Annual Quality Assurance Report
2021-22

Criteria – II

Teaching- Learning and Evaluation

2.2.1 The institution assesses the learning levels of the students and organizes special Programmes for advanced learners and slow learners

Institutional Policy for Learning Level of Assessment

- Every year teachers of all the departments compile the record of the marks of students at the entry-level.
- The students are sorted into the groups of high percentage, medium percentage, and low percentage. This is a baseline with the help of count marks of core subjects.
- With the help of Class Tests in the first-semester assessment of the baseline is defined.
- The subject teachers form the groups of slow learners and advanced learners and the information of the same is useful to handle the groups.
- The remedial classes are planned by the departments for all the slow learners. Sometimes, One- to-one guidance is provided to the students.
- Every Teacher engages lectures for problem-solving for slow learners.
- Internal Unit Tests are helpful to assess the improvement of the slow learner students.
- The slow learners give a positive response which is signified through their satisfactory results in the Internal Unit Test at the end of every semester.
- For the advanced learners, projects, assignments like power-point presentations, paper presentations, etc. are assigned.
- Advanced learners and slow learners are assigned to organize various National Seminars, Guest lectures, and State Level Debate Competitions, etc. for their soft skills development.
- Students have mixed formal peer groups of advanced and slow learners to solve their problems related to study and teachers also support such groups and provide guidance when it is needed.
- Advanced learners are motivated to appear for competitive examinations.
- The college has been organizing SET/NET/GATE classes. The efforts done by Career Guidance and Placement Cell with the coordination of Remedial Coaching Committee are reflected in the bright results of college and the number of successful students in SET/NET/GATE examinations. Reading room facility available for preparation of the examination.
- Advanced learners as well as slow learners are also motivated by providing them the information of the career options that promote the students to excel in their performance.
- The advanced learners are guided to appear for various entrance examinations scholarships and fellowships.

PRINCIPAL
Science College, Nanded

<h1 style="text-align:center;color:#c0392b;">Remedial Coaching Classes
Annual Report 2021-22</h1>

Scheme of Remedial Coaching Classes is implemented for both Under Graduate and Post Graduate students of SC/ST/NT/DNT/OBS categories and Minorities to raise the level of comprehension of basic subjects, improvement of academic skills, strengthen the knowledge and attitude in the subjects. The subjects offered for the Coaching classes were Mathematics, Physics, Chemistry, Botany, Zoology, Fishery Sciences, English and Geology.

The Remedial Coaching classes were arranged without disturbance of regular teaching hours of the college which was convenient to the students. The whole teaching program was monitored by the committee in consultation with Heads of the concerned departments. This year online classes were engaged by well qualified and experienced teachers of our college. Soft copies of study material and various books were given to students. Students are motivated due to proper guidance. The results of above mentioned category students improved in these subjects. Every activity of this scheme is guided and well supported by the Principal of our college.
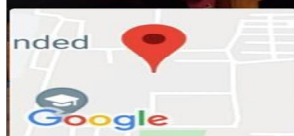
Remedial Library and Study Room

Remedial Library and Study Room

Nanded Education Society's

Science College, Nanded
Department of Mathematics and Applied Mathematics
Remedial Coaching classes Report
2021-22

1. Activities conducted by the department for slow and advanced learners

Sr. No.	Program In charge	Class	Name of the Activity	Date,	Time	Number of students
1	V. D. Borgaonkar	M. Sc. II year	Seminar by advanced learners	21/12/2021	3.00 P. M. to 5.00 P. M.	All students
2	V. D. Borgaonkar	M. Sc. I, M. Sc. II year	National Mathematics Day Celebration	22/12/2021	1.30 to 4.00 P.M.	All students
3.	Dr. P. R. Kulkarni	M. Sc. I year	Assignments of Challenging topics and problemsolving	30/12/2021	3.00 P. M. to 5.00 P. M.	All students
4.	Dr. P. R. Kulkarni	M. Sc. I year	Extra Classes	3/01/2022 05/01/2022	3.00 P. M. to 5.00 P. M.	All students
5.	Dr. K. R. Gaikwad	M. Sc. I year	Seminar by 1advanced learners	25/12/2021	3.00 P. M. to 5.00 P. M.	All students
6.	V. D. Borgaonkar	M. Sc. I year	Seminar by advanced learners	12/04/2022	3.00 P. M. to 5.00 P. M.	All students
7.	Mr. P. S. Sutkar	M. Sc. I year and B. Sc. II year	Guest lecture organized	26/03/2022	1.30 P. M. to 3.00 P. M.	All students

Activities Photographs
2021-22
Advanced learners of M. Sc. I and II year Mathematics are giving the seminars on hard topics.

Dr. V. C. Borkar, Associate Professor, Department of Mathematics, Yeshwant Mahavidyalaya, Nanded is delivering the guest lecture on the topic "Mean Value Theorem" on 26/03/2022 at 30 P. M.

r. Bhaskar Magar student of M. Sc. II year Mathematics is delivering a speech on Shrinivasa Ramanujan on the occasion of National Mathematics Day orgaonized by Department of Mathematics and Applied Mathematics, N. E. S. Science College, anded on 22/12/2021.

Nanded Education Society's

Science College, Nanded
Department of Mathematics and Applied Mathematics

Remedial Coaching 2021-22

Class M. Sc. I Mathematics

Sr. No.	Name of the Student
1.	Muneshwar Manisha B.
2.	BoralkarRutuja Sunil
3.	Pawar Shivani Laxmanrao
4.	Pawar Vaishnavi Ram
5.	Solanke Shweta Rameshrao
6.	Saddar Tejenderkaur G.
7.	Rathod Ravi Uttam
8.	Narwade Jyoti G.
9.	Gajanan A. Wankhede
10.	Sawant Pratiksha

Nanded Education Society's

Science College, Nanded

Department of Mathematics and Applied Mathematics

Remedial Coaching 2021-22List

of slow learners

Class M. Sc. I Mathematics

Sr. No.	Name of the Student
1.	Ambegaonkar Aarti Madhukar
2.	Bibekar Aashish Basvraj
3.	BodkeShivkanyaTrymbak
4.	ChopadeAvinashMaroti
5.	DadewarShivam Satish
6.	Davne Ajay Nagorao
7.	Deshmukh Ramkrishna S.
8.	Devane Ankita Venkatrao
9.	Dumalwar Shrinivas Bhojanna
10.	Gadhe Yogesh Madhavrao
11.	Gaikwad Rohini Bhujang
12.	GajewadAshlesha C.
13.	Ghogare Akash Bhimrao
14.	Godbole Alka Anand
15.	GurupwarAnikitaGanpatrao
16.	Hivare Aarti Nagorao
17.	Ingole Priyanka Prakash
18.	Ingole Savita Madhav
19.	Jadhao Anand Maroti
20.	Jadhav Deepak Balaji
21.	Jadhav Vaishnavi Narsingrao
22.	Jadhav Vaishnavi Narsingro
23.	Kadam Govind Devrao
24.	Kadam SadanandGanpatrao
25.	Kadam Santosh Keshavrao
26.	Kadam Shubhangi C.
27.	Kakde Pandurang Ashok
28.	Kalyankar Tanuja Anilrao
29.	KalyankarViashnavi S.
30.	Kanwate Priyanka Pralhad
31.	KashidManik Rama
32.	Kawale Shital Tejerao
33.	Kete Madhav Vaijanath
34.	Khandare Surekha Sanjay
35.	Latkar KomalikaVitthal
36.	Maindale Sudarshan D.
37.	MaisanwadShivam S.
38.	Malekar Dnyaneshwar Ashok

39.	Malipatil Pavan Yadhavrao
40.	Mandale Vaishnavi Shivaji
41.	Manjare Priyanka Rameshrao
42.	Miratkar Dattatray Dilip
43.	Mokle Kavita Kondiba
44.	More Govind Vinayakrao
45.	Morlawar Priyanka Raju
46.	MulangeKedar Balaji
47.	Mule Sachin Jagannath
48.	Mulgir Ajay Bansidhar
49.	Nadre Maheshwari Tushar
50.	Narwade Jyoti G.
51.	Narwade Kajal Syamsunadar
52.	Narwade Sujata Rajkumar
53.	PadalkarSandesha Santosh
54.	Panbude Shilpa Bhmrao
55.	Pardikar Reena Sureshrao
56.	Pathak AbishekGovindrao
57.	Pathan Nagma Nizamuddin
58.	Patil Atul Govardhan
59.	Patil Uma Ramesh
60.	Patkutwar Parvati Sainath
61.	PatodekarAswiniBabadas
62.	Pawar Kunal Ramrao
63.	Pente Komal Tirupati
64.	PetkarNilavatiLaxmanrao
65.	Poul Yogesh Munjaji
66.	Ramdinwar Vaishnavi Balaji
67.	Rathod Ashish Mangilal
68.	Rathod Sachin Ramesh
69.	Rautrao Saurabh D.
70.	RavanvaneeSaikiran Deepak
71.	Rewanwar Aditya Panditrao
72.	RinganmodeShipaNivrutti
73.	Sankla Kanchan Dhanraj
74.	ShelkeAnujaPandrang
75.	ShetwadShivanandSambhaji
76.	Shinde Kartik Dnyaneshwar
77.	Shinde Uma Balaji
78.	Solanke Pooja Madhavrao
79.	SonsaleMamtaKhandoji
80.	SukaleShubhangiDilip
81.	Sumayya Nazeer Ahmed
82.	Suryawanshi Sunita Ramrao
83.	Thakur Rani K.
84.	Upwar Shital Govind
85.	Zare Shubhangi Hanmantrao

Science College, Nanded

Department of Mathematics and Applied Mathematics

Remedial Coaching 2021-22List

of slow learners

Class M. Sc. II Mathematics

Sr. No.	Name of the Student
1.	Adhav Shrikant Diliprao
2.	Bainwad Ratnamala Shankarrao
3.	Bansode Balaji Bhimrao
4.	Boinwad Namrata Maroti
5.	Buttanwad Swati Rajeshwar
6.	Chapale Poojatai Gangadhar
7.	Chavan Vaishnavi Arjunsingh
8.	Chavhan Praful Sanjay
9.	Chiddarwar Pranav Prakash
10.	Dakore Pranita Venkatrao
11.	Dandve Ambika Govindrao
12.	Dange Pranjal Prakash
13.	Deokar Nikita Rajebhau
14.	Deshmane Sandhya Kishan
15.	Deshmukh Kushal Ramkrishna
16.	Deshmukh Praful Prakash
17.	Deshmukh Pruthviraj Namdeorao
18.	Gadekar Devyani Udaykumar
19.	Gaikwad Shital Sudam
20.	Gandewar Janhavi Narendra
21.	Gangasagar Shital Ramesh
22.	Gire Kiran Govindrao
23.	Gurnule Ramanand Subhashrao
24.	Gyadalwad Ashlesha Narayan
25.	Hasanapalli Vaishnavi Gangaram
26.	Jadhav Sneha Ramrao
27.	Jadhav Vaishali Vitthalrao
28.	Jadhav Vaishnavi Vinodrao
29.	Jadhav Yogesh Manchakrao
30.	Jangle Ramdas Bhagorao
31.	Joshi Aarti Satishrao
32.	Kadam Swapnil Balaji
33.	Kadekar Satwshila Balaji
34.	Kagale Krishna Rukhmaji
35.	Kalyankar Angad Devidas
36.	Kanjale Rutika Sanjay
37.	Kanshette Manisha Balaji
38.	Karhale Soni Navnath

39.	Kawade Vaishali Balaji
40.	Kawle Diksha Babanrao
41.	Khakre Prashant Piraji
42.	Khandare Ravi Sambhajirao
43.	Kondarwad Kishor Kartik
44.	Kore Sakshee Suresh
45.	Koyalwar Seema Anteshwar
46.	Krushnapure Pooja Vasantrao
47.	Kudale Laxmikant Anant
48.	Lashkare Pallavi Balaji
49.	Makode Shivraj Bhagwanrao
50.	Male Shubhangi Samarth
51.	Manurkar Vidhyatai Sanjaykumar
52.	Pawde Ankush Ramrao
53.	Pawde Kiran Prakashrao
54.	Phugnar Shital Sambhaji
55.	Puri Dattatraya Narayan
56.	Rathod Aarti Pralhad
57.	Rathod Ashwin Mangilal
58.	Rathod Shailesh Namdeo
59.	Rode Rajeshwari Rajendra
60.	Sadgar Pallavi Sadashiv
61.	Shaikh Siddhik Ragiq
62.	Shelke Yogesh Ginyandev
63.	Shete Kapil Malkarjun
64.	Shewale Shubham Anandrao
65.	Shinde Kiran Parshuram
66.	Shinde Rutuja Prakashrao
67.	Shinde Sahebrao Shivajirao
68.	Solapure Sagar Mohan
69.	Suryawanshi Anita Raju
70.	Suryawanshi Pratik Dulajirao
71.	Suryawanshi Santosh Suryabhan
72.	Telang Prathmesh Parmeshwar
73.	Thadisavle Vishavajit Gangadhar
74.	Wachewar Shraddha Pradeep
75.	Waghmare Sudhir Pirajirao
76.	Wathore Ajay Yadav
77.	Wayal Mayuri Manchakrao

Nanded Education Society's

Science College, Nanded

Department of Mathematics and Applied Mathematics

Remedial Coaching 2021-22

Class M. Sc. II Mathematics

Sr. No.	Name of the Student
1.	Bhalerao Sandesh Bapurao
2.	Bhandwalkar Arjun Ganeshrao
3.	Biradar Divya Pandurang
4.	Chandanwar Janhavi Balaji
5.	Kadam Ashwini Shankarrao
6.	Kadam Bhagyashri Hanmant
7.	Kadam Nikita Ansaji
8.	Kasbe Devanand Sadashiv
9.	Magar Bhaskar Babanrao
10.	Mariyam Begum Mohammed Ishaque
11.	Naheed Khanum Noorullah Khan
12.	Pawar Akshay Birbal
13.	Pawar Sharda Vitthalrao
14.	Safoora Elien Shoaib Ahmed
15.	Tehmina Saba Syed Saleem
16.	Kadam Rohini Chintamani

NES Science College
Department of Computer Science & IT
Academic Year 2021-22
Class: MSc-II YrSem-IIIPaper Title/No: CS-308 SK-03: Seminar Presentation Activity

Sr.No	SEAT.No	FIRST Name	Middle Name	Last Name	Topic Of Seminar
1.	DB49443	BANATE	ANUMAN	TUKARAM	Artificial Intelligence
2.	DB49444	BARDE	VAIBHAV	PRALHAD	
3.	DB49445	BHOSLE	SACHIN	ANANDRAO	
4.	DB49446	BIRADAR	SHITAL	BHASKARRAO	
5.	DB49447	CHAUHAN	SHRUTI	SHIVDANSING	
6.	DB49448	DAHALE	ADITYA	SHIVAJI	
7.	DB49449	DESHMUKH	SHIVSHANT	KHANDERAO	
8.	DB49450	DHONDGE	KIRAN	BALAJI	
9.	DB49451	GAIKWAD	PALLAVI	BALAJI	
10.	DB49452	GODBOLE	GEETA	SHANKARRAO	
11.	DB49453	INGOLE	KIRAN	BABANRAO	
12.	DB49454	JOSHI	GEETANJALI	SANJAYRAO	
13.	DB49455	KADAM	PRIYANKA	HANMANTRAO	
14.	DB49456	KENDRE	KOMAL	ASHOK	
15.	DB49457	KHANDARE	YASHODHARA	RAGHOJI	
16.	DB49458	KOTGIRE	RUTUJA	SATISHRAO	
17.	DB49459	LONE	CHANDRAKANT	SHANKAR	
18.	DB49460	MAIYA	OMKAR	SUBRAMNYAM	
19.	DB49461	PANDE	SAYALI	SANJAY	
20.	DB49462	PARVE	NAGESH	VIJAYRAO	
21.	DB49463	PATIL	NEHA	HANMANT	
22.	DB49464	PATKI	PRASAD	DEEPAK	
23.	DB49465	QUBA	QAUSEN	MD	
24.	DB49466	SAMREEN	BEGUM	SHAIKH	
25.	DB49467	SHINDE	GAJANAN	DILIPRAO	
26.	DB49468	SIDDIQUI	SABERUDDIN	MUMTAZUDDIN	
27.	DB49469	TAYADE	VAISHNAVI	SHIVAJIRAO	

Sr.No	Name of Student	Seminar Topic	Signature
1.	BANATE ANUMAN TUKARAM	Artificial Intelligence	
2.	BARDE VAIBHAV PRALHAD	RDBMS	
3.	BHOSLE SACHIN ANANDRAO		
4.	BIRADAR SHITAL BHASKARRAO	VIRTUAL REALITY	
5.	CHAUHAN SHRUTI SHIVDANSING		
6.	DAHALE ADITYA SHIVAJI	SEMANTIC WEB	
7.	DESHMUKH SHIVSHANT KHANDERAO		
8.	DHONDGE KIRAN BALAJI		
9.	GAIKWAD PALLAVI BALAJI	CREDIT CARD FRAUD DETECTION	
10.	GODBOLE GEETA SHANKARRAO	BIOMETRIC TECHNOLOGY	
11.	INGOLE KIRAN BABANRAO	EMBEDED WEB TECHNOLOGY	
12.	JOSHI GEETANJALI SANJAYRAO		
13.	KADAM PRIYANKA HANMANTRAO	CRYPTOCURRENCY	
14.	KENDRE KOMAL ASHOK	NO ADMISSION	
15.	KHANDARE YASHODHA RA RAGHOJI	5G TECHNOLOGY	
16.	KOTGIRE RUTUJA SATISHRAO	EDGE COMPUTING	
17.	LONE CHANDRAKANT SHANKAR	BIG DATA TECHNOLOGY	
18.	MAIYA OMKAR SUBRAMNA M	MACHINE LEARNING	

No.	Name	Topic	
19.	PANDE SAYALI SANJAY	COGNITIVE COMPUTING.	
20.	PARVE NAGESH	4G TECHNOLOGY	

No.	Name	Topic	
	VIJAYRAO(can change)		
21.	PATIL NEHA HANMANT	WIRELESS USB	
22.	PATKI PRASAD DEEPAK		
23.	QUBA QAUSEN MD ABDUL KALEEM	BLUE EYES TECHNOLOGY	
24.	RODLAWAR MANOHAR RAMESH		
25.	SAMREEN BEGUM SHAIKH SHABBIR	FACE DETECTION AND RECOGNITION TECHNOLOGY	
26.	SHINDE GAJANAN DILIPRAO	BLOCK CHAIN TECHNOLOGY	
27.	SIDDIQUI SABERUDDIN MUMTAZUDDIN		
28.	TAYADE VAISHNAVI SHIVAJIRAO	INTERNET OF THINGS	

Samsung Quad Camera
By Aditi

NANDED EDUCATION SOCIETY'S
SCIENCE COLLEGE, NANDED
Department of Physics and Electronics
Academic Year 2021-22

Activities conducted for slow and advance learners are as follows

Sr.No.	Program in charge	Name of activity	Date	Time	Number of the students
1	Mr.A.K.Ghadge	Surprise test	27/04/2022	12:40pm To 1:30pm	15
		Problem based test	05/05/2022	12:40pm To 1:30pm	07
		Assignment of challenging topics	13/05/2022	12:40pm To 1:30pm	07
		Oral Exam	24/05/2022	12:40pm To 1:30pm	15

Attendance Sheet of Remedial Classes

Nanded Education Society's

SCIENCE COLLEGE, NANDED
REMEDIAL COACHING CLASSES 2021-22
For SC/ST/OBC/Minority student
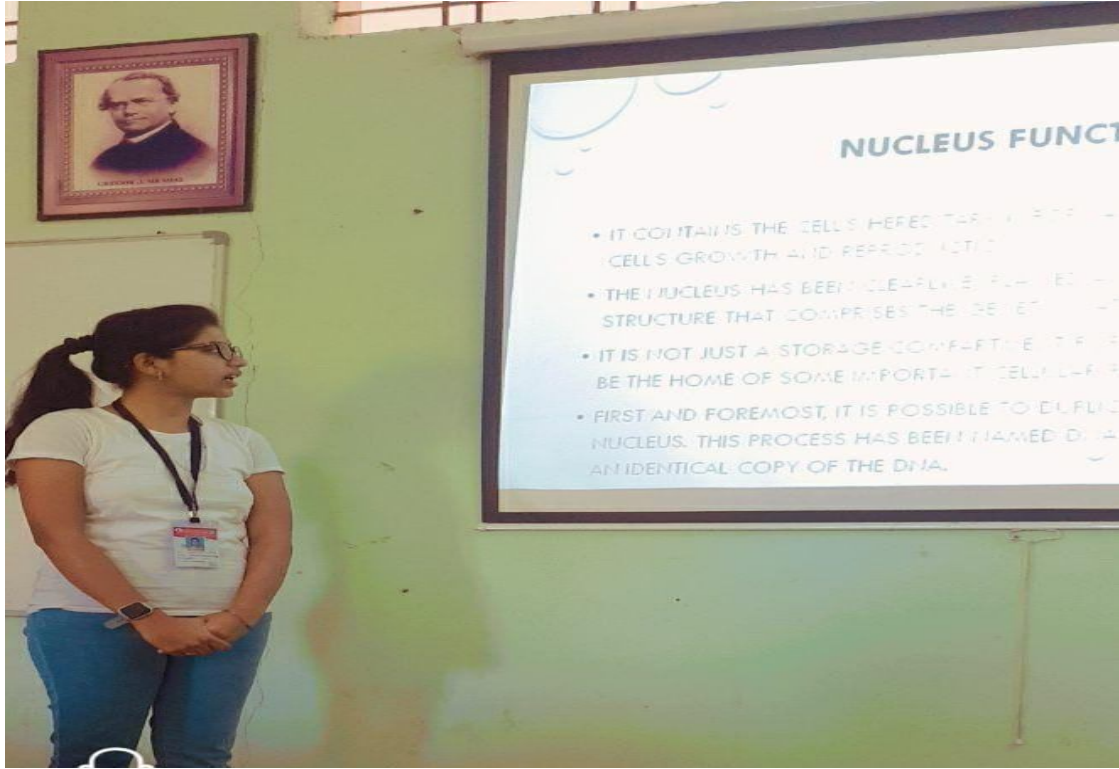**Attendance Sheet**

Name of Teacher: Ghadge A.K.   Class: MSc I   Date: 21/04/22   Time: 12.40 to 1:30

Sr. No.	Name of Student	Signature	Sr. No.	Name of Student	Signature
1.	Sachin C. Patil	Patil	OBC		
2.	Akanksha. m. Phad	Dulphe	NT (D)		
3.	Swapnil khillare	Swapnad	SC		
4.	mohit yewale	Mohit	SC		
5.	Pallavi Ugle	Bygle	SC		
6.	Manisha ghodke	mghodke	SC		
7	Vaishali Jadhv	Jadhav	SC		
8)	swati. Sonkamble	Swati	SC		
9)	Monika madilwar	Monika			
10)	Sai. D. Kale.	kale	SC		
11)	muskan Thekiya.	Thekiya			
12)	Nausin siddique	Nausin	OBC		
13)	Laximikant Hamwad	Hamwad	SC		
14)	saurabh mahadale	Saurabh	SC		
15)	Utkarsh Kamble.	Utkarsh	SC		
16)	Ulgulwad UDDHAV	Uddhav	ST		
17)	Singare Nikita	N Singare	OBC		
	:				

Signature of Teacher : Ramash

Department of Fishery Science

Eukaryotic cell:

- The cell size is comparatively larger than
- It has well organised nucleus and membra
- Protozoa, fungi, plants and animals have e
- Their genetic material is organised into chr
- Eukaryotic cell have a variety of complex lo structure.
- Eukaryotic cells divide by a process called m division).

Translation

- The process of forming a polypeptide chain from mRNA codons is known as translation
- It takes place in four steps namely, Activation of Amino acid, Initiation, Elongation, and Termination.

1- Activation of Amino acid:-

The process of attaching an amino acid to its respective transfer RNA (tRNA) is known as amino acid activation. also known as aminoacylation or tRNA char

2- Translation initiation:-

the charged tRNA attaches to the start codon (AUG). the small su binds to the mRNA. and finally, the large ribosomal subunit binds initiation complex.

N.E.S. Science College, Nanded

Answer Book

Name of the Student : Bhale Rajnigandha shriram

Class : B.sc 1st year   Roll No. | 1 | 5 |

Subject : Agri. Microbiology   Date : 27 / 12 /2021

Invigillator's Signature

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4) <u>Micro organism in food</u> →
          micro organism are always present in food.
micro organism are of benefit in producing desirable
fermentation such as making bread by m.org.
<u>Saccharomyces cerevesiae</u>, Alcohol oxidation of
vinegar, lactic acid fermentation of cabbage to
sauerkraut.

- micro organisms are found in raw foods and
  cooked food.
- the undesirable micro organisms get into food
  & cause disease or intoxications or food poisoning
  like botulism & salmonellosis
  eg → salmonella typhi, streptococcus.

5) <u>Micro organisms in milk</u> → Normal udders of
cows are never free from micro organism, it
means the first milk drawn always contains
more organisms then milk collected at the
close of operation. However most micro organism
enter milk from air and manhandling of milk

- Unless the milk is properly collected and stored, micro organisms are capable of producing undesirable changes, making milk unfit for human consumption

Example → Escherichia coli, streptococci, corilla

6) Micro organisms on the body surface of human ain

- The outer surface of the skin of the body always contain bacteria, the normal flora which are abundant in number are harmless and present the colonization of pathogenic bacteria occasionally a species may invade the body by massive numbers, but are destroyed by our defense mechanisms

- If they do not get destroyed they result in disease and infections are established

Example → E.coli, Staphylococcus, lactobacillus

Q.3 ⟶?

a) Genetic Engineering → Microbial genetics contributes to biology & microbiology as a whole. The genetic material regulates the development, structure & function of the cells & organism

- In genetic engineering scientist manipulate the genome of the microorganisms & employed them in various ways

- Eg → pseudomonas putida 'superbug' is a genetically engineered micro organisms which eats petroleum oil. Escherichia coli is engineered to produce insulin (hormone) which is commercially used in diabetic patients

- Nitrogen fixing gene (nif gene) is integrated into the genome of plants so that plant could directly fix the atmospheric nitrogen

- Many product like genetically modified food (GM) like Bt Bingal is available

- With the advent of genetic engineering using recombinant technology we are able to synthesis various enzyme, hormones, Antibodies

c) ⟶?

Agriculture → plants own their existence to the fertility of the soil, and this in turn depends upon the activity of microorganism.

- Russian scientist sergei winogradsky showed the importance of bacteria in taking nitrogen from the atmosphere, combining it with other elements & making it available as plant food

- In 1888, Symbiotic relationship between bacteria Rhizobium & leguminous plants Such as clover & alfalfa was shown

- Bacteria resides in the nodules of leguminous plants and gets protection, in turn it fixes atmospheric N_2 & convert into NO_3 which helps promotes plant growth, later Dutch microbiologist william Beijerinck found the free living nitrogen fixing bacterium Azotobacter & described its usefullness in incresing soil fertility

- plants cannot utilize organic coupound such as fats, carbohydrates & protein.

- The soil micro organisms attacks human and animals carcases & mineralize them making available to plants.

$$\frac{10}{10}$$

$$0.5\ OD = 0.5 - SD = 0.2 \times 10 = 20\ (\mu l)$$

$$1\ SD = 10\ \mu l$$

N.E.S. Science College, Nanded

Answer Book

Name of the Student : Bhale Rajnigandha Shriram

Class : B. Sc 1st year   Roll No. | 1 | 5 |

Subject : Agri microbiology   Date : 27 / 12 /20 21

19/20

Invigillator's Signature

Q. 1.

Spontaneous Generation Theory

From earliest times, people had believed in Spontaneous generation - that living organisms could develop from Nonliving matter. This view finally was challenged by the Italic physician Francesco Redi (1626-1697) who carried out a series of experiment on decaying meat in three containers, one was uncovered, a second was covered with paper, and the third was covered with fine gauze that would exclude flies flies laid their eggs on the uncovered meat & maggots developed. The other two pieces of meat did not produce maggots spontaneously. Thus the generation of maggots by decaying meat resulted from the presences of fly eggs & meat did not spontaneously generate maggots similar experiments by other helped discredit the theory for larger orgaism.

- Leeuwenhoek's communications on microorganisms renewed the controversy. Some proposed that microorganism arose by spontaneous generation even through larger organism didn't they pointed out that boiled extract of hay or meat a while. Indeed, such extracts were the forerunners of the culture media still used today in many microbiology laborotories.

In 1748 the english priest John Needham (1713-17 reported the result of his experiement on spontaneou generation. Needham boiled muttan broth in the flask that he then tightly stoppered. Eventually many of the flasks become cloudy and contained microorganism.

- A few years later, the Italian priest & Naturalist Lazzaro spallanzani (1729-1799) improved on Needhams experiemented design by first sealing glass flasks that cantained water & seeds. The Supporters of spontaneou generation maintained that heating the air in sealed flasks destroyed its ability to support life.

- several investigators attempted to counter such microorganism. Theodor Schwann (1810-1882) allowed air to sealed cantaining a sterile nutrient solution after the air had passes through a red-hot tube the flask remained sterile

- George friedrich Schroder (1810-1885) and theodon von Dusch (1824-1890) allowed to air to enter a flask of heating sterilized medium after it had passed through sterile cotton coool.

- No growth occurred in the medium even though the air had not been heating

- Despite these experiements, the french Naturalist felize Pouchet (1800-1872) claimed in 1859 to have carried out experiment conclusively proving that microbial growth could occur without air contamination.

- The famous french scientist louis posteur used swan necked flasks and showed that boiled broth remained free from microorganism because the dust particle were trapped in the bend of the neck

- In 1877, the spontaneous generation Theory conducted experiement the femal blow by John Tyndal using a box though when a beam of light was passed tyndall showed that optically empty air cantained no microorganism test tubes of broth remained clear in a box coated on the inside with glycerine to which dust particle adhered

Q.2 ──→?

Micro organisms are ubiquitous in nature they are found almost everywhere

- They are present in ponds and ditches, running stream & virus, seawater, soil, air, food, petroleum, oil on the body surface, body cavities intestinal tracts of Man

1) Microorganisms in soil

- soil is excellent growth media for the growth of many types of organisms

- These includes bacteria, fungi, algae, protozoa, viruses, in addition various nematodes insect' etc are also present

- A spoonful of soil contains billions of microorganism. The numbers and kinds of organisms present in soil depends upon the type of soil, soil depth, acidity or alkalnity, organic matter present, temp° & moisture. eg → streptomyces, Nocardia, clostridium.

2) Micro organism in air →

microorganism are found in air, because they are carried by the wind currents

- Micro organisms do not grow & multiply in air because conditions are not favourable for growth

- The types & numbers depend upon location amount of moisture dust particles, wind currents, presence of toxic gases.

- The microflora of air consists of spores of fungi ascospores of yeasts, conidia & endospores of bacillus & clostridium eg → penicillium, Aspergillus, Homodendrum.

3) Microorganism in water →
Most waters contain large numbers of microorganism. The numbers vary considerably depending upon the source of the water
- some species are always present & constituent normal flora of water eg → E.coli, usually fewer bacteria occurs in sea water than in soil because of poor conditions prevalent which do not support their growth. Eg → E.coli, salmonella.typhi

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