversity: A treasure trove” organized by Dept. Of Botany, Sabang Mahavidyalaya in association with IQAC on 14<sup>th</sup> September, 2020.
5. **Dr. Samudra Prosad Banik** “Biotechnology: A tool for improving human welfare” on 12<sup>th</sup> March, 2021 organized by Jagadis Bose National Science Talent Search, Kolkata, supported by Dept. of Science and Technology and Biotechnology, Govt. of West Bengal.


## Annexure G

Department	*Objective (as stated in proposal)	% Achieved	Reasons for underachievement / If achieved, state in quantitative metrics
Botany Chemistry Physics Microbiology Zoology	Hands on Training	90	Covid 19 Outbreak ( 2)
	Outreach activity	95	Covid 19 Outbreak (2)
	Faculty participation in e workshops / training / symposium / Seminar / webinar / Industry Visit	100	0
	Publication by students and faculty members	100	0

For quantitative analysis you may fix five objective (max) each having 2 marks and accordingly calculate the matrix.

  
 Course Coordinator  
 (With Seal)  
 Co-ordinator  
 DBT-Star College Programme

Course Coordinator

  
 Principal  
 Maulana Azad College  
 Principal  
 Maulana Azad College  
 Kolkata  
 Govt. of West Bengal

Principal