Maulana Azad College of Arts, Science and Commerce,

Dr. Rafiq Zakaria Campus Post Box No. 27
Dr. Rafiq Zakaria Marg Rauza Bagh
Aurangabad - 431001(MH)

NAAC Reaccreditation 3rd Cycle

Metric 2.3.1

Criterion II

Teaching Learning & Evaluation

2.3.1 Student Centric Method

Experiential Learning

2017-18

Maulana Azad College of Arts, Science & Commerce,

Dr. RafiqZakaria Campus-I, Post Box No.27, Dr. RafiqZakariaMarg, RauzaBagh,
Aurangabad – 431001 Maharashtra
.: 0240-2381102, 2381668 | Web: https://maca.ac.in. | Fax: 0240-2390422 | Email: macprincipal@gmail.com

* Affiliated to Dr. BabasahebAmbedkarMarathwada University, Aurangabad.
* Recognized Minority Institute
* UGC – 2(f) & 12 (B) Status
* NAAC Re-accredited (Grade A) in two consecutive cycles.
* Unnat Bharat Abhiyan
* Grade A in Academic and Administrative Audit (Dr. BAMU)
* District Green Champion Award (MGNCRE)
* UGC's Status "COLLEGE WITH POTENTIAL FOR EXCELLENCE"

DECLARATION

This is to declare that the information, reports, true copies of the supporting documents, numerical data etc. submitted/presented in this file is verified by Internal Quality Assurance Cell (IQAC) and is correct as per the records. This declaration is for the purpose of NAAC accreditation of HEI for 3rd Cycle period 2017-18 to 2021-22. All reports are class III digitally signed.

(Dr. Mazahar Ahmed Farooqui)
Principal

Principal
Maulana Azad College of Arts,
Science & Commerce,
Rauza Baugh, Aurangabad.

Maulana Azad College of Arts, Science and Commerce, Aurangabad

Dr. Rafiq Zakaria Campus

Field/ Industrial Visits/Project

Department of Zoology

Department of Zoology visited to Wild Life Sanctuary, Gautala in 2017-18

Dr. Rafiq Zakaria Campus
Maulana Azad College of Arts, Science and Commerce, Aurangabad

Report of activity for submission to IQAC

Dept of Zoology

Name of the Event/ Activity :- Excursion Tour

Date:- 13-9-2017 **Time:-** 8.00am

Place: Gautala Wild Life Sanctuary, Kannad **Number of beneficiaries:-** 37

Type of activity:- Curricular

Details of the Programme:-

1. For study tour we have selected Gautala Wild Life Sanctuary, Kannad
2. Dept. of Zoology was conducted excursion tour on 13-9-2017 at 8.00 a.m
3. It is well known place for biodiversity of wild animals.
4. B.Sc. students observed various types of animals like Grey langur, Wild dog, different types of birds etc.
5. All students and staff members returned to Aurangabad by evening at 8.00 pm.

Goals and objectives:-

1. Preservation and restoration of natural habitats of organism through controlled exploitation.
2. To protect and maintain long term forest and soil productivity.
3. Maintenance of rare species in protected areas such as national park and sanctuaries etc.
4. Educating the public about the need to protect and preserve the environment as a long range goal for the welfare of future generations.

Relevance and out comes:-

1. Organize field trip with experts and encourage volunteers.
2. Introduces courses on wild life conservation.
3. Raise awareness and encourage discussion with the students.
4. Conduct Community awareness programme on Wild life protection.
5. Slogan writing and pledge taking for Save "wild life"

Dr.J.D Shaikh
H.O.D. Zoology Dept.

Dr. Aditi Bhattacharya
IQAC Coordinator

COORDINATOR
Internal Quality Assurance Cell
Maulana Azad College of Arts,
Science & Commerce, Aurangabad.

Dr. Mazahar Ahmad Farooqui
Principal

Principal
Maulana Azad College
Aurangabad

DEPARTMENT OF ZOOLOGY M.A.C. AURANGABAD

Maulana Azad College of Arts, Science & Commerce, Aurangabad

Dept. of Zoology

Excursion Tour

Date 13 Sept 2017

B.Sc. Students observed fauna & Flora at Gautala Wild Life Sanctuary, Gautala, Kannad

DEPARTMENT OF ZOOLOGY ★ M.A.C. AURANGABAD

Dt 11/9/2017

Notice

All student of Bsc. Fy, S.y & T.y are hereby informed that our dept is going to organize one day excursion tour at Jantala wild life sanctuary, Jantala, Kannad on 13/9/2017 at 8.00 AM.

All students should present for the same.

DEPARMENT OF ZOOLOGY M.A.C. AURANGABAD

Principal
Maulana Azad College
Aurangabad

DEPARMENT OF ZOOLOGY M.A.C. AURANGABAD

Sr. No.	Name of the Student	Roll No.	Signature.
26	Atiqur Rahman.	104	Atiq.
27	MD. Shaibaz	226	Shaibaz
28	Sk. Shamnawaz	527	Shaz
29	Shazeb Zaki	526	Shazeb
30	Aqib Faraz	505	Aqib.
31			
32	ABUZAR KHAN	520	Abuzar
33	Sk Faizan	309	Faizan
34	Idaseem Qureshi	507	Qureshi.
35	Pathan Attab Raiya.	312	Raiya
36	Ayesha Tabassum.	605	Ayesha.
37	Khan Noor Afsha	545	Afsha
38	Saima Mahnish	547	Saima
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Faculty Accompanying:

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DEPARTMENT OF ZOOLOGY
M.A.C.
AURANGABAD

Maulana Azad College of Arts, Science and Commerce,

Dr. Rafiq Zakaria Campus, Rauza Bagh, Aurangabad

Department of Zoology

B.Sc. III year

STUDENT'S PROJECT WORK

(Pond Ecosystem /Visit toSalim Ali lake

Academic Year: 2017-2018 [09-2-2018]

Sr. No.	Name of Student	Name of Projects
1)	Afu-Obaidah	Pond Ecosystem
2)	Asma Kausar	Pond Ecosystem
3)	Farooqui Natila	Pond Ecosystem
4)	Humera Parveen	Pond Ecosystem
5)	Jagida Rayyan	Pond Ecosystem
6)	Khan ALiya	Pond Ecosystem
7)	Khan Ajuman	Pond Ecosystem
8)	Zubiya khan	Pond Ecosystem
9)	Nabeela Nathani	Pond Ecosystem
10)	Amir Khan	Pond Ecosystem
11)	Pathan Reshma	Pond Ecosystem
12)	Azka Mariya.	Pond Ecosystem

DEPARTMENT OF ZOOLOGY M.A.C. AURANGABAD

Department of Botany

Excursion to "Anand Sagar" Shegaon, Dist. Bhuldana

Date: **07th February 2018**

Venue: - Shegaon, Dist. Bhuldana

No. of Beneficiary: 35 **Type of Beneficiary**: Students and Teachers

Goals and Objectives: To explore amazing places of Maharashtra.

Highlights of the Program:

- To get some break from the routine studies and practical life students and staff visited small town in Khamgaon tehsil famous for Samadhi of Saint Shree Gajanan Maharaj in Shegaon.
- All Students and staff members reported at 05:30 am at Dr. Rafiq Zakaria Campus, (Parking Site) and departed to excursion at 06:30 am.
- Reached to destination at around 11:00 am.
- After having some refreshment beneficiaries along with teachers proceeded towards **"Anand Sagar"**.
- Shegaon has a tourist attraction called Anand Sagar. It surrounds the big artificial lake. It has a meditation centre, an aquarium, temples, playgrounds, lush green lawns and open theatre where the light and music show is conducted for the entertainment.
- Students and staff enjoyed from the peaceful and energetic atmosphere.
- Departure to Aurangabad started at 5:00 pm and reached destination at 09:30 pm.

Relevance and outcome:
Students were made aware and explore amazing places of Maharashtra.

Feedback analysis (Comments/suggestions):
Students were very happy and eager to get more such opportunities of excursion .

Programme co-coordinator: **Dr. Sadat M. Quazi**.

Organizing Committee: - Dr. Sadat Qauzi, Dr. Rafiuddin Naser, Dr. Ashfaque Khan.

Excursion to **"Anand Sagar"** Shegaon, Dist. Bhuldana, 7th February 2018




Attendance Report

Dr. Rafiq Zakaria Campus
Maulana Azad College of Arts, Science and Commerce

Department of Botany

Excursion Attendance **13th September 2017**

Sr. No.	Name of the Student	Roll No.	Signature
1	Yusra Naaz	221	
2	Bushra shafeen		
3	Rahat Khan	540	
4	Zeba Kausar	541	
5	Siddiqui Javeriya	529	
6	Shaikh Rohit	518	
7	Shaikh Afreen	530	
8	Siddiqui Tahzeeb Beeba	531	
9	Arwa Fatema	523	
10	Patni Raisa	563	
11	Arshma Naaz	562	
12	Alfiya Shaikh	503	
13	Nikhat Sharmin	572	
14	Namra Tazeen	570	
15	Afsha Anjum	501	
16	Sk. Sumaiya	506	
17	KHAN SADIYA	318	
18	BAIG NASMEEN (Zoo)	203	
19	Shaikh Heba	564	
20	Tanzeela Fiadous	517	
21	Shaik Samreen	567	
22	Khan Nagma	516	
23	Shaikh kulsum	211	
24	Shaikh Farha Aram	555	
25	Umais Khan	510	

Faculty Accompanying:

1.

Sr. No.	Name of the Student	Roll No.	Signature.
26	Atiqu Rahman.	104	Atiq.
27	MD. Shaibaz	226	
28	Sk. Shahnawaz	527	
29	Shazeb Zaki	526	Shazeb
30	Aqib Faraz	505	
31			
32	ABUZAR KHAN	520	
33	Sk Faizan - 200	309	Faizan
34	Idaseem Qureshi	507	
35	Rahman Allah Raiya.	312	
36	Ayesha Jabassum	605	
37	Khan Noor Afsha	545	
38	Saima Mahish	547	
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37

7219359

Faculty Accompanying:

1.

2.

3.

Department of Microbiology

Dr. Rafiq Zakaria Campus

Maulana Azad College of Arts, Science & Commerce

Post Box No. 27, Dr.Rafiq Zakaria Marg, Rauza Bagh, Aurangabad-431 001 Maharashtra.

Tel.: 0240-2381102 | Web: http://maca.ac.in | Fax: 0240-2390422 | Email: macprincipal@gmail.com

MINORITY INSTITUTE

NAAC Re Accredited Grade 'A' | UGC's Status of "COLLEGE WITH POTENTIAL FOR EXCELLENCE" | NATIONAL INSTITUTIONAL RANKING FRAMEWORK - 151-200

Ref. No. MAC: 12/2018/18/1754

To
Medical officer,
Lokmanya Blood bank ,
Adalat road ,Aurangabad.

22-02-2018

Sub : Letter of thanks to you and your staff for the briefing on the working of a blood bank.

Dear Sir,

It gives me great pleasure to congratulate you and your staff members for briefing our students on the working of a blood bank. The staff were extremely cooperative and discussed at length, the importance of blood donation , processing of blood components ,blood testing etc. Please keep up the good work and wish you all the best for your future pursuits.

Thanking you,

Yours sincerely

(Dr.Mohd.Razaullah Khan)
(I/C Principal)

Received
22.02.18
Signatory Authority
LOKMANYA BLOOD BANK
Gopinath Chambers
Behind Jaidev Travels
Adalat Road, Aurangabad.

Dr. Rafiq Zakaria Campus

Maulana Azad College of Arts, Science & Commerce

Post Box No. 27, Dr.Rafiq Zakaria Marg, Rauza Bagh, Aurangabad-431 001 Maharashtra.

Tel : 0240-2381102 | Web: http://maca.ac.in | Fax: 0240-2390422 | Email: macprincipal@gmail.com

MINORITY INSTITUTE

Accredited Grade 'A' | UGC's Status of "COLLEGE WITH POTENTIAL FOR EXCELLENCE" | NATIONAL INSTITUTIONAL RANKING FRAMEWORK - 151-200

MAC: 12/219/2018/1254

21-02-2018

To
Medical officer,
Lokmanya Blood bank ,
Adalat road ,Aurangabad.

Sub : Request for educational visit to the different sections of the blood bank (B.Sc I,II and III yr students)

Respected Sir,

This is to state that the students of the Dept. of Microbiology , Maulana Azad College of Arts, Science and commerce are interested in visiting the different sections of the blood bank as part of study tour in their sylabii. Around 50 students accompanied by teachers will attend the educational tour. It will be a great learning experience for them to have a look at the facilities available at your disposition.

I thus request you to kindly permit the visit and give our students a much needed insight into the working of the blood bank.

Thanking you,

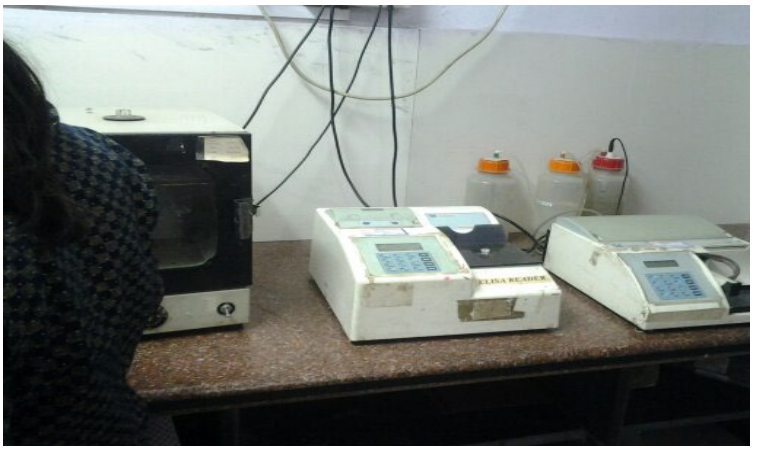
Yours sincerely

(Dr.Mohd. Razaullah Khan)
(I/C Principal)

Received
22.02.18

Signature of Authority
LOKMANYA BLOOD BANK
Adalat Road, Aurangabad.

Glimpses of Blood Bank visit



NAD451391

DR. RAFIQ ZAKARIA CAMPUS

MAULANA AZAD COLLEGE OF ARTS, SCIENCE AND COMMERCE

AURANGABAD.

DEPARTMENT OF MICROBIOLOGY

CERTIFICATE

This is to certify that Komal Sanjay Dabhade, a student of B.Sc IInd year Microbiology of Maulana Azad College of Arts, Science and Commerce, Aurangabad. has attended the study tour on "22-02-2018" at **"LOKMANYA BLOOD BANK" ADALAT ROAD , A'BAD ,**

Signature of the supervising authority

Lokmanya Blood bank , A'bad.

DEPARTMENT OF MICROBIOLOGY M.A.C. ARMED

HEAD, DEPT OF MICROBIOLOGY MAULANA AZAD COLLEGE AURANGABAD

Signature of the Head of Microbiology

Maulana Azad College, A'bad

DEPARTMENT OF MICROBIOLOGY M.A.C. ARMED

Signature of the supervising teacher

Maulana Azad College, A'bad

Dr. Rafiq Zakaria Campus

Maulana Azad College Arts,Commerce and Science

Aurangabad

TOUR REPORT

"Lokmanya Blood Bank" , Adalat Road , Aurangabad

22nd Feb 2018

Title of the presentation : Visit to "Lokmanya Blood Bank"

Address of the place of visit : lokmanya blood bank , Near Dena Bank Adalat Road, Aurangabad.

Names of the resource person : Mr. Ayub Shaikh.

Objectives :
- To create awarenes for blood banking procedures
- To develop entrepreneurship, to know the qualification required ie DMLT
- To learn how a single unit includes typing of blood for transfusion & testing it for infectious diseases.

Introduction :

1) objective of the visit was to create awareness about Blood banking procedures.

2) During our visit we were informed about the donar selection criteria, donar screening procedure, transmissible infectious disease testing techniques Blood grouping techniques component seperation.

3) Lot of information regarding different types of labwities was provided.

4) The blood donar selection criteria include
- → Donar should be bet^{n} 18-65 year & over 45 kgs.
- → Hb not less than 12 g/dL
- → No clinical malaria in past 1 month.
- → No major operation in last 6 months.

5)
- → Blood banking includes typing the blood for transfusion & testing for infectious diseases

6) Various components so they can be used most effectively according to the need of patients.

Details of deliberations/ demonstrations: _____

Room/Lab : Cold Store

1) The temperature of whole blood & red cells components kept at 2°C to 10°C

2) Fresh frozen plasma (FFP) is plasma that has been seperated from a unit of whole blood with 6 to 8 hrs.

3) The whole blood & RBC's are always kept or stored at temperature betn +2° to 6°C

4) The anticoagulant or preservative soln contain nutrient for blood durning storage & stops the blood from clotting

5) The unit is discarded if its been out of refrigerators more than 30 minutes or the seal in broken.

6)

7)

8)

9)

10)

Details of deliberations/ demonstrations: _____

Room/Lab: Component preperation Room

1) After blood collection, components are prepared within 5-8 hours.

2) In refrigerated centrifuge the programme is seen with mainly two spins.

3) The whole blood which is a mixture of cells can be seperated in different.

4) Blood components namely packed red blood cells concentrate

5) platelet concentrate, fresh frozen plasma (FFP).

6) Each blood component is used for a different indication thus the component seperation key maximises the ability of one whole blood unit.

7)

Outcome of the study tour :

1) We learned how a single unit of whole blood can be seperated in 3 different component such as plasma, platelet & conc. RBC & can save 3 lives.

2) This visit created awareness for blood banking procedure about the donar selection criteria, donar screening procedures, transmissible infectious disease testing techniques & the cross matching technique

3)

The students asked their queries to the guides & they answered all of them & happy after this. Visit & we had got ample knowledge &

4) the guidelines given by them are very important for our future aspects.

5)

Signature of the student : Ahmed

Year : 2018

Dr. Rafiq Zakaria Campus

Maulana Azad College Arts,Commerce and Science

Aurangabad

Dept. Microbilogy

B.Sc. II Year

2017-18

Attendance list for tom **Date : 22/3/2018**

Sr.no.	Roll no.	Students Name	Sign.
1	201	Dabhade Komal Sanjay	
2	202	Nabeela Taheseen Mohd Ateequr Rehman	
3	203	Baig nasmeen Sarvar Baig	
4	204	Mundhe Suraj Yeshwantrao	
5	205	Syeda Anam Tazeen Syed Minhajul haque Khateeb	
6	206	Shaikh Samrin Fatema Asim Zafer	
7	207	Hashmi Syeda Humaira Syed Muzammil Ahmed	
8	208	Farooqui Mohammed yaqub Aquieel Ahmed	
9	209	Qazi Nagma Begum Qazi Moinuddin	
10	210	Mariya Fatema Badarul Islam	
11	211	Shaikh Kulsum Shaikh Rais	
12	212	Qutubuddin Gulam Ali	
13	213	Shaikh Madiha Ibtesam Mohd Safi	
14	214	Sayed Tabassum Sayed Kayyum	
15	215	Urusa Khan Hamed Hussain Khan	
16	216	Arifuddin Mondal Abdur Rob Mondal	
17	217	Taherim Bano Sk Ibrahim	
18	218	Qazi Almas Iqbal	
19	219	Quazi Ammara Firdous Mohd kauseruddin	
20	220	Arjumand bano Shaikh Iqbal Ali	
21	221	Yusra Naaz Shaikh Zuber	
22	222	Iqura Anjum Shaikh Rafeeque Ahmed	
23	223	Shaikh Naoshaba Sarosh Shailkh Siddiq Mohinuddin	
24	224	Shaikh Maharukh Sahar Shaikh Siddiq Mohinuddin	
25	225	Shaikh Momina Bilqis Sk Md Badiuddin	

26	226	Shaikh Md Shaibaz Md Quadir	
27	227	Siddiqui Maheen Ara Jameel Ahmed	
28	228	Syeda Ummaima Taha Md jaffar Ali	
29	229	Shaikh Rahat Shaikh Afsar	
30	230	Sana Firdous Shaikh Mushtaque Ahmed	
31	231	Maryam Sabahat Mohd Zahed	
32	235	Bushra shafeen	
33	232	Farheen Afreen	
34	234	Pooja Singh	
35	233	Sk. Maliha	
36	236	Shaikh Nusrat	

Signature of the HOD.

(Dept of Microbiology)

Maulana Azad College

Aurangabad

Signature of the supervising teacher

Maulana Azad College, A'bad

Dr. Rafiq Zakaria Campus

Maulana Azad College of Arts, Commerce and Science

Auarangabad

Department : Microbiology

Tentative List of students (B.Sc III yr) for Mol.Bio. workshop at Government college of Arts and Science College, Aurangabad

Experiential learning :-

Sr. no.	Students Name	Roll no.
1	Pisu Vaidehi Shripad	228
2	Kazi Ammara	208
3	Shaikh Durvesh	221
4	Shaikh Naveed	237
5	Shaikh Qurratul - Ain	233
6	Shaikh Arshiya Anjum	220
7	Javeria ~~Anjum~~ Firdous	213
8	Ammara Tazeen	202
9	~~SK. Afshin Irfan~~ Sk. Afreen Fatema	~~205~~ 201
10	MUHAMMAD AMRULLAH.	209
11.	MOHD INZEMAM	215
12.	SIDDIQUI MD. ARSHIYAN	210

Submitted by:

(Dr. A. V. Bhattacharyya)
HOD Microbiology
Maulana Azad College
Aurangabad

Aurangabad
10/2/2018

(Ms. S. S. Farooqui)
Assistant Professor, Microbiology
CASCA

HEAD, DEPT. OF MICROBIOLOGY MAULANA AZAD COLLEGE AURANGABAD

Marathwada Shikshan Prasarak Mandal's

SHIVCHHATRAPATI COLLEGE

CIDCO, N-3, Aurangabad (Maharashtra) - 431003

Telephone : Off. : 0240 2474872, Fax : 0240 2480150

NAAC 'B' Grade, Permanent Affiliation,

U.G.C. 2(f) & 12 (B) Recognition, ISO 9001-2008 Certification

V. ASHTEKAR
M.Sc., DHE, PhD
PRINCIPAL
No. 9422743944

Establishment Year : 29th June 2001
M.S.P. Mandal Registration : F-47 Dt.-17-9-1964
Website : www.shivchhatrapaticollege.org
email : shivchhatrapaticollege@gmail.com

Ref No. SCCA/ 2017-18/ 467

Date : 22/9/17

To,

Dr. Aditi Bhattacharya,

HOD, Department of Microbiology,

Maulana Azad College,

Aurangabad.

Subject: Appreciation Letter

I would like to take this opportunity to express my sincere thanks to you and students of Maulana Azad College, Department of Microbiology for their active involvement in **Intercollegiate One Month Certificate Course On "*PLANT TISSUE CULTURE : A TOOL IN BIOTECHNOLOGY*"** at Shivchhatrapati College organized by Department of Biotechnology on 1st September to 28th September 2017.

Thank you again for your contribution to succeed the programme. Looking forward for your cooperation in future for positive sporting experience.

Dear Madam, Thanks a lot to you all for conducting this excellent add on course in PTC. Well done, keep it up. (HOD)

Yours Sincerely,

(Dr.P.V. Ashtekar)

(Principal)

Dr. Rafiq Zakaria Campus

Maulana Azad College Arts,Commerce and Science

Aurangabad

B.Sc IIIrd Year

Shiv Chatrapati College, Aurangabad.

ONE MONTH PTC WORKSHOP (4p.m to 5p.m).

Sr. no.	Roll no.	Students Name	Mob. No.
1	219	Syed Irbaz Ali	9175509834
2	210	Siddiqui Md. Arshiyan	7038076472
3	215	Mohd Inzemam	7743965413
4	211	Shoeb Patel	8329539840
5	208	Ammara Kazi	9028895641
6	207	Shaikh Naveed	9922122488
7	218	Shaikh parvez	8983709987
8	233	Sk. Qurrat-ul-ain	8668290067
9	213	Javeria Firdous	8055745606
10	214	Maria Siddiqua	9325201877
11	205	Sk. Afshin	9922540181
12	228	Pisu Vaidehi Shripad	7218721931
13	235	Dipali Tukaram Lokhande	9860469452
14	227	Sayali Kamalshil Dandge	9175386608
15	224	Shaikh Almas Raza	8830490146

Experential learning.

HEAD, DEPT. OF BIOTECHNOLOGY MAULANA AZAD COLLEGE AURANGABAD

MSP Mandal's

Shivchhatrapati College, Aurangabad

Department of Biotechnology

INTERCOLLEGIATE ONE MONTH CERTIFICATE COURSE ON "*PLANT TISSUE CULTURE: A TOOL IN BIOTECHNOLOGY*"

Schedule

Date:- 1 September 2017	**Session I**
9:00am to 9:30am	Registration
9:30am to 10:am	Inaugural Session
10:00am to 11:00 am	Dr. Narayan Pandhure
	Department of Botany, Dr. BAMU
Date:- 4 September 2017	**Session II**
03:45pm to 04:00pm	Overview of Certificate course
	Miss. Kalyani Pawar
04pm to 04:45pm	Miss. Sandhya Yadav,
	Shivchhatrapati College , Aurangabad.
Date:- 8 September 2017	**Session III**
03:45pm to 04:45pm	Miss. Nupur Boramanikar,
	Shivchhatrapati College, Aurangabad.
Date:- 9 September 2017	**Session IV**
03:45pm to 04:45pm	Miss. Kalyani Pawar
	Shivchhatrapati College, Aurangabad.
Date:- 15 September 2017	**Session V**
03:45pm to 04:45pm	Practical

Date:- 16 September 2017	
03:45pm to 04:45pm	Practical
Date:- 22 September 2017	**Session VI**
03:45pm to 04:45pm	Mrs. Ashwini Pujari Shivchhatrapati College, Aurangabad.
Date:- 23 September 2017	**Session VII**
03:45pm to 04:45pm	Mrs. Ashwini Pujari, Shivchhatrapati College, Aurangabad.
Date:- 28 September 2017	**Session VIII**
03:45 to 04:45	Result Discussion & Valedictory Event

MSP Mandal's

Shivchhatrapati College, Aurangabad

Department of Biotechnology

INTERCOLLEGIATE ONE MONTH CERTIFICATE COURSE

ON

"PLANT TISSUE CULTURE: A TOOL IN BIOTECHNOLOGY"

STUDY MATERIAL

Study Material:-

Plant Tissue Culture Media: Types, Constituents, Preparation

Basically, the plant tissue culture media should contain the same nutrients as required by the whole plant. It may be noted that plants in nature can synthesize their own food material. However, plants growing in vitro are mainly heterotrophic i.e. they cannot synthesize their own food. Culture media are largely responsible for the in vitro growth and morphogenesis of plant tissues. The success of the plant tissue culture depends on the choice of the nutrient medium. In fact, the cells of most plant cells can be grown in culture media.

Composition of Media:

The composition of the culture media is primarily dependent on two parameters: The media used may be solid (solid medium) or liquid (liquid medium) in nature. The selection of solid or liquid medium is dependent on the better response of a culture.

Types of Media :- The composition of the most commonly used tissue culture media is given and briefly described below.

- **White's medium** (Plant culture (High acid conc.)
- **MS medium**
- **B5 medium**
- **N6 medium**
- **Nitsch's medium**

Expression of concentrations in media:

The concentrations of inorganic and organic constituents in culture media are usually expressed as mass values (mg/l or ppm or mg l^{-1}). However, as per the recommendations of the International Association of Plant Physiology, the concentrations of macronutrients should be expressed as mmol/l^{-} and micronutrients as µmol/l^{-}.

Constituents of Media:

Many elements are needed for plant nutrition and their physiological functions. Thus, these elements have to be supplied in the culture medium to support adequate growth of cultures in vitro. A selected list of the elements and their functions in plants is given in Table 43.2.

The culture media usually contain the following constituents:

- Inorganic nutrients (Macro: N, P, K, Ca, Mg, S; Fe, Mn, Zn, Co. Cl in form of salts for eg. NH_4Cl)
- Carbon and energy sources
- Organic supplements
- Growth regulators
- Solidifying agents
- pH of medium

Inorganic Nutrients:

The inorganic nutrients consist of macronutrients (concentration >0.5 mmol/l) and micronutrients (concentration <0.5 mmol/l). A wide range of mineral salts (elements) supply the macro- and micronutrients. The inorganic salts in water undergo dissociation and ionization. Consequently, one type of ion may be contributed by more than one salt. For instance, in MS medium, K^+ ions are contributed by KNO_3 and KH_2PO_4 while NO_3^- ions come from KNO_3 and NH_4NO_3.

Macronutrient elements:

The six elements namely nitrogen, phosphorus, potassium, calcium, magnesium and sulfur are the essential macronutrients for tissue culture. The ideal concentration of nitrogen and potassium is around 25 mmol l^{-1} while for calcium, phosphorus, sulfur and magnesium, it is in the range of 1-3 mmol l^-. For the supply of nitrogen in the medium, nitrates and ammonium salts are together used.

Micronutrients: (Trace Elements)

Although their requirement is in minute quantities, micronutrients are essential for plant cells and tissues. These include iron, manganese, zinc, boron, copper and molybdenum. Among the microelements, iron requirement is very critical. Chelated forms of iron and copper are commonly used in culture media.

Carbon and Energy Sources: (Sucrose / Glucose . 2-3%)

Plant cells and tissues in the culture medium are heterotrophic and therefore, are dependent on the external carbon for energy. Among the energy sources, sucrose is the most preferred. During the course of sterilization (by autoclaving) of the medium, sucrose gets hydrolyzed to glucose and fructose. The plant cells in culture first utilize glucose and then fructose. In fact, glucose or fructose can be directly used in the culture media. It may be noted that for energy supply, glucose is as efficient as sucrose while fructose is less efficient.

It is a common observation that cultures grow better on a medium with autoclaved sucrose than on a medium with filter-sterilized sucrose. This clearly indicates that the hydrolyzed products of sucrose (particularly glucose) are efficient sources of energy. Direct use of fructose in the medium subjected to autoclaving, is found to be detrimental to the growth of plant cells. Besides sucrose and glucose, other carbohydrates such as lactose, maltose, galactose, raffinose, and cellobiose have been used in culture media but with a very limited success.

Organic Supplements:

The organic supplements include vitamins, amino acids, organic acids, organic extracts, activated charcoal and antibiotics.

Vitamins:

Plant cells and tissues in culture (like the natural plants) are capable of synthesizing vitamins but in suboptimal quantities, inadequate to support growth. Therefore the medium should be

Agar - 0.8 to 1 % — Soft agar.

Sterilisation. Autoclave - 110°C - 10 min.

supplemented with vitamins to achieve good growth of cells. The vitamins added to the media include thiamine, riboflavin, niacin, pyridoxine, folic acid, pantothenic acid, biotin, ascorbic acid, myoinositol, Para amino benzoic acid and vitamin E.

Amino acids: Glycine (Most common)

Although the cultured plant cells can synthesize amino acids to a certain extent, media supplemented with amino acids stimulate cell growth and help in establishment of cells lines. Further, organic nitrogen (in the form of amino acids such as L-glutamine, L-asparagine, L-arginine, L-cysteine) is more readily taken up than inorganic nitrogen by the plant cells.

Activated charcoal:

Supplementation of the medium with activated charcoal stimulates the growth and differentiation of certain plant cells (carrot, tomato, orchids). Some toxic/inhibitory compounds (e.g. phenols) produced by cultured plants are removed (by adsorption) by activated charcoal, and this facilitates efficient cell growth in cultures. Addition of activated charcoal to certain cultures (tobacco, soybean) is found to be inhibitory, probably due to adsorption of growth stimulants such as phytohormones.

Antibiotics:

→ Nistatin - Antifungal agent.

It is sometimes necessary to add antibiotics to the medium to prevent the growth of microorganisms. For this purpose, low concentrations of streptomycin or kanamycin are used. As far as possible, addition of antibiotics to the medium is avoided as they have an inhibitory influence on the cell growth.

Gelic agent: - Agarose: Galactose + 3,4 Galacto pyras
Gelrite - Polysaccharide isolated from Pseudomonas aeruginae.

PLANT GROWTH HORMONES

Plant hormones also known as phytohormones are chemicals that regulate plant growth. These are the signal molecules that are required in low concentration. The term phytohormone was coined by Thimann in 1948. Hormones regulate cellular processes of the plant and also determine formation of steam, leaves, roots, flowering, shedding of leaves, ripening of fruits. Hormones are vital to plant growth so they are also known as growth regulators or growth factors. Generally they are needed in micromole per liter values. The most commonly used growth hormones are auxins, cytokinins, gibberllins, ethylene and abscisic acid.

Auxins:

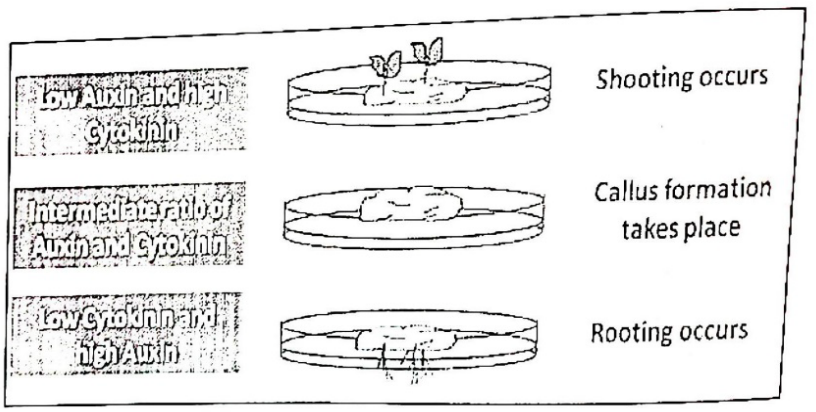
It is the first plant hormone to be discovered. In tissue culture auxins have been used for cell division and root differentiation. Auxins commonly used in tissue culture are- indol-3-acetic acid (IAA), indol-3-butyric acid (IBA), naphthalene acetic acid (NAA), dichlorophenoxyacetic acid (2,4-D) and tricholorophenoxyacetic acid (2,4,5-T). IBA and IAA are widely used for rooting

and, in interaction with cytokinin, for shoot proliferation. 2,4-D and 2.4,5-T are very effective induction and growth of callus. Auxins are usually dissolved in either ethanol or NaOH.

Cytokinins:

Cytokinins are concerned with cell division, shoot differentiation, apical dominance etc. In tissue culture media cytokinins are mainly incorporated for cell division and differentiation of adventitious shoots from callus organs. These are also used for shoot proliferation. Zeatin was first naturally discovered cytokinin and kinetin (furfuralamino purine) was first synthetic cytokinin. Along with these two most commonly used cytokinins are benzylamino purine (BAP), isopentyl-adenine (2-ip), thidiazuron (TDZ). Cytokinins are generally dissolved in dilute HCl or NaOH.

The concentration of auxin and cytokinin in tissue culture media has effect on growth of plant in-vitro.



Gibberllins:

These were firstly discovered in fungus *Gibberella fujikuroi*. There are over 20 known gibberellins, of which, GA_3 is most commonly used. Compared to auxins and cytokinins, gibberellins are used very rarely. They stimulate normal development of plantlets from in-vitro formed adventive embryos. GA_3 is readily soluble in cold water upto 1000 mg/liter.

Ethylene:

All kinds of plant tissue cultures produce ethylene, and the rate of production increases under stress condition. Ethylene can also be abiologically when organic constituents of the medium are subjected to heat, oxidation, sunlight or ionizing radiations. The effect of ethylene may be promontory or inhibitory on the plant tissue cultures.

Abscisic acid:

Abscisic acid which is also known as ABA, is most often required for normal growth and development of somatic embryos and only in its presence do they resemble zygotic embryos.

Micropropagation:-

Micropropagation has a number of advantages over traditional plant propagation techniques:

The main advantage of micropropagation is the production of many plants that are clones of each other. Micropropagation can be used to produce disease-free plants. It can have an extraordinarily high fecundity rate, producing thousands of propagules while conventional techniques might only produce a fraction of this number. A greater number of plants can be produced per square meter and the propagules can be stored longer and in a smaller area. Multiplication of genetically identical copies of a cultivar by asexual reproduction is called clonal propagation. The in vivo clonal propagation is often difficult, expensive and even unsuccessful. Tissue culture method offers an alternative way of clonal propagation which is popularly known as micro-propagation.

Stages of Micropropagation:-

Stage 0 — Explant Selection:

Before initiation of micro-propagation, selection of suitable mother plant is crucial in the whole exercise of propagation. Generally, disease free mother explant is selected for the micro-propagation to reduce contamination of cultures. Certain growth parameters of mother plant can be improved by pretreatment of mother explant before initiation of cultures.

Stage I — Establishment of Aseptic Culture:

Micro-propagation begins with successful establishment of cultures of selected plant material. The initial steps of micro-propagation are generally associated with several hurdles such as rate of contamination and phenolic exudation. Plant tissues are commonly associated with bacteria and fungus.

Stage II — Multiplication of shoots:

The main objective of the stage II is the multiplication of organs like shoot and increasing numbers considerably. They are able to give rise to new individual plant.

Multiplication of shoots through tissue culture involves four routinely used methods like

(a) Callus mediated multiplication

(b) Adventitious shoots mediated multiplication

(c) By apical or axillary shoots

(d) Direct or indirect embryogenesis.

Stage III — In Vitro Rooting:

Shoots or plantlets obtained during stage II are very small and do not contain roots enable to grow in soil, even fails to utilize soil nutrients. Therefore, adequate steps are taken in stage III to grow individual plantlets that can carry out photosynthesis and survive without external supply of carbohydrate. Therefore, in vitro grown shoots must be transferred to a rooting media. There is a clear distinction between rooting media from shooting media. In vitro rooting can be accomplished by adding auxins to the culture media.

Stage IV — Transplantation or Hardening:

Once in vitro rooting process completes, plantlets are ready to be transferred from the aseptic tissue culture container into the soil. Immediate transfer of tissue culture plants into soil is detrimental for survival of regenerated plants due to desiccation, infection, and light temperature shock. Steps taken to ensure successful transfer of the plantlets of Stage III from the aseptic environment of the laboratory to the environment of greenhouse comprise stage IV.

Advantages of Micropropagation:

1. Requires relatively small growing space.
2. The technique of micropropagation is applied with the objective of enhancing the rate of multiplication. Through tissue culture over a million plants can be grown from a small, even microscopic, piece of plant tissue within 12 months.
3. Shoot multiplication usually has a short cycle (2-6 weeks) and each cycle results in logarithmic increase in number of shoots.
4. Tissue culture gives propagules such as minitubers or microcorms for plant multiplication throughout the irrespective of the season.

Cell suspension culture

A cell suspension culture consists of single cell or aggregates of cells dispersed and growing in a moving liquid medium. It is normally initiated by transferring pieces of undifferentiated and friable callus to a liquid medium that is continuously agitating by a suitable device. Alternatively leaves or other soft tissues can be grind gently to get intact living cells that can be used to raise cell suspension culture.

An enzymatic method has also been employed for isolation cells from a tissue.

Types of suspension cultures:

1. **Batch culture**

A cell culture grown in fixed volume of nutrient medium is called as batch culture.

Here the biomass goes on increasing by cell division and growth until a limiting factor in the medium is existed. Then the cells are separated from the medium and sub cultured in fresh medium.

2. **Continuous culture**

Here a culture is continuously supplied with nutrients by inflow of fresh medium, where at the same time equal amount of spent medium is removed so that the culture volume remains constant. In this a way a culture can be maintained for a longer time.

Application of cell suspension culture:

a. Large scale micro propagation of plants by culturing undifferentiated cells and then by shoot induction.
b. In somatic embryogenesis.
c. For production and extraction of secondary cell metabolites.

Somatic embryogenesis

In somatic embryogenesis, embryos are generated from somatic cells. They are also called as adventive embryos or non-zygotic embryos. Somatic embryos can be generated either through a callus (indirect embryogenesis) or directly from the explant (direct embryogenesis).

In sexual reproduction of plants, the act of fertilization triggers the embryogenesis process in the egg cell. However, it is not a monopoly of the egg cell to form an embryo. Cells of the nucellus or inner integument of the members of Rutaceae family (e.g. Citrus) may develop in to embryos.

In *in vitro* conditions somatic cells are triggered to form embryos. Embryo being a bipolar structure, gives rise to a complete plant with shoot and root.

This technique was first developed in *Daucus carrota* (Carrot).

The somatic embryo formation is carried out in following steps:

1. Induction of callus: Callus is induced from the explant in a medium containing high concentration of auxins.
2. Development of embryos: A callus containing pro embryogenetic masses is transferred to a basal medium without any hormones for development of embryos.
3. Maturation of embryos: The complete embryos are then transferred for maturation in a medium where an artificial dormancy period is given at low temperature.
4. Embryos can be germinated on a basal medium.

Applications:

a. As tool for micro propagation of plants on a large scale in a liquid medium.
b. To produce artificial or synthetic seeds.

Application of plant tissue culture

A small amount of tissue is needed for the regeneration of plants. Callus culture, somatic embryogenesis, cell suspension culture, shoot tip culture are important tools of micro propagation of plants on large scale.

The *in vitro* techniques provide the method for speedy International exchange of plant materials.

Tissue cultured materials can be used for germplasm storage or gene banks.

Disease free plants can be produced with Meristem tip culture.

Cell suspension cultures can be used for medicinal value secondary metabolites on large scale

Using somatic embryogenesis synthetic seeds can be produced.

Tissue culture techniques are indispensable for genetic modification of plants.

Protoplast culture techniques are used for production of somatic hybrids by distant hybridization.

Thus plant tissue culture techniques provide very important tools for development of plant science.

Dr. Rafiq Zakaria Campus

Maulana Azad College Arts,Commerce and Science

Aurangabad

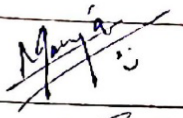
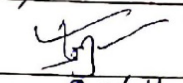
Dept. Microbiology

B.Sc. III Year 2017-18

Date : 22/3/2018

Attendance list for tour

Sr.no.	Roll no.	Students name	Sign.
1	201	Afreen Fatema Shaikh Kaleem	
2	202	Ammara Tazeen Abdul Qayyum	
3	203	Shaikh Khijroddin Abdul Wahid	
4	204	Shaikh Azka mukhayyar Maqsood Ahmed	
5	205	Shaikh Afshin Irfan	
6	206	Rizvi Insha S. Athar Hussain Rizvi	
7	207	Manjhi Rinku Kumari Rameshwar	
8	208	Kazi Ammara Sami Kazi Rafat Sami	
9	209	Muhammad Md Amarullah Mohammad Ziaullah	
10	210	Siddiqui Md Arshiyan Anwar Iqbal	
11	211	Patel Shoeb Patel Rauf	
12	212	Jalnawala Zainab Bano Zulfiqar Hussain	
13	213	Javeria Firdous Md Abdul Riyaz	

14	214	Siddiqua Mariya Mohd Abdul Jabbar	
15	215	Mohd Inzemam Mohd Ismail	
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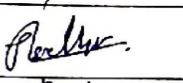
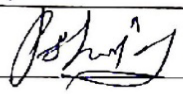
17	217	Jadhav Sagar Nana	
18	218	Shaikh Parvej Alam Isak	
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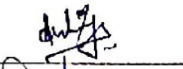
20	220	Shaikh Arshiya Anjum Shaikh Meheboob	
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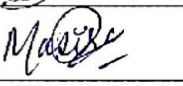
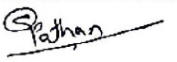
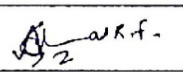
22	222	Syeda Massira Parveen Syed Mufeezuddin	
23	223	Pathan Md Sameer Khan Usman Khan	
24	224	Shaikh Almas Raza	
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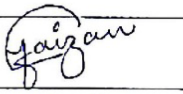
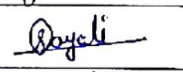
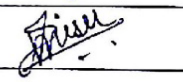
26	226	Shaikh Mohd Faizan Abdul Rehman	
27	227	Dandge Sayali Kamalshil	
28	228	Pisu Vaidehi Shripad	
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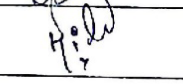
30	230	Baqudoom Ali Dayani Nida Faraj	
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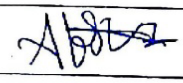
32	232	ShaikhAfsha Kausar Abdul Naeem	

33	233	Shaikh QuraAin Mohd Shahed Moin	
34	234	Quazi Moha Faizan uddin Quazi Mohd Shazaduddin	
35	235	Lokhande dipali Tukaram	Dipali
36	236	Murge Shivprasad Puaspraj	
37	237	Shaikh Naveed Maheboob	
38	238	Siddqui Firdous Siddiqui Haroon	

Signature of the HOD,

(Dept of Microbiology)

Maulana Azad College

Aurangabad

Signature of the supervising teacher

Maulana Azad College, A'bad

Dr.Rafiq Zakaria Campus

Maulana Azad College of Arts, Commerce and Science.

Aurangabad

Dept: Microbiology

Date: 7-9-2017

B.SC III Students contributed to

MICROBIOPHILICS

Sr.no	Roll no.	Name of the students	Toipc	Sign.
1	209	M.Amerullah	cell comp. difference	
2	221	Shaikh Durvesh	no and en.	
3	237	Shaikh Naveed	staining	
4	215	Mohd Inzemam	— " —	
5	201	Afreen Fatema	Prevention of Soy of	
6	202	Ammara Tazeen	Spoilage	
7	208	Kazi Ammara	Yeast Cy	
8	206	Insha Rizvi	Application.	
9	212	Zainab	Normal flora of skin, Body	
10	224	ALMAS RAZA	4 MDR of S. aureus	
11	229	Sana Jabeen	Normal flora of skin	
12	220	SHAIKH ARSHIA ANJUM	Normal floca of NOSE	
13	205	Shaikh Afshan	VINEGAR	
14	228	PISU VAIDEHI SHRIPAD	Oriental & occidental food	
15	233	SK. Qurrat-ul-ain	fermented food	
16	222	SAYED MASIRA	Application of Micro.	
17	230	Nida Al-Daiyani	Applications of Microbio.	
18				
19				

Dr.Rafiq Zakaria Campus

Maulana Azad College of Arts, Commerce and Science.

Aurangabad

Dept: Microbiology

Date: 7-9-2017

MICROBIOPHILICS

Sr.no	Roll no.	Name of the students	class	Sign.	Feedback
1	224	Shaikh Shoeb	Ist year		V. good
2	208	SHAH IRFAN	I St year		V. good
3	222	SAYED MASIRA	III Yr		Nice discussion
4	230	Nida Al-Qaiyumi	TY		Good.
5	205	S.K Afshan	TY		V. good.
6	229	Sana Jabeen.	III year.		
7	212	Zainab	III Yr		Good.
8	206	Insha Rizvi	BSc III yr		We understood
9	208	Ammara Kazi	BSc III yr		
10	201	Afreen Fatima	BScIII Yr		
11	202	Arhmara Tazeen	BSc III Yr		Nice presentation.
12	220	SHAIKH ARSHIYA ANJUM	B.Sc III yr		
13	224	Shaikh Ahmas Raza	B.Sc III Y		V. good.
14	221	Shaikh Durvesh	B.Sc. III Yr		Proper description needed.
15	215	Mohd Imzemam	Bsc III yr		Good.
16	237	Shaikh Naveed	B.Sc III Yr		
17	228	Pisu Vaidehi Shripad	B.Sc. T. Y.		Appreciate the hard work
18	227	Shaikh Sayma Rafik	B Sc Ist yr		
19	231	Sk. Malika Mahwish	BSC I yr		V. good. Hard work
20	201	SK. Saba Begum	B.SC Ist yr		
21	222	Khan Samreen	B.Sc I Yr		V. good.
22	219	Ashwini Pehekar	B.Sc I yr		Interesting
23	215	Syeda Humaira	B.Sc I Yr		More topics
24	216	Khan Zehra Fatima	B.Sc I yr		
25	229	Khan Javeriya Jamkeen	B.Sc I yr		
26	237	Humaira Tazeen	B.Sc I yr		Nice
27	248	Isham Nida	B.Sc I Yr		V. nicely told.

Department of Physics and Electronics

Department of Physics and Electronics Visited Banglore in 2017

Glimpses of Study tour

Bangalore tour.

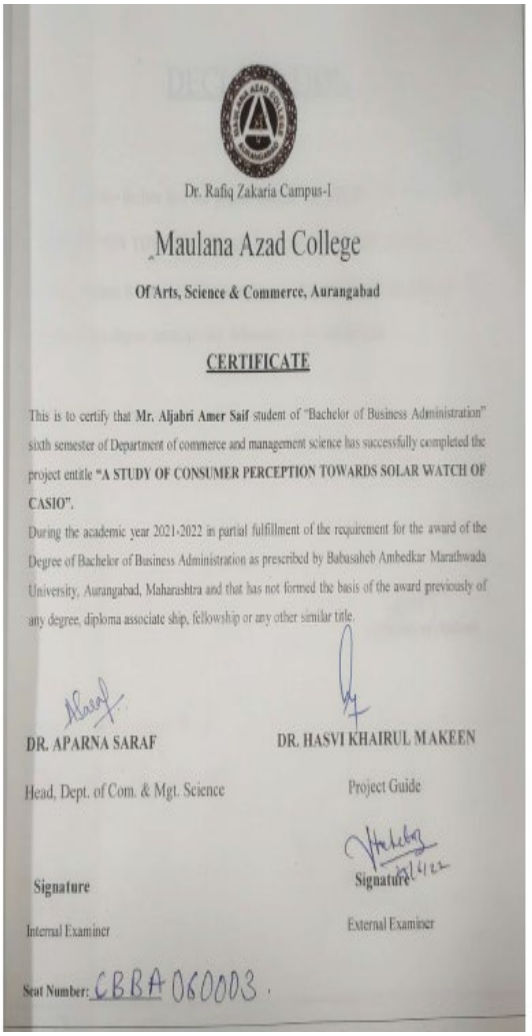
Departure Attendance. Date - 12/12/2017.

Name	Sign.
Mr. Asif	Asif
2) Mr faizan	M. Faiz
3) Mr. Israel	Israel
4) Mr. furqan.	Furqan
5) Mr. Anas	Anas
6) Mr. Ishwar	Ishwar
7) Mr. Sohail Ali	Ali
8) ~~Mr. Irshad.~~	~~M~~
9) Mr. Tawheed	T
10) Mr. Sajid Patel	Patel
11) Mr. Saeed.	saeed
12) Mr. Sohail	M
13) Mr. Akash	Akash
14) Mr. Zia	Zaid
15) Mr. Suleman.	Sulemans

All students Report at 2:00 PM dated on 12/12/2017 to Phy & Ele department.

Project

Project report of Department of Commerce and Management are given as follows



Dr. Rafiq Zakaria Campus-I

Maulana Azad College

Of Arts, Science & Commerce, Aurangabad

CERTIFICATE

This is to certify that **Mr. Aljabri Amer Saif** student of "Bachelor of Business Administration" sixth semester of Department of commerce and management science has successfully completed the project entitle **"A STUDY OF CONSUMER PERCEPTION TOWARDS SOLAR WATCH OF CASIO".**

During the academic year 2021-2022 in partial fulfillment of the requirement for the award of the Degree of Bachelor of Business Administration as prescribed by Babasaheb Ambedkar Marathwada University, Aurangabad, Maharashtra and that has not formed the basis of the award previously of any degree, diploma associate ship, fellowship or any other similar title.

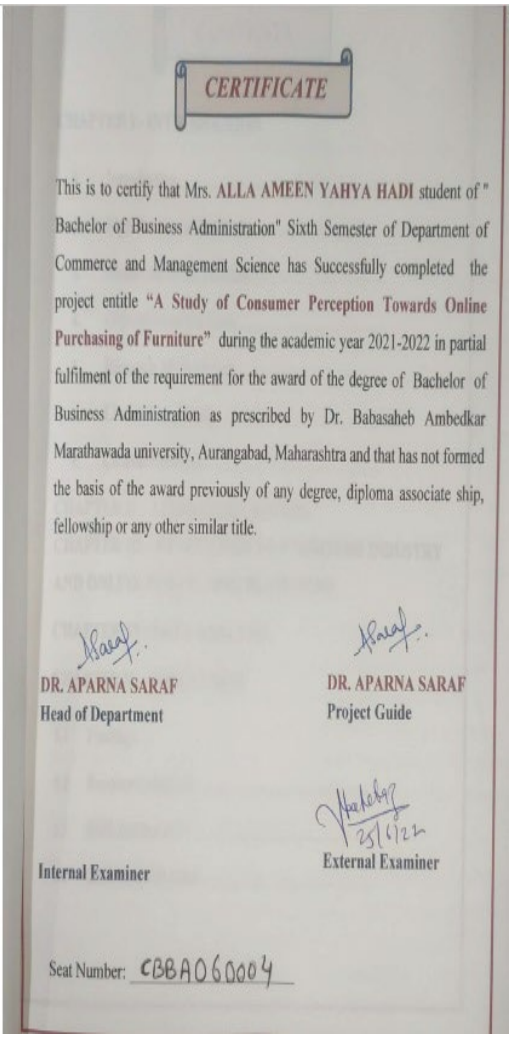
DR. APARNA SARAF
Head, Dept. of Com. & Mgt. Science

DR. HASVI KHAIRUL MAKEEN
Project Guide

Signature
Internal Examiner

Signature 25/4/22
External Examiner

Seat Number: CBBA060003



CERTIFICATE

This is to certify that Mrs. **ALLA AMEEN YAHYA HADI** student of " Bachelor of Business Administration" Sixth Semester of Department of Commerce and Management Science has Successfully completed the project entitle **"A Study of Consumer Perception Towards Online Purchasing of Furniture"** during the academic year 2021-2022 in partial fulfilment of the requirement for the award of the degree of Bachelor of Business Administration as prescribed by Dr. Babasaheb Ambedkar Marathwada university, Aurangabad, Maharashtra and that has not formed the basis of the award previously of any degree, diploma associate ship, fellowship or any other similar title.

DR. APARNA SARAF
Head of Department

DR. APARNA SARAF
Project Guide

Internal Examiner

25/4/22
External Examiner

Seat Number: CBBA060004

Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

Dr. Rafiq Zakaria Campus

Maulana Azad College of Arts, Science & Commerce

Dr. Rafiq Zakaria Marg, Rauza Bagh, Aurangabad.

Department of Commerce Management

CERTIFICATE

This is to certify that this Project report entitled "Cake Management System" is the bonafide work of "***Mr. Abuzar Shaikh***", Bearing the Seat Number ECOBOOO3 Student of B.com E-Commerce III rd Year, who carried out the work under my supervision for the academic year 2021-22

Mr. Mohd. Farooq
(Project Guide)

Dr. Aparna Saraf
(HOD)

Examiner

2

Dr. Rafiq Zakaria Campus

Maulana Azad College of Arts, Science & Commerce

Dr. Rafiq Zakaria Marg, Rauza Bagh, Aurangabad.

Department of Commerce Management

CERTIFICATE

This is to certify that this Project report entitled "**World Dent Clinic Website**" is the bonafide work of "***Mr. Ahmed Ali Khan***", Bearing the Seat Number CPCBGOOO2 Student of B.com E-Commerce III rd Year, who carried out the work under my supervision for the academic year 2021-22.

Mr. Mohd. Farooq
(Project Guide)

Dr. Aparna Saraf
(HOD)

Examiner

CERTIFICATE

DECLARATION

This is to certify that Mr. SHAIKH AZMAT AHMAD is a regular student M.com II year of Maulana Azad college, Aurangabad, Maharashtra She/he has conducted an authentic research work on the topic "A project report on financial data analysis of (your companys name) And completed her/his research project successfully under the guidance of DR.Hasvi Khairul Makeen sir . This project a has been prepared for his/her M.Com [Final] for examination 2021-2022 and is being submitted there of.

Dr. Aparna S. Saraf
H.O.D

Dr. HasviKhairulMakeen
GUIDE

Internal examinar

External examinar

Seat number GMCO401163

CERTIFICATE

This is to certify that **Mr. VIKAS PUNDLIK JADHAV** is a regular student M.com II year of Maulana Azad college, Aurangabad, Maharashtra he has conducted an authentic research work on the topic "A project report on financial data analysis of **(HCL TECHNOLOGIES)** And completed his research project successfully under the guidance of **Dr.Hasvi Khairul Makeen** sir . This project a has been prepared for his M.Com [Final] for examination 2021-2022 and is being submitted there of.

Dr. Aparna S. Saraf
H.O.D

Dr. Hasvi Khairul Makeen
GUIDE

Internal examinar

External examinar

Seat number GMCO401128

CERTIFICATE

This is to certify that **Zeba Fatema Khan** student of Master Personal Management 4th semester of the Department of Management has successfully completed the project entitle **"Recruitment & Selection Process"** in partial fulfilment of the requirement for the award of the Degree of Masters Of Commerce as Prescribed by Dr. Babasaheb Ambedkar Marathawada University, Aurangabad, Maharashtra and that has not formed the basis of the award previously of any degree.

Dr.Aparna S.Saraf
Head of the Department

Dr.H.K.Makeen
Project Guide

Internal

External

Certificate

This is to certify that **Km Indu Tiwari** student of "Master of Personal Management" fourth Semester of the Department of Commerce and Management Science has successfully completed the project entitle **"A STUDY OF TRAINING AND DEVELOPMENT AT DCM SHRIRAM LTD" during the academics year 2021-2022.** In partial fulfilment of the requirements for the award of the Degree of Master of Personal Management as prescribed by Dr. Babasaheb Ambedkar Marathwada University, Aurangabad and that has not formed the basis of the award previously of any degree, diploma associate ship, fellowship or any other similar title

Dr. Hasvi Khairul Makeen
Professor,
Dept. of Comm & Mgmt Sci,
Maulana Azad College,
Aurangabad.

(Project Guide)

Dr. Aparna Saraf
HOD
Dept. of Comm & Mgmt Sci,
Maulana Azad College,
Aurangabad.

External

Date:
Place: Aurangabad

External

Department of History

Department of History student involved in project activity

Dr. Rafiq Zakaria Campus

Maulana Azad College of Arts, Science & Commerce

Post Box No. 27, Dr. Rafiq Zakaria Marg, Rauza Bagh, Aurangabad-431 001 Maharashtra.
Tel.: 0240-2381102 | Web: http://maca.ac.in | Fax: 0240-2390422 | Email: macprincipal@gmail.com

MINORITY INSTITUTE

NAAC Re Accredited Grade 'A' | UGC's Status of "COLLEGE WITH POTENTIAL FOR EXCELLENCE" | NATIONAL INSTITUTIONAL RANKING FRAMEWORK - 151-200

Ref. No. MAC: 12/2017-18/1854

Date: 28-02-2018

To,
Mr. Wani P.R.,
Assistant Professor in History,
Lokseva College, Garkheda,
Aurangabad.

Sub: ***Appointment as external examiner in the subject History (Main) of B.A. III (VI Sem.) on 5th March 2018***

Sir,

I am pleased to appoint you as an external examiner for Practical Examination at B.A. III (VI Sem.) in the subject of History (Main) on 5th March 2018 at 11.00 a.m at Department of History.

Kindly convey your consent to the Head of the Department of History at your earliest for the same.

Thanking you,

Yours faithfully,

(Dr. Mohd. Razaullah Khan)
In-charge Principal ,
I/c. PRINCIPAL
Maulana Azad College,
AURANGABAD.

I/C

Received
01/03/2018

Dr. Rafiq Zakaria Campus
Maulana Azad College of Arts, Science & Commerce
Post Box No. 27, Dr.Rafiq Zakaria Marg, Rauza Bagh, Aurangabad-431 001 Maharashtra
Tel.: 0240-2381102 | Web: http://maca.ac.in | Fax: 0240-2390422 | Email: masprincipal@gmail.com
MINORITY INSTITUTE
NAAC Re Accredited Grade 'A' UGC's Status of "College with Potential for Excellence"
National Institutional Ranking Framework - 151-200

Ref. No. MAC: 17/2017-18/1870

Date:- 05-03-2018

To,
The Principal
Lokseva College,
Garkheda, Aurangabad.

Subject: Relieving Letter.

Sir,

Mr. Wani P.R., Assistant Professor (History), of your College has worked as external examiner in the subject of History at B.A. examination 5th March 2018 at 11:00 a.m. He has been relieved on 5th March 2018 at 03:00 p.m.

Thanking you,

Yours faithfully,

(Dr. Mohd. Razaullah Khan)
In-Charge Principal
I/c. PRINCIPAL
Maulana Azad College,
AURANGABAD.

Received
05/03/2018
Mr. Wani P.R.

Maulana Azad College of Arts, Science & Commerce,

Dr Rafiq Zakaria Campus, Roza Bagh, Aurangabad 431001

Attendance List of B.A. III Year Semester VI, History Main Paper Project Assessment (Based on Paper XII & XVI) History Subject B.A.T.Y.

Sr. No.	Seat Number	PRN	Student Name	Title of the Project	Present / Absent	Signature
1	NBF601712	2015015200461975	Khan Farheen Fatema Khan Aref	History of Sufi Dargahs of Aurangabad	P	
2	NBF602343	2014015200417194	Shaikh Yasminbegam Hanif	[illegible]	P	
3	NBF602480	2015015200463533	Syed Firdose Begum Syed Razeque	[illegible] History of Aurangabad	P	
4	NBF602589	2014015200901943	Um Kulthom Mohammed Saleh Mohammed Al Subari	History of Socotra Island in Economic Trade Aspects of Indian Ocean	P	

05/03/2018

Signature of External Examiner

Mr. Wani P.R.

Signature of Teacher Guide

Dr. Shaikh Musak Rajjak

Signature of Head of Department of History

Dr. Shaikh Musak Rajjak

Mob. 9860068955

Date: 05 March 2018
Place: Department of History, Maulana Azad College, Aurangabad
Time: 11:00 a.m. to 03:00 p.m.

Dr.Shaikh Musak Rajjak
Assistant Professor & Head
Department of History
Maulana Azad College of Arts, Science & Commerce
Roza Bagh, Aurangabad-431001. (Maharashtra) India

Maulana Azad College of Arts, Science & Commerce,

Aurangabad 431001

CERTIFICATE

Class: B.A.Third Year

Semester VI

Academic Year: 2017-18

Date: 05-03-2018

DEPARTMENT OF HISTORY ★ M.A.C. AURANGABAD

This is certified that the project work entered in this Journal / Project Report / Notebook is the work of

Khan Farheen Fatema Khan Aref of B.A.III Year VI Semester (**History Main**), Seat No. **NBF601712**, has satisfactorily completed the required research work for Project in this college for Paper No.12 & 16 in this college.

Project Title: ***History of Sufi Dargahs of Khuldabad***

Head of the Department

Dr.Shaikh Musak Rajjak
Assistant Professor & Head
Department of History
Maulana Azad College of Arts, Science & Commerce
Roza Bagh, Aurangabad-431001. (Maharashtra) INDIA

External Examiner

Prof. P. R. Wani
Asst. Prof., Dept. of History
Lokseva Art's & Science College,
Aurangabad-431005

Internal Examiner (Teacher Guide)

Maulana Azad College of Arts, Science & Commerce,

Aurangabad 431001

CERTIFICATE

Class: B.A.Third Year

Semester VI

Academic Year: 2017-18

Date: 05-03-2018

This is certified that the project work entered in this Journal / Project Report / Notebook is the work of

Shaikh Yasminbegam Hanif of B.A.III Year VI Semester (**History Main**), Seat No. **NBF602343**, has satisfactorily completed the required research work for Project in this college for Paper No.12 & 16 in this college.

Project Title: ***Rajarshi Shahu Chatrapati: Jiwan wa Kaary***

Head of the Department

Dr.Shaikh Musak Rajjak
Assistant Professor & Head
Department of History
Maulana Azad College of Arts, Science & Commerce
Rora Bagh, Aurangabad-431001. (Maharashtra) INDIA

External Examiner

Prof. P. R. Wani
Asst. Prof., Dept. of History
Lokseva Art's & Science College,
Aurangabad-431005

Internal Examiner
(Teacher Guide)

Maulana Azad College of Arts, Science & Commerce

Aurangabad 431001

CERTIFICATE

Class: B.A.Third Year

Semester VI

Academic Year: 2017-18

Date: 05-03-2018

DEPARTMENT OF HISTORY M.A.C. AURANGABAD

This is certified that the project work entered in this Journal / Project Report / Notebook is the work of

Sayed Firdose Begum Syed Razeque of B.A.III Year VI Semester (**History Main**), Seat No. **NBF602480**, has satisfactorily completed the required research work for Project in this college for Paper No.12 & 16 in this college.

Project Title: ***Local History of Aurangabad***

Head of the Department
Dr.Shaikh Musak Rajjak
Assistant Professor & Head
Department of History
Maulana Azad College of Arts, Science & Commerce
Roza Bagh, Aurangabad-431001. (Maharashtra) INDIA

External Examiner
Prof. P. R. Wani
Asst. Prof., Dept. of History
Lokseva Art's & Science College,
Aurangabad-431005

Internal Examiner
(Teacher Guide)

Maulana Azad College of Arts, Science & Commerce,

Aurangabad 431001

CERTIFICATE

Class: B.A.Third Year

Semester VI

Academic Year: 2017-18

Date: 05-03-2018

DEPARTMENT OF HISTORY ★ M.A.C. AURANGABAD

This is certified that the project work entered in this Journal / Project Report / Notebook is the work of

Um Kulthom Mohammed Saleh Mohammed Al Subari of B.A.III Year VI Semester (**History Main**), Seat No. **NBF602589**, has satisfactorily completed the required research work for Project in this college for Paper No.12 & 16 in this college.

Project Title: ***History of Soctro Island in Economic Trade Aspects of India***

Head of the Department

Dr.Shaikh Musak Rajjak
Assistant Professor & Head
Department of History
Maulana Azad College of Arts, Science & Commerce
Aurangabad-431001. (Maharashtra) INDIA

External Examiner

Prof. P. R. Wani
Asst. Prof., Dept. of History
Lokseva Art's & Science College,
Aurangabad-431005

Internal Examiner
(Teacher Guide)

Dr. Rafiq Zakaria Campus-1

Maulana Azad College of Arts, Science and Commerce,

Aurangabad.

EXPERIENTIAL LEARNING DETAILS

Department Of Microbiology

Academic Year:- 2017-18

Sr. No	Class	No. of Experiments	Practical papers	No. of Students
1	B.Sc I year	23	Paper III & VI	27
2	B.Sc II year	48	Paper IX & XIII Paper X & XIV	32
3	B.Sc III year	43	Paper XVII & XXI Paper XVIII & XXII	34

HEAD, DEPT. OF MICROBIOLOGY MAULANA AZAD COLLEGE AURANGABAD

Dr. Aditi Bhattacharya

(Prof & HOD Microbiology)

FAROOQUI MAZAHAR AHMED

Digitally signed by FAROOQUI MAZAHAR AHMED
Date: 2023.07.20 15:41:45 +05'30'