



Acharya Bangalore B-School

(Affiliated to Bangalore University, Approved by AICTE & Recognized by Govt. of Karnataka)
(Re-accredited with NAAC 'A' grade)

Aspire. Accelerate. Achieve.

2.2.1

SPECIAL PROGRAMS FOR LEARNERS

2016-2021

Abstract

The learning levels of students is assessed during bridge course, class tests and performance in assignments, and students are identified as Slow/Fast learners. Accordingly, slow learners are supported with additional support of tutorial classes & SAT-Self assessment tool and fast learners are encouraged to associate in projects/research and seminar participation.



SPECIAL PROGRAMS FOR ADVANCED AND SLOW LEARNERS

SL. NO.	PARTICULARS	PROGRAM	PAGE NO.
1	IDENTIFICATION MECHANISM	CONTINOUS INTERNAL ASSESSMENT	3-7
2	ADVANCED LEARNERS	RESEARCH PUBLICATIONS	8-9
		TERM PAPER	10-19
3	SLOW LEARNERS	SELF ASSESSMENT TOOL (SAT)	20-78
		TUTORIAL CLASSES	79-85




 Principal
Acharya Bangalore B-school
 Andrahalli Main Road, off Magadi Road,
 Bengaluru-560091



Acharya Bangalore B-School

(Affiliated to Bangalore University, Approved by AICTE & Recognized by Govt. of Karnataka)

(Re-accredited with NAAC 'A' grade)

Aspire. Accelerate. Achieve.

IDENTIFICATION MECHANISM - CONTINOUS INTERNAL ASSESSMENT

Andrahalli Main Road, Off Magadi Road, Bengaluru-560091, Karnataka, India

Contact us: 080 23090600, M: +91 91417 07070, admissions@abbs.edu.in

www.abbs.edu.in

ACHARYA BANGALORE B SCHOOL

Continuous Internal Assessment

CMD 3FI

Course: Indian Financial System

Course Code: CMD 3FI

Assessment Year:

Batch: 2017-19

Sl No	Reg.No.	CIA 1	CIA 2	Advanced/ Slow Learners	CIA 3	CIA 4	CIA 5	Grand.Total (50)
	TOOLS	A1	A2		C1	C2	MCG	
1	17YUCMD003	8	8		10	6	7	39
2	17YUCMD005	8	8		8	7	7	38
3	17YUCMD006	10	9	Advanced	9	10	9	47
4	17YUCMD013	10	9	Advanced	9	10	9	47
5	17YUCMD014	10	10	Advanced	10	9	10	49
6	17YUCMD017	4	4	Slow	6	7	8	29
7	17YUCMD023	4	4	Slow	7	8	6	29
8	17YUCMD024	6	6		8	6	8	34
9	17YUCMD025	8	8		10	8	6	40
10	17YUCMD028	7	7		10	10	8	42
11	17YUCMD031	7	8		7	6	7	35
12	17YUCMD032	6	7		8	8	8	37
13	17YUCMD036	4	5	Slow	7	7	7	30
14	17YUCMD041	8	7		6	10	8	39
15	17YUCMD044	6	6		7	7	7	33
16	17YUCMD047	7	8		8	10	8	41
17	17YUCMD048	10	10	Advanced	9	10	9	48
18	17YUCMD052	7	8		8	7	6	36
19	17YUCMD056	8	6		7	6	6	33
20	17YUCMD059	9	9	Advanced	10	9	10	47
21	17YUCMD063	7	7		8	6	7	35
22	17YUCMD064	8	8		6	8	8	38
23	17YUCMD066	8	8		6	8	7	37
24	17YUCMD073	7	7		9	7	8	38
25	17YUCMD074	8	8		7	10	8	41
26	17YUCMD079	7	7		6	8	6	34
27	17YUCMD081	7	8		7	7	10	39
28	17YUCMD084	7	8		6	8	6	35
29	17YUCMD091	7	8		7	9	7	38
30	17YUCMD098	5	8		6	8	7	34
31	17YUCMD101	7	8		7	7	10	39
32	17YUCMD104	7	8		8	7	9	39
33	17YUCMD108	9	9	Advanced	10	10	8	46
34	17YUCMD109	7	8		7	6	7	35
35	17YUCMD111	8	6		7	10	8	39
36	17YUCMD113	7	8		8	10	8	41
37	17YUCMD116	7	7		10	8	10	42
38	17YUCMD117	8	8		6	6	10	38
39	17YUCMD121	7	7		7	10	10	41
40	17YUCMD122	7	6		8	7	8	36
41	17YUCMD123	8	7		7	8	8	38
42	17YUCMD124	8	7		6	8	8	37
43	17YUCMD133	8	7		8	7	7	37

44	17YUCMD136	8	8		6	6	8	36
45	17YUCMD138	8	7		7	8	7	37
46	17YUCMD140	7	7		7	7	7	35
47	17YUCMD142	7	6		6	8	8	35
48	17YUCMD143	7	7		7	7	8	36
49	17YUCMD146	6	6		10	8	10	40
50	17YUCMD147	8	7		7	7	9	38
51	17YUCMD148	8	7		7	10	7	39
52	17YUCMD149	8	6		6	7	8	35
53	17YUCMD151	8	8		8	7	6	37
54	17YUCMD152	8	8		8	6	8	38
55	17YUCMD155	8	8		6	7	7	36
56	17YUCMD156	7	7		6	7	7	34
57	17YUCMD159	7	8		8	8	7	38
58	17YUCMD161	7	6		7	8	8	36
59	17YUCMD165	6	8		7	7	8	36
60	17YUCMD166	6	8		7	8	6	35
61	17YUCMD169	6	8		6	7	6	33
62	17YUCMD171	7	8		7	8	7	37
63	17YUCMD173	6	6		8	7	6	33
64	17YUCMD174	5	5	slow	6	8	8	32
65	17YUCMD177	8	8		6	8	8	38
66	17YUCMD181	4	4	slow	7	8	7	31
67	17YUCMD187	6	6		7	8	7	34
68	17YUCMD189	7	7		7	7	6	34
69	17YUCMD196	7	8		7	7	8	37
70	17YUCMD198	7	6		10	6	7	36
71	17YUCMD211	10	10	Advanced	10	9	9	48
72	17YUCMD213	7	8		6	8	7	36
73	17YUCMD222	8	8		8	7	7	38
74	17YUCMD226	7	6		7	7	7	34
75	17YUCMD227	6	8		8	6	7	35
76	17YUCMD228	7	7		6	6	7	33
77	17YUCMD231	4	5	slow	6	7	8	30
78	17YUCMD237	7	8		6	7	6	34

Sept-18 Oct-18

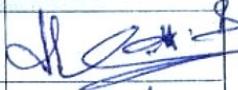
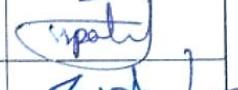
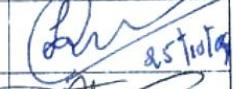
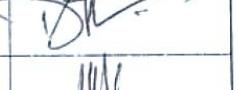
Open Open

Nov-18 Dec-18

Open Open Open

Open

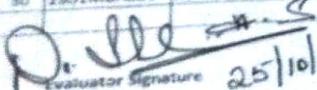
ACHARYA BANGALORE B-SCHOOL
MBA department

SI No	Name of the Faculty	Room No	SIGNATURE
1	Dr. Shalini H S	1	
2	Prof. Siddanagouda Policepatil	2	
3	Prof. Arul Senthil B	3	
4	Mrs.Kala Sridhar	4	
5	Dr. Ravi Shankar Bhakat	Gallery 2	
6	Prof. Naveen Pol	7	
7	Prof. Dattatreya Reddy	8	
8	Prof.Ashwin R John	Gallery 1	

ACHARYA BANGALORE B SCHOOL Dr. Shalini H S

COMMUNICATION MAPPING-EVALUATION SHEET (2019-20) BATCH - A SECTION DATED: 25/10/2019:Room No-1 / First Floor

Sl.No	Roll Nos.	NAME	Content(10)	Structure of the Speech(10)	Command Over Language (10)	Fluency in Delivery(10)	Body Language (10)	Total(50)	Remarks
1	1901MBA043	ABDUL SALAM T	Ab.	C	ABSENT				
2	1901MBA007	AJAY KUMAR	Ab.	C	ABSENT				
3	1901MBA167	AMOGH MADHUKAR KUDATARKAR	Ab.	C	ABSENT				
4	1901MBA113	ANIL KUMAR G	Ab.	C	ABSENT				
5	1901MBA044	ANKITA MADAI	Ab.	4	8	7	7	37	1pm-1.15pm
6	1901MBA126	ARUN KUMAR KC	Ab.	C	ABSENT				
7	1901MBA057	ASWATHY SHAJU	Ab.	C	ABSENT				
8	1901MBA077	AYYASH MOHAMMED K.M	Ab.	3	2	2	5	14	2.45pm - 3.58pm
9	1901MBA024	DAUSI VENKATA SAI DINESH	Ab.	C	ABSENT				
10	1901MBA062	HARIKRISHNAN S	Ab.	C	ABSENT				
11	1901MBA010	HTARTH KANZAFIA	Ab.	4	7	5	8	34	1.25pm - 1.35pm
12	1901MBA058	K. JASHWONTH REDDY	Ab.	C	ABSENT				
13	1901MBA172	KAVYA DURGAPPA NAGANNANAVAR	Ab.	C	ABSENT				
14	1901MBA158	KIRAN M.S	Ab.	C	PENDING				3.00pm
15	1901MBA042	KOLLIUPPA NAGA SHIVA GANESH	Ab.	C	ABSENT				3.00pm - 3.30pm
16	1901MBA021	MADHU BABU UMAKA	Ab.	C	ABSENT				
17	1901MBA064	MAUMITA PANJA	Ab.	9	10	10	10	49	1.42pm - 1.50pm
18	1901MBA088	MOHAMMED MANSOOR	Ab.	C	PENDING				
19	1901MBA177	N JAYAPRAKSH	Ab.	C	ABSENT				
20	1901MBA079	NEHA SARKAR	Ab.	C	ABSENT				
21	1901MBA084	PALELU MANASA	Ab.	C	ABSENT				
22	1901MBA065	PRABHUL H.B	Ab.	7	8	8	7	38	1.54pm - 2.02pm
23	1901MBA118	PRATEEK PRASHANT PATIL	Ab.	C	ABSENT				
24	1901MBA156	RAKSHITH D	Ab.	C	ABSENT				
25	1901MBA025	RAKTIM RANJAN HARIDWAR	Ab.	C	ABSENT				
26	1901MBA142	RANGANATHA VP	Ab.	C	ABSENT				
27	1901MBA159	RANJITH H.S	Ab.	6	7	5	6	36	2.05pm - 2.16pm
28	1901MBA105	RENJIFA JESMIN	Ab.	C	PENDING				
29	1901MBA134	ROHIT R BHATT	Ab.	C	ABSENT				
30	1901MBA081	ROHIT TRIVEDI	Ab.	C	PENDING				3.00pm


Evaluator Signature 25/10/2019



Acharya Bangalore B-School

(Affiliated to Bangalore University, Approved by AICTE & Recognized by Govt. of Karnataka)
(Re-accredited with NAAC 'A' grade)

Aspire. Accelerate. Achieve.

ADVANCED LEARNERS - RESEARCH PUBLICATIONS

Andrahalli Main Road, Off Magadi Road, Bengaluru-560091, Karnataka, India
Contact us: 080 23090600, M: +91 91417 07070, admissions@abbs.edu.in
www.abbs.edu.in

ACHARYA BANGALORE B SCHOOL RESEARCH PUBLICATION OF STUDENTS-MBA DEPARTMENT					
Sl.No	Name of the Author(s)	Month & Year	Title of the Paper	Name of the Journal with ISSN /ISBN	ISSN NO
1	Nishanth, K	16-Mar-16	Marketing Strategy of Financial Services Firm with respect to Muthoot Finance	AMBER, Vol7, Issue 1, Page No: 64-69	ISSN: 0976-3341
2	Sherin, B	16-Sep-16	A study on the Growth in Apparel Retail Sector	AMBER, Vol.7, Issue 2, Page No 69-72	ISSN: 0976-3341
3	Satish & Uppara Rama Krishna	17-Mar-17	A study on analysis of factors affecting the price of the commodity of silver	AMBER, Vol 8, Issue 1, Page No 81-88	ISSN: 0976-3341
4	Dasrshan Kuri	17-Sep-20	Impact of Business Ecosystem on Green Business	AMBER, Vol 8, Issue 2, Page No 114-119	ISSN: 0976-3341
5	Dhilshitha Baskaran	18-Dec-18	Employee Morale and Satisfaction with Reference to Retail Chain	Journal of Social Welfare and Management VOL.10 NO.3 SEP- DEC 2018.	eISSN: 2456-0871 pISSN: 0975-0231,
6	Darshan Kuri	18-Dec-18	A study on Sickness Absenteeism of OPD staff in Columbia Asia Hospital	Journal of Social Welfare and Management VOL.10 NO.3 SEP- DEC 2018.	pISSN: 0975-0231, eISSN: 2456-0871
7	Pavan S and Dr. Geevarathana	19-Jan-19	A study on Customer Perception of Himalayan Motorcycle of Royal Enfield after Relaunch	SS International Journal of Economics and Management	eISSN:- 22314963, Journal No. 46558
8	Praveen H S and Dr. Ravi Shankar BFokat	19-Jan-19	A study on Catchment Area Analysis of Fashion at Big Bazaar Store.	SS International Journal of Economics and Management	eISSN:- 22314963, Journal No. 46558
9	Ruuchi Padhi and Dr. Rajesh. C	19-Jan-19	A study on Client Redundant Consideration for Luxury Properties offered by Budget Hotel Aggregator with special reference to OYO Rooms.	SS International Journal of Economics and Management	eISSN:- 22314963, Journal No. 46558
10	Vidyanand Gupta and Prof. Ashwin R John	19-Jan-19	Brand Loyalty with reference to Two Wheeler Segment in India.	SS International Journal of Economics and Management	eISSN:- 22314963, Journal No. 46558
11	Dattathreya and Prof. Siddanagouda Policepatil	19-Jan-19	A study on comparative analysis of the old tax system to the GST in India.	SS International Journal of Economics and Management	eISSN:- 22314963, Journal No. 46558
12	Dayala Hemanth Reddy and M Vishwanathan	19-Feb-19	A study on Impact of Price Movement of Copper Commodity	International Journal of Management, Technology And Engineering	ISSN NO : 2249-7455
13	Joel Johnson Mammen and Dr. Ravi Shankar Bhakat	19-Feb-19	A study on the role of Social Media on Retail Business	International Journal of Management, Technology And Engineering	ISSN NO : 2249-7456
14	M.Tharun Kumar and Ashish Vazirani	19-Feb-19	Traditional retail stores Versus E-commerce business: A time to change	International Journal of Management, Technology And Engineering	ISSN NO : 2249-7457
15	Sumanam Sri Vaishnavi and Ravi Aditya	19-Feb-19	A study on funding and risk analysis of hydroponics: The Case of Pavaki Designs	International Journal of Management, Technology And Engineering	ISSN NO . 2249-7458
16	Addanki Harikiran and Prof. Rahul Sharma	19-Feb-19	Loss of a Competitor in Telecom Sector: An Aircel Story	International Journal of Management, Technology And Engineering	ISSN NO : 2249-7459
17	Abhijith Mohan and Ravi Aditya	19-Feb-19	A Study on Gold Prices Movement and Prediction	International Journal of Management, Technology And Engineering	ISSN NO : 2249-7460
18	Arindam Poddar & Prof. Naveen Pol	20-May-20	Gold Prices Movements and Predictions with Reference to Indian Context	International Journal of Psychosocial Rehabilitation (Scopus Indexed)	Vol. 24, Issue 08, 2020
19	Ashwini & Prof. Girish R	20-May-20	The Effectiveness in Promotional strategy with Special reference to a Premier brand of Jewellers	Purakala Journal (UGC Care List)	ISSN:0971-2143 Vol-31-Issue-32-May-2020

Surinder
Director

Acharya's Bangalore B-School
Lingadeeranahalli, Magadi Road
Bangalore



Acharya Bangalore B-School

(Affiliated to Bangalore University, Approved by AICTE & Recognized by Govt. of Karnataka)
(Re-accredited with NAAC 'A' grade)

Aspire. Accelerate. Achieve.

ADVANCED LEARNERS – TERM PAPER

Andrahalli Main Road, Off Magadi Road, Bengaluru-560091, Karnataka, India
Contact us: 080 23090600, M: +91 91417 07070, admissions@abbs.edu.in
www.abbs.edu.in



ACHARYA BANGALORE B SCHOOL

Andrahalli Main Road, off Magadi Road, Bengaluru – 560 091

A Term Paper Report

On

ECOLOGY, DISTRIBUTION, ENDOPHYTIC POTENTIAL AND BIOLOGICAL APPLICATIONS OF *GYMNEMA SYLVESTRE*: A COMPREHENSIVE REVIEW

Submitted to

Department of Life Sciences

Submitted by,

Ms. K.T.A. Geethma Kalpani Tennakoon

Reg. No.18YUS85008

B.Sc. VI Semester (Batch 2018 -2021)

Under the Guidance of

Keshavamurthy M.

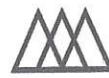
Assistant Professor

Department of Life Sciences

Acharya Bangalore B School

Bengaluru – 560 091

2021



ACHARYA BANGALORE B SCHOOL

DEPARTMENT OF LIFE SCIENCES

Certificate

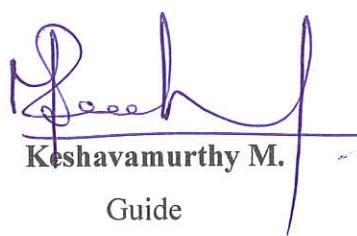
This is to certify that, the term paper work presented in the report entitled "**ECOLOGY, DISTRIBUTION, ENDOPHYTIC POTENTIAL AND BIOLOGICAL APPLICATIONS OF *GYMNEMA SYLVESTRE*: A COMPREHENSIVE REVIEW**" is submitted to the Department of Life Sciences, Acharya Bangalore B School, Bengaluru, Karnataka. The term paper in Life Sciences is a comprehensive review work carried out by **Ms. K.T.A. Geethma Kalpani Tennakoon** (Reg No.18YUS85008) student of B.Sc. VI Semester (Batch 2018 - 2021) during April – August 2021, under the guidance of **Keshavamurthy M.** Assistant Professor, Department of Life Sciences, Acharya Bangalore B School, Bengaluru.



Dr. Shilpasree H. P.

Head of the Department
HOD

Department of Life Sciences
Acharya Bangalore B School
Opposite St. Mira Royal City, Megadi Road
Bengaluru - 560 094



Keshavamurthy M.

Guide



ACHARYA BANGALORE B SCHOOL

Andhrahalli Main Road, Off Magadi Road
Bengaluru – 560091

A Term Paper Report

On

**ASPERGILLUS MEDIATED SYNTHESIS OF SILVER NANOPARTICLES,
MECHANISM, CHARACTERIZATION AND ITS BIOTECHNOLOGICAL
APPLICATIONS : A COMPREHENSIVE REVIEW**

Submitted to

Department of Life Sciences

Submitted by,

Ms. Pragye Sharma

Reg. No.18YUS85016

III B.Sc. VI Semester (Batch 2018 -2021)

Under the Guidance of

Keshavamurthy M.

Assistant Professor

Department of Life Sciences

Acharya Bangalore B School

Bengaluru – 560 091

2021



ACHARYA BANGALORE B SCHOOL

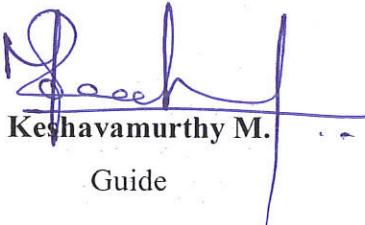
DEPARTMENT OF LIFE SCIENCES

Certificate

This is to certify that, the term paper work presented in the report entitled "**ASPERGILLUS MEDIATED SYNTHESIS OF SILVER NANOPARTICLES, MECHANISM, CHARACTERIZATION AND ITS BIOTECHNOLOGICAL APPLICATIONS :A COMPREHENSIVE REVIEW**" is submitted to the Department of Life Sciences, Acharya Bangalore B School, Bengaluru, Karnataka. The term paper in Life Sciences is a comprehensive review work carried out by **Ms Pragye Sharma** (Reg No.18YUS85016) student of B.Sc. VI Semester (Batch 2018 - 2021) during Apr – Aug 2021, under the guidance of **Keshavamurthy M.** Assistant Professor, Department of Life Sciences, Acharya Bangalore B School, Bengaluru.


Dr. Shilpasree H. P.

HOD
Department of Life Sciences
Acharya Bangalore B School
Andrahalli Main Road, Off Magadi Road
Bengaluru-560 091


Keshavamurthy M.
Guide



ACHARYA BANGALORE B SCHOOL

(No . 3 Andrahalli main road , off Magadi Road , Bengaluru- 560091 , Karnataka)

A Term Paper Report

On

ASPERGILLUS MEDIATED LIPASE PRODUCTION AND ITS INDUSTRIAL APPLICATIONS: A COMPREHENSIVE REVIEW

Submitted to

Department of Life Sciences

Submitted by,

Mr. Thimmaiah C. T.

Reg. No.18YUS85027

B.Sc. VI Semester (Batch 2018 -2021)

Under the Guidance of

Keshavamurthy M.

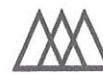
Assistant Professor

Department of Life Sciences

Acharya Bangalore B School

Bengaluru – 560091

2021



ACHARYA BANGALORE B SCHOOL

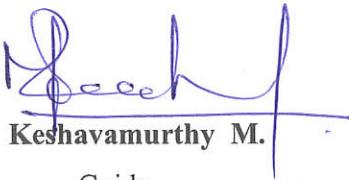
DEPARTMENT OF LIFE SCIENCES

Certificate

This is to certify that, the term paper work presented in the report entitled "**ASPERGILLUS MEDIATED LIPASE PRODUCTION AND ITS INDUSTRIAL APPLICATIONS: A COMPREHENSIVE REVIEW**" is submitted to the Department of Life Sciences, Acharya Bangalore B School, Bengaluru, Karnataka. The term paper in Life Sciences is a comprehensive review work carried out by **Mr. Thimmaiah C. T.** (Reg No.18YUS85027) student of B.Sc. VI Semester (Batch 2018 - 2021) during April – August 2021, under the guidance of **Keshavamurthy M.** Assistant Professor, Department of Life Sciences, Acharya Bangalore B School, Bengaluru.


Dr. Shilpasree H. P.

HOD
Head of the Department
Department of Life Sciences
Acharya Bangalore B School
Andrahalli Main Road, Off Mugad Road
Bengaluru-560 081


Keshavamurthy M.
Guide

Recent Trends and Advances in Medicinal Plants Research

Dr. Prashant Kumar Soni



**P.K. Publishers & Distributors
New Delhi-110053**

Published by :

P.K. Publishers & Distributors

J-231/1A] Gali No. 14, 4th Pushta,

Kartar Nagar, Delhi-110053

Mobile: 9540483251, 79825512449

E-mail: pkpublication@gmail.com

Website: www.pkpublishers.com

Recent Trends and Advances in Medicinal Plants Research

© Author

First Edition 2022

ISBN: 978-81-953735-8-1

All rights reserved no part of this work may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without the prior written permission of the Publisher.

This Book has been published in good faith that the material provided by author is original. Every effort is made to ensure accuracy of material but the publisher and printer will not be held responsible for any inadvertent errors.

PRINTED IN INDIA

Published by P.K Publishers & Distributors Delhi-110053, Laser Type setting at Shahabuddin Computers, Delhi. Printed at Sachin Printers, Delhi- 53

Chapter-11

Pharmacological Potential of Fungal Endophytes in Medicinal Plants of Western Ghats, India

*-Geethma Kalpani Tennakoon K.T.A¹ and Keshavamurthy M^{*1}*

Abstract

Endophytes are microorganisms that live inside plant tissues and have no harmful effects on the host plant. A huge variety of economically relevant endophytic fungi can be found in medicinal plants. These fungi have a significant potential for producing a wide range of new chemicals that could be used in pharmaceutical, agricultural, and other industries. Endophytic fungi lives within plant tissues without causing disease, allowing the host plant to maintain its physiological and ecological characteristics. Endophytic fungi has produced ground-breaking lead compounds like paclitaxel and penicillin, which have paved the door for the discovery of new bioactive chemicals for commercial use. Despite this, only a little amount of research has been done in this rich and distinct domain. Alkaloids, peptides, steroids, terpenoids, phenols, quinones, phenols, and flavonoids are among the bioactive molecules that belong to diverse structural categories were isolated from endophytic fungi. The purpose of this chapter is to highlight the importance of endophytic fungi in the production of novel bioactive compounds with antibacterial, antiviral, antifungal, antiprotozoal, antiparasitic, antioxidant, immunosuppressive, and

¹ Department of Microbiology, Acharya Bangalore B-School, Bengaluru - 560 091, Karnataka, India.

* Assistant Professor, Department of Microbiology, Acharya Bangalore B-School, Bengaluru - 560 091, Karnataka, India. Email: keshava.micro@gmail.com,



Acharya Bangalore B-School

(Affiliated to Bangalore University, Approved by AICTE & Recognized by Govt. of Karnataka)
(Re-accredited with NAAC 'A' grade)

Aspire. Accelerate. Achieve.

SLOW LEARNERS – SELF ASSESSMENT TOOL (SAT)

Andrahalli Main Road, Off Magadi Road, Bengaluru-560091, Karnataka, India
Contact us: 080 23090600, M: +91 91417 07070, admissions@abbs.edu.in
www.abbs.edu.in

Acharya Bangalore B School

Department of Life Science

Self assessment Tool - March 2021

Student Name: Gauthami S

Reg No: 19YUS85003

Course & Semester Bsc Vth Sem

SUBJECT: Biotechnology - VI						Remarks
Marks	2016	2017	2018	2019	2020	
2 Marks			10	5	7	
5 Marks			3	2	3	
10 Marks			2	1	2	
Total Marks			55	30	50	Completed ✓

Faculty Incharge Name & Signature: Dr. Keshavamurthy M

SUBJECT: Microbiology - V						Remarks
Marks	2016	2017	2018	2019	2020	
2 Marks			10	6	8	
5 Marks			4	3	2	
10 Marks			1	2	1	
1. Mark			5	5	6	
Total Marks			55	52	52	Completed ✓

Faculty Incharge Name & Signature: Dr. Keshavamurthy M

SUBJECT: Microbiology VI						Remarks
Marks	2016	2017	2018	2019	2020	
2 Marks			5	5	6	
5 Marks			4	2	4	
10 Marks			1	3	2	
1 Mark			5	5	6	
Total Marks			45	40	58	Completed ✓

Faculty Incharge Name & Signature: Dr. Keshavamurthy M

SUBJECT: Biochemistry - V						Remarks
Marks	2016	2017	2018	2019	2020	
2 Marks			5	4	8	
4 Marks			4	4	8	
10 Marks						
1 Mark						
Total Marks			26.48	42.5	48	24/3/22

Faculty Incharge Name & Signature: Madhukar Rao K L

SUBJECT: Biochemistry VI						Remarks
Marks	2016	2017	2018	2019	2020	
2 Marks			6	10	7	
4 Marks			8	10	9	
10 Marks						
1 Mark						
Total Marks			44	60	50	Completed ✓

Faculty Incharge Name & Signature: Dr. AVINASH K D


Program Coordinator

HOD
Department of Life Sciences
Acharya Bangalore B School
Andrahalli Main Road, Off Magadi Road
Bengaluru-560 091




Principal
Acharya Bangalore B-school
Andrahalli Main Road, off Magadi Road,
Bengaluru-560091



Valued

Food and Dairy Microbiology



1. Blanching : ($\times 2$) repeated

Blanching is used to destroy enzymatic activity in vegetables and some fruits prior to other processing like freezing or dehydration or canning or thermal processing.

2. Hydrogen swell ($\times 3$)

Hydrogen swell is important type of chemical spoilage of canned food. The hydrogen gas formed inside the can, by the action of food acid on iron of can causes the can to swell which is termed as hydrogen swell.

3. Mycotoxin ($\times 3$)

A mycotoxin is a toxic secondary metabolites produced by organism of kingdom fungi and is capable of causing disease and death in both humans and other animals.

4. Canning

Canning is a method of preserving food from spoilage by storing it in containers that are hermetically sealed and then sterilized by heat. and canning is an important, safe method of food preservation if practiced properly.

5. Single cell Protein :

SCP is the term that refers to monoculture of microbial cells or total protein extracted from pure cell culture which

can be used as a human or animal protein supplement.

6. Aflatoxin

Aflatoxin are various poisonous carcinogens and mutagens that are produced by certain molds, particularly *Aspergillus* species which can cause liver damage and cancer.

Aflatoxin can occur in groundnuts, rice, figs & others for dried foods, spices, cocoa beans etc.

7. Single Cell oil (SCO)

SCO is an intracellular product found in globules in some of microorganisms. SCO is mainly synthesized in good amounts by various species of yeasts and fungi. But the production in this manner is usually take place during emergency periods.

8. HACCP

HACCP is a management system in which food safety is addressed through the analysis & addressed through and control of biological, chemical and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of finished product.

Five marks

1. Explain SCO & explain its production

⇒ SCO is intracellular product found in globules in some of MO's. SCO is mainly synthesized in good amount by various species of yeasts and fungi. But the production in this manner is usually takes place during emergency periods.

less information is available on SCO because of patented work and trade secret.

Production: The baker's yeast or beer waste yeast will be recovered after fermentation. The optimal temp employed for production of yeast SCO is 30-35°C with submerged fermentation. The optimal temperature varies with the organism employed. A fairly long period is required for maximal yields of SCO.

2. Describe dehydration as a method of food preservation

⇒ The preservation by controlling the water content of food or removal of water from the food is known as dehydration. All forms of life require water - some more, some less. Bacteria, yeasts and some fungi can grow on surface of substrate lacking an aqueous environment if sufficient humidity is present. The water content of food can be controlling factor of for the inhibition of ^{microbial} growth. This is done by removal of water or by chemically binding the water with water soluble substance. The amount of water that is available for microbial growth can be measured accurately using concept of water activity (a_w)

3. Sources of contamination of food products,

i) From green plants and fruits:

The natural surface flora of plants varies with different plants but usually includes species of *Pseudomonas*, *Flavobacterium*, *Micrococcus*, *Alcaligenes* and lactic acid bacteria.

ii) From Animal

The source of microorganisms include the surface flora, the flora of respiratory tract and flora of gastro-intestinal tract of animal

The natural flora of meat animals usually is not as important as containing members from their intestinal or respiratory tracts. feathers and feet of poultry carry heavy contamination.

4) Describe any two methods of food preservation using high temperature.

⇒ The use of high temperature to preserve food is based on destructive effects of high temp on MO's. With respect to food preservation, there are two categories in common use: Pasteurization and Sterilisation.

Pasteurization, by use of heat implies either destruction of all disease-causing organisms or reduction in number of spoilage organisms in foods.

Sterilisation means destruction of all viable organism as may be measured by appropriate plating or enumerating technique. Canned food are sometimes called 'Commercially Sterile'.

5. Give an explanation of principles of food preservation

⇒ In accomplishing the preservation of foods by various methods the following principles are employed.

i) Prevention or delaying of microbial decomposition

- by keeping out microorganisms.
- by removal of MO's
- by hindering growth and activity of MO's
- by killing MO's

- i) Prevention of self-decomposition of food.
- a) By destruction or inactivation of food enzymes
 - b) Purely by chemical means.
- ii) Prevention of damage by insects, animals, mechanical cause etc.
- 1.) Bread mold
- ⇒ Rhizopus is commonly known as black bread mold. It is a member of Zygomycota and considered the most important species in genus Rhizopus. It is one of most common fungi in world.
- 2.) Thawing -
- Thawing is process of taking a frozen product from frozen to a temperature where there is no residual ice i.e defrosting
- 3.) Whiskers
- When meat is kept at temp near freezing, mold grow slowly sporulation on surface producing white wihile cottony growth.
- 4.) Putrefaction
- Putrefaction is decay of organic matter by action of MO's resulting in production of foul smell.
- 5.) Endotoxins

Endotoxins are lipopolysaccharides found in cell wall of gram-negative bacteria, which can induce inflammation and fever as an immune response in higher organisms.

2018
2021
2017
2019

Microbiology -V

Gauthami.S
Vth Sem

Agricultural and Environmental Microbiology

Valued

1. Soil actinomycetes

- * Actinomycetes are important of soil microorganisms
 - * They help in decomposition of organic matter and also in immobilization of organic matter.
 - * Actinomycetes attacks organic matter at last stage after bacteria and fungi
- Ex: Streptomyces, Actinomyces
- Actinomycetes secretes antibiotics
- Ex: Streptomycin, Rifampicin.

2. Antagonism

- * Antagonism refers to action of any organism that suppresses or interferes with the normal growth and activity of plant pathogen, such as main parts of bacteria or fungi.
- * These organisms can be used for pest control and are referred to as biological control agents.

3. MPN

- Most probable number is a method used to estimate the "concent" of viable microorganisms in a sample by means of replicate liquid broth growth in ten-fold dilutions. It is commonly used in estimating microbial population in soils, waters and agricultural products.

4. Municipal water

A municipal water system is a public water supply network that includes a municipal water treatment plant, storage facilities like water tanks, towers, and reservoirs, and a water pipe network for distribution of treated water to residential and commercial customers.

5. Soil fungi

- Fungi are eukaryotic, achlorophyllous, unicellular or multicellular organisms present in soil.

Ex: Aspergillus, Penicillium, Rhizopus etc.

- Soil fungi is involved in decomposition of organic matter
- They also produce antimicrobial substances i.e antibiotics
- Trichoderma which is present in rhizosphere are helpful in plant growth
- Fungi such as VAM

6. Predation

- Predation is any interaction b/w 2 organism in which one organism (Predator) consumes another organism (prey)
- The pursuit capture and killing of organism for food is called predation. Predator kills and eats prey.

Ex: The shark (Predator) eats small fishes (prey).

7) Allergen

- An allergen is a substance that can cause an allergic reaction.
- In some people, the immune system recognizes allergens as foreign or dangerous. As a result, the immune system reacts by making a type of antibody called IgE to defend against the allergen.

8. Ectomycorrhizae.

Ectomycorrhizae is a form of symbiotic relationship that occurs between a fungal symbiont, or mycobiont, and the roots of various plant species.

9. Phylloplane

- Phylloplane refers to above ground plants.
- The leaf surface is called phylloplane.
- The zone on leaf surface inhibited by microorganisms is called phyllosphere.

10. Soil algae

- Algae are important soil microbes.
- Algae helps in increasing soil fertility.
- Algae helps in aggregation of soil particles, hence porosity of soil increase.
- Algae improves soil texture.
- Algae helps in nitrogen fixation.
Eg: Nostoc, Anabaena etc.
- Algae forms symbiotic association with fungi.

11. Actinomycetes

- Actinomycetes are important of soil microorganism
- They helps in decomposition of organic matter and also immobilization of organic matter.
- Actinomycetes attacks organic matter at last stage after bacteria and fungi.

Ex:- Streptomyces, Actinomyces.

- Actinomycetes secretes antibiotics

Ex:- Streptomycin, Rifampicin.

12. Portable Water

It simply means water that is safe to drink and it is becoming scarcer in the world, comes from surface and ground sources and is treated to levels that that meet state and federal standards for consumption.

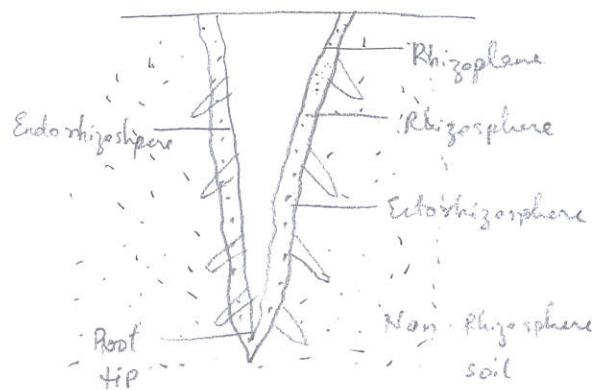
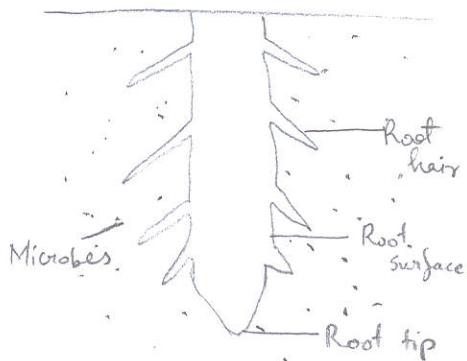
13. Rotorod sampler

The rotorod sampler is one among the device used for air sampling through - impaction. The device consists of a rotating brass rod which has two arms. The rod is 1.6 mm thick, bent to form a vertical V-shaped structure. The distance between the two arms at the base is 5cm and at the top is 6cm. The motor is connected to battery.

~~Sm~~

1. Give an account on Rhizosphere & microbes associated with it.

⇒



- * The term Rhizosphere denotes the area around the root zone of plant
- * It is several millimeter from root surface
- * The term Rhizosphere was given by Hiltner in 1904
- * This a zone of intense microbial activity.
- * The plant body releases a variety of organic and inorganic substances as root exudates.
- * Plant releases carbohydrate such as glucose, fructose, maltose, organic acids such as ascetic acid, propionic acid, etc which will stimulate the growth of microorganism present near the root surface.
- * Rhizosphere is divided into 2 types :
 - i) Endorhizosphere
 - ii) Ectorhizosphere
- * Due to higher microbial activity the population of microorganisms is greater in this zone.

2. Explain commensalism and amensalism with suitable example.

⇒ o Commensalism is a type of interaction b/w 2 species where one species is benefitted and other is neither harm nor benefitted.

Ex: An orchid plant growing as a epiphyte on a mango tree.

o Rumen of cattle where cellulose digesting bacteria are present will going to break down the cellulose component of plant material consumed by cattle.

o Human intestine which harbours a bacterium E. coli does not harm the host but intern is benefitted from the host.

Amensalism is a interaction b/w 2 different species in which one species is harmed and the other is neither benefitted nor harmed.

Ex: The fungi Penicillium produces toxic compound (penicillin) which kills other organism but intern fungi is not affected.

3. Biodegradation of pectin.

⇒ o Pectin is a complex heteropolysaccharide composed of linear chains of L-D-galacturonic acid or other similar sugar derivatives, commonly found in plant cell walls as cementing material.

o Pectin often remains associated with other cell wall polysaccharides like cellulose, hemicellulose and lignin.

o Most of natural pectin is water-soluble or free; however, some forms of non-soluble or bound pectin can also be found.

- The degree of solubility of pectin depends on length of polymer and the presence of methoxy group in structure.
- Because pectin can exist as a thick gel-like structure, the commercial application of pectin is extensive.
- Pectin is one of the few biopolymers that are studied because of its high fermentable dietary fibres.
- Pectin substance are polysaccharide found in constituent of middle lamella and in primary and secondary cell walls of plants.
- They are made up of galacturonic acid unit bound in a long chain.
- The enzymes involved in pectin digestion are collectively known as pectinases.

4. Describe the role of NPV as Biopesticide

⇒ The Nuclear polyhedrosis virus (NPV), part of family of baculoviruses, is a virus affecting insects, predominantly moths and butterflies. It has been used as a pesticide.

- The polyhedral capsid from which the virus gets its name is an extremely stable protein crystal that protects the virus in external environment.
- Rod shaped, double stranded, PDBs $0.2 - 15 \mu\text{m}$ in diameter.
- Highly host specific
- Enters through injection of plant material into insect gut through mouth and cuticle.

5. Describe atmospheric layer

⇒ The earth's atmosphere is a layer of gases surrounding the earth that is retained by the earth's gravity. The mixture of gases is commonly known as AIR.

The atmosphere is divided into regions defined by the maximum and minimum temperature.

The various regions of atmosphere are

- 1) Troposphere
- 2) Stratosphere
- 3) Mesosphere
- 4) Thermosphere
- 5) Ionosphere
- 6) Exosphere

1.) Troposphere

The troposphere is the region nearest to earth's surface.

Temperature decrease with increase in height in troposphere.

It begins at surface and extends between 7 km at poles to 17 km at equator.

2.) Stratosphere

Stratosphere extends from the troposphere 7-17 km range to about 50 km. Here, temperature increase with height. The stratosphere contains Ozone layer.

3.) The Mesosphere

Mesosphere extends from 50km to 80-85km. Here temperature decrease with increase in height. This is the region where most meteors burn up when they reach the atmosphere.

4.) The Thermosphere

The thermosphere extends from 80-85km to 640km. Temperature increases with increase in height.

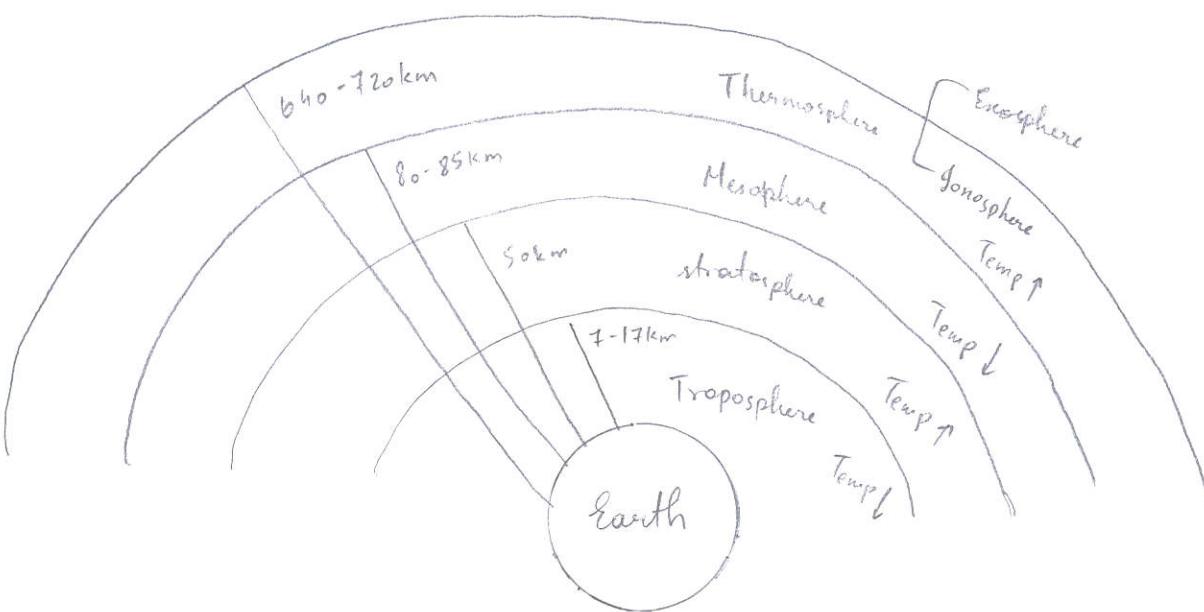
5.) Ionosphere

This is part of atmosphere that is ionised by solar radiation. It is located in thermosphere.

6.) The Exosphere

It extends from 500 - 1000 km upto 10,000 km. It consists of free-moving particles that may migrate into and out of magnetosphere or the solar wind.

Diagrammatic Representation of Atmospheric layer



6. Tomato leaf curl disease.

⇒ The disease has been reported from many parts of world. It is fairly common in winter season in India.

Symptoms: Dwarfing, puckering, twisting and curling towards the dorsal side of leaf; mottling, vein clearing, excessive branching, shortening of entire plant giving it a bushy appearance and partial or complete sterility are characteristic symptoms.

Causal Organism: The disease is caused by Tomato leaf curl virus-bo or tobacco virus-bo which has single stranded DNA as genetic material.

Transmission: It is not seed-borne, but the seeds of freshly infected fruits may be contaminated. The principal insect vector is *Bemisia tabaci* and through parasite like *Cuscuta reflexa*. The disease also spreads through grafting. *Datura* and potato plants acts as a co-lateral host of virus.

7) Source of water pollution.

⇒ There are various classification of water pollution. The two chief source of water pollution can be seen as Point and non-point.

- Point refers to pollutants that belong to single-source. An example of this would be emissions from factories into the water.
- Non-Point on other hand means pollutants emitted from multiple sources. Contaminated water after rains that has travelled through several regions may also be considered as Non-point source of pollution.

Point source pollution refers to contaminants that enter a waterway through a discrete conveyance, such as a pipe or ditch. Examples - discharge from sewage treatment plant, a factory, a city storm drain.

Non-point source pollution refers to diffuse contamination that does not originate from a single discrete source. NPS pollution is often accumulative effect of small amounts of contaminants gathered from a large area.

8. Note on Mycorrhiza.

- Mycorrhiza is a mutualistic association between plant root and fungal epithelia.
- Frank in 1885 gave name 'mycorrhizae' to peculiar association between tree roots and ectomycorrhizal fungi.
- 95% of plants forms mycorrhizae
- It can act as critical linkage between plant roots and soil.
- This association is characterized by movement of plant produced carbon to fungus and fungal acquired nutrients to plant.
- Mycorrhizal fungi is to a key component of rhizosphere are considered to have important role in natural and managed ecosystem.

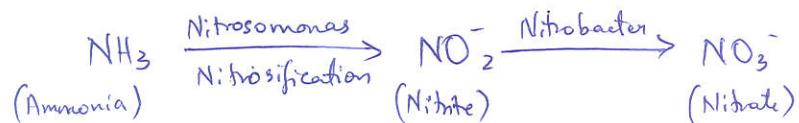
=
10m 1. Define Nutrient cycle? Explain Nitrogen cycle in detail.

⇒ The cyclic movement of nitrogen between living organisms and the environment is called Nitrogen cycle.

- * Nitrogen is an vital chemical element present mainly in the atmosphere and comprises 79%.
 - * There are 4 steps in Nitrogen cycle.
- Nitrogen fixation
 - Nitrification
 - Ammonification
 - Dennitrification.
- i) Nitrogen fixation
- * Nitrogen fixation is the 1st step in Nitrogen cycle where atmospheric nitrogen will be fixed by unicellular organisms called diazotrophs.
- * Certain nitrogen fixing bacteria such as Rhizobium, Azotobacter, Nostoc, Anabena can fix atospheric nitrogen into usable forms (Nitrogenous compounds NH_3 , NO_2 , NO_3^-)

~~ii) Nitification:~~

The conversion of ammonia to Nitrite and ultimately to Nitrate is called Nitrification.



iii) Ammonification

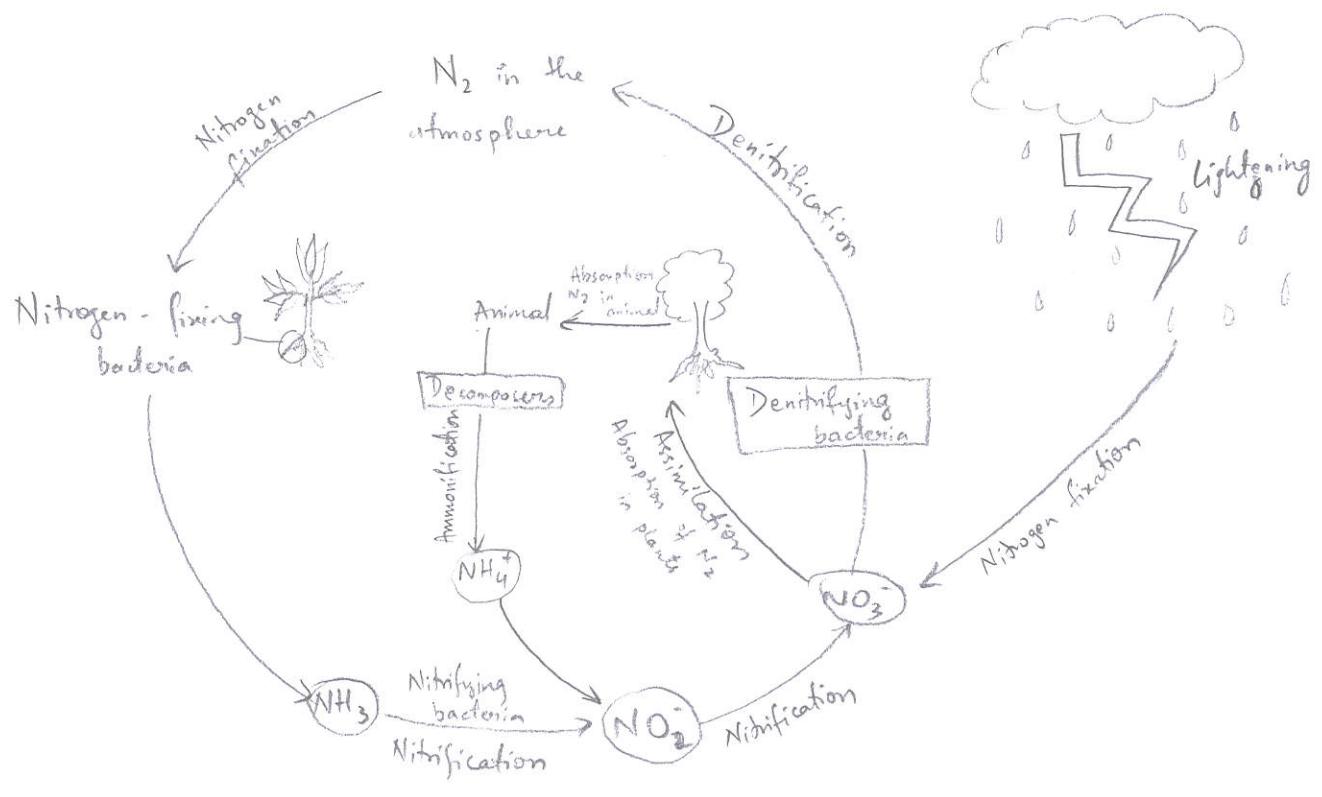
- * The conversion of organic matter which results in production of ammonia is called ammonification
- * Several bacteria and fungi are involved in decomposition of organic matter which ultimately releases ammonia into soil

Eg: Protein $\xrightarrow[\text{decomposer}]{\text{Decomposition}}$ AA (amino acid)

Carbohydrate $\xrightarrow{\text{Amylase}}$ Simple sugar

iv) Denitrification

Denitrification is a process in which the nitrate and nitrite gets reduced to ammonia and then into nitrous acid and finally into molecular N_2 . The reduction of nitrate is carried out by microbial activity of organisms such as *Pseudomonas denitrificans*, *Bacillus subtilis*, *Azotobacter*, *Clostridium* etc.



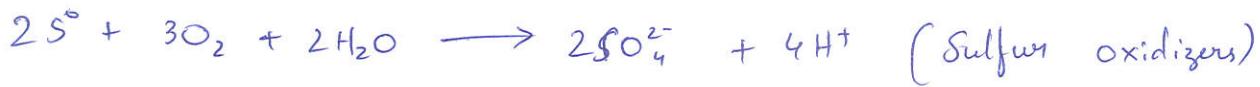
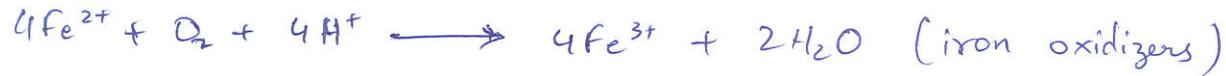
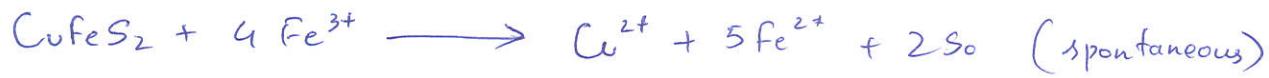
Nitrogen Cycle.

② Bioleaching of copper and iron

⇒ Bioleaching is the simple and effective technology for metal extraction from low grade ores and minerals concentrate by use of microorganism.

Bioleaching of Copper

- Copper Ores : Calcocyprite (CuFeS_2) , Chalcocite Cu_2S , Covellite CuS
- Copper ore is low grade ore.
- In bioleaching of copper, the action of Acidithiobacillus involves the oxidation of CuFeS_2 via generation of ferric ions.



Net Reaction :



Bioleaching of Iron.

Bacteria perform the key reaction of regenerating the major ore oxidizer, mostly ferric ion. This reaction takes place in cell membrane of bacteria.

In the first step, disulfide is spontaneously oxidized to thiosulfate by Ferric iron (Fe^{3+}), which in turn is reduced to give ferrous iron (Fe^{2+});



* In second step Microorganism catalyze the oxidation of ferrous ion and sulphur, to produce ferric iron and sulphuric acid.

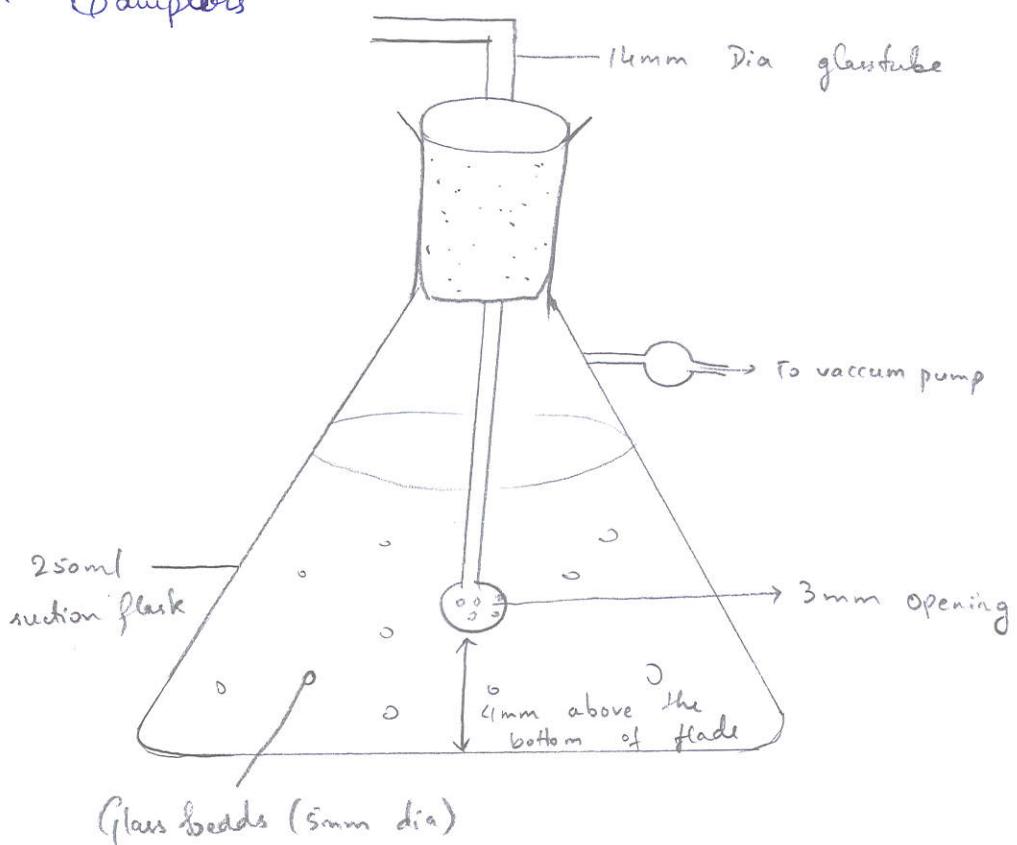


Thiosulphate is also oxidised by bacteria to give sulfate.



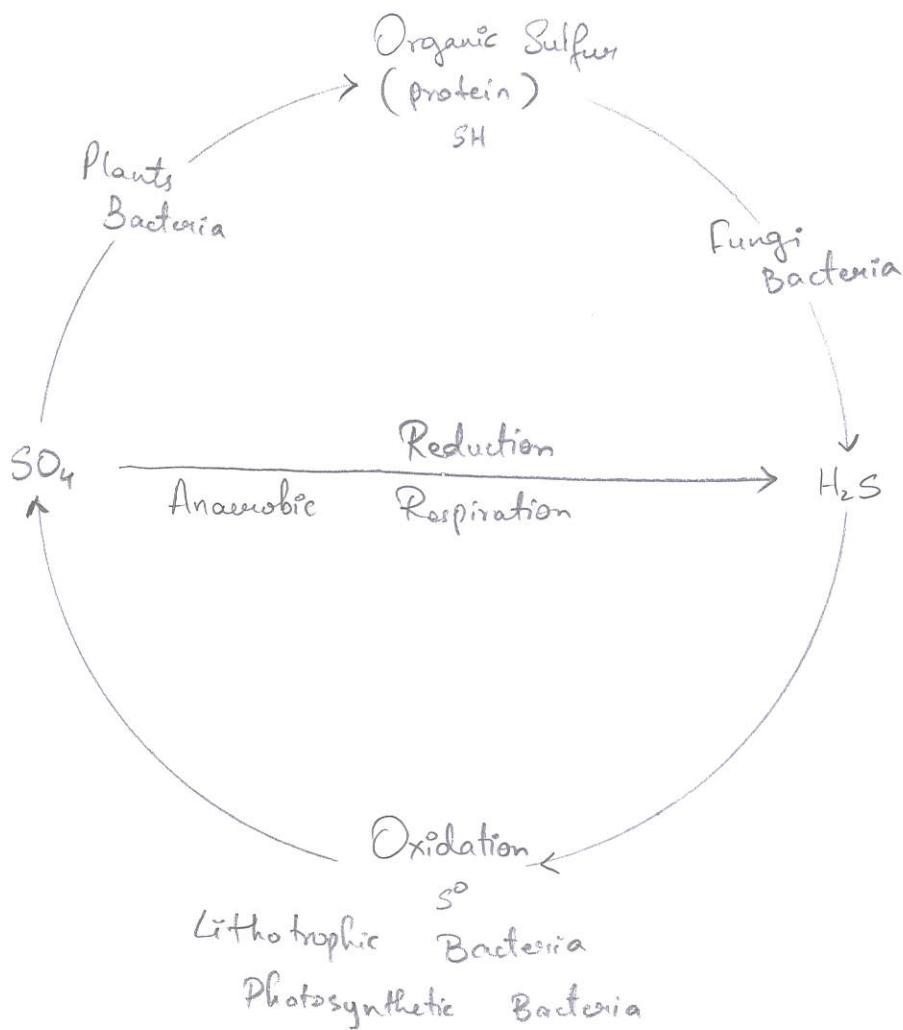
The net products of reaction are soluble ferrous sulfate and sulfuric acid.

Impingement Samplers



1. The device used is called bead bubbler device
2. It consists of 250ml suction flask containing sterile broth medium, glass beads of 5mm dia., glass bubbler of 14mm having 3mm opening at bottom.
3. Air is drawn / sucked via the inlet using vacuum pump and bubbled via liquid
4. The aliquotes of liquids are plated to determine the microbial content of air.

Sulphur cycle



Sulphur is one of the most abundant elements on earth. It is yellow, brittle, tasteless, odourless, non-metal. Sulphur is present in all kinds of proteins. Plants directly absorb sulphur-containing amino acid such as methionine, cysteine, cysteine.

⇒ The process of sulphur cycle is explained below:

- The sulphur is released by weathering of rocks.
- Sulphur comes in contact with air and is converted into sulphates.
- Sulphates are taken up by plants and microbes and are converted into organic forms.
- The organic form of sulphur is then consumed by animals through their food and thus sulphur moves in food chain.
- When the animals die, some of the sulphur is released by decomposition while some enters the tissue of microbes.
- There are several natural sources such as volcanic eruptions, evaporation of water, and breakdown of organic matter in swamps, that release sulphur directly into the atmosphere. This sulphur falls on earth with rainfall.

✓ Valued
PL

Acharya Bangalore B School

Department of Life Science

Self assessment Tool - March 2021

Student Name: Deeksha MK

Reg No: 18YUS85005

Course & Semester 18YUS85005 , B.Sc. II Sem

SUBJECT: Biochemistry VI

Marks	2016	2017	2018	2019	2020	Remarks
2 Marks	16	16	16	16	16	
5 Marks	44	44	44	44	44	
10 Marks						
Total Marks	60	60	60	60	60	

Faculty Incharge Name & Signature:

SUBJECT: Microbiology - I

Marks	2016	2017	2018	2019	2020	Remarks
2 Marks	15	12	17	16	16	
5 Marks	45	38	38	44	44	
10 Marks						
1 Mark						
Total Marks	60	50	55	60	60	

Faculty Incharge Name & Signature:

SUBJECT: Microbiology - VI

Marks	2016	2017	2018	2019	2020	Remarks
2 Marks	16	15	10	16	08	
5 Marks	44	40	30	44	40	
10 Marks						
1 Mark						
Total Marks	60	55	40	60	58	

Faculty Incharge Name & Signature:

SUBJECT: BC - V

Marks	2016	2017	2018	2019	2020	Remarks
2 Marks	14	16	15	12	10	
5 Marks	40	40	35	38	40	
10 Marks						
1 Mark						
Total Marks	54	56	50	50	50	

Faculty Incharge Name & Signature:

SUBJECT: Biotechnology - II & VI

	2016	2017	2018	2019	2020	Remarks
2 Marks	12	10	14	16	16	
5 Marks	38	40	40	44	44	
10 Marks						
1 Mark						
Total Marks	50	50	54	60	60	

Faculty Incharge Name & Signature:

Program Coordinator

Deeksha MK
Mobile: 98800 091
Email: deeksha.m@acharyabangalore.com



Vijayalakshmi
Principal

Acharya Bangalore B-school
Andrahalli Main Road, off Magadi Road,
Bengaluru-560091



Section-A

SELF ASSESSMENT TOOL (SAT)

- I. 1. It is the process used to detect and isolate microorganisms of our choice. Microorganisms can be chosen to find which produces desired products.
2. MTCC - Microbial type culture collection centre, Chandigarh.
3. SSF - Solid state fermentation is a method used to produce metabolites using solid media. It is growth of microorganisms without free-flowing media.
4. Hydroxylation: It is an oxidation reaction in which hydrogen bond (-H) oxidizes into hydroxyl bond (-OH).
5. Mutagenesis: The process by which an organism's genetic code changes, resulting in mutation. A mutation is a permanent change in genetic material.

Section-B

II. 1. Mushroom cultivation:

Cultivation of mushroom involves 5 steps:

1. Mushroom spawn preparation:
Spawn is prepared. It is a live fungal culture grown as substrate to grow mushrooms.
2. Compost preparation: It is an artificial growth medium prepared to provide essentials necessary for growth.
3. Spawning: The spawn, mushroom seeds, are mixed with compost in a sterile condition.

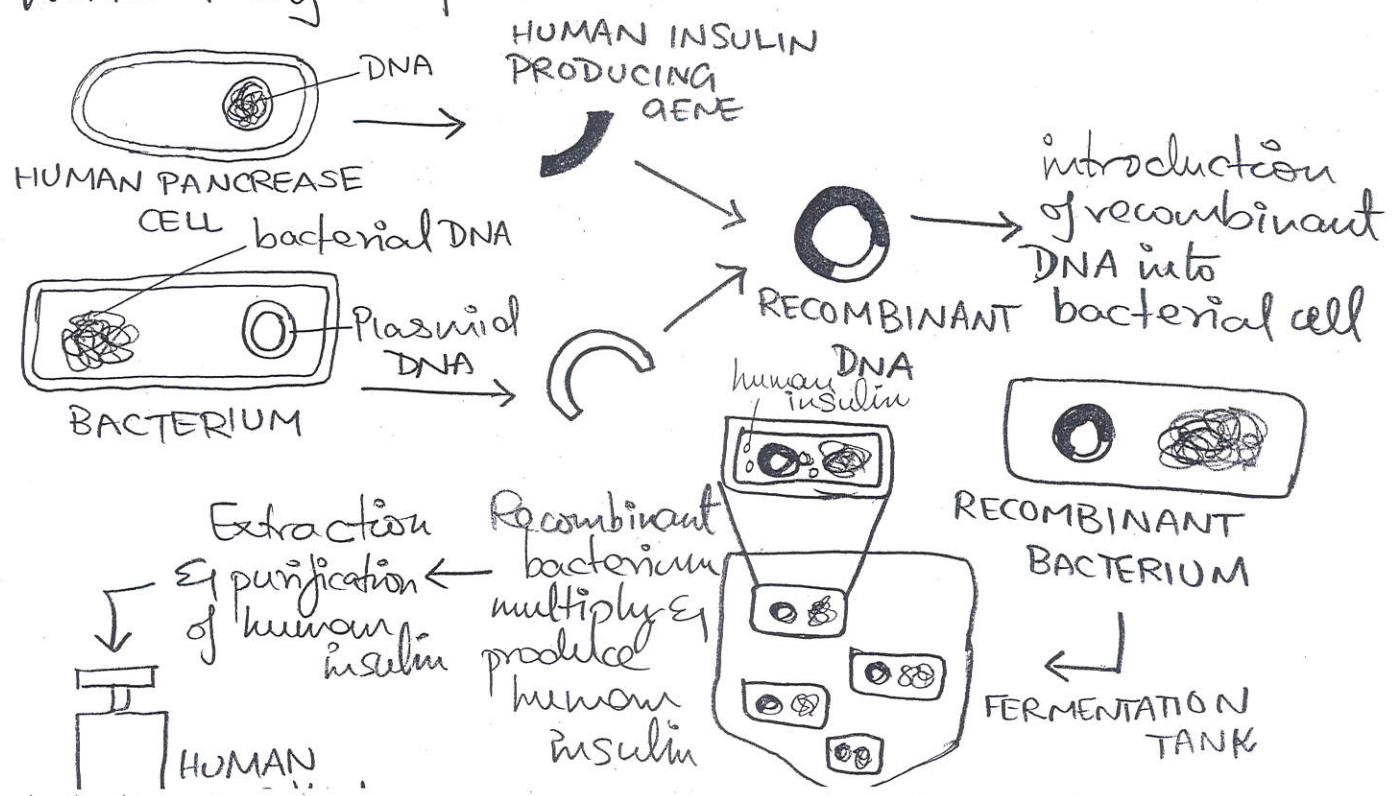


4. Casing : It is the soil which is made to grow mushrooms. It provides conditions required for the mushroom to grow majorly. A thick coating of this soil is spread evenly over the layer of compost and spawn. Formalin solution is sprayed with water to keep them moist and ventilated. (2)

5. Harvesting : The mushrooms start to grow after 10-12 day and the crop is harvested in 2 months. For the growth water is sprayed and the gaps are filled with casing material without disturbing the earlier layer of casing soil. They are harvested before the growth of gills, which will affect the quality of mushroom.

2. Insulin production :

Insulin is a protein which contains two chains. A chain contains 21 amino acids & B-chain contains 30 amino acids and are linked by sulphur atoms.

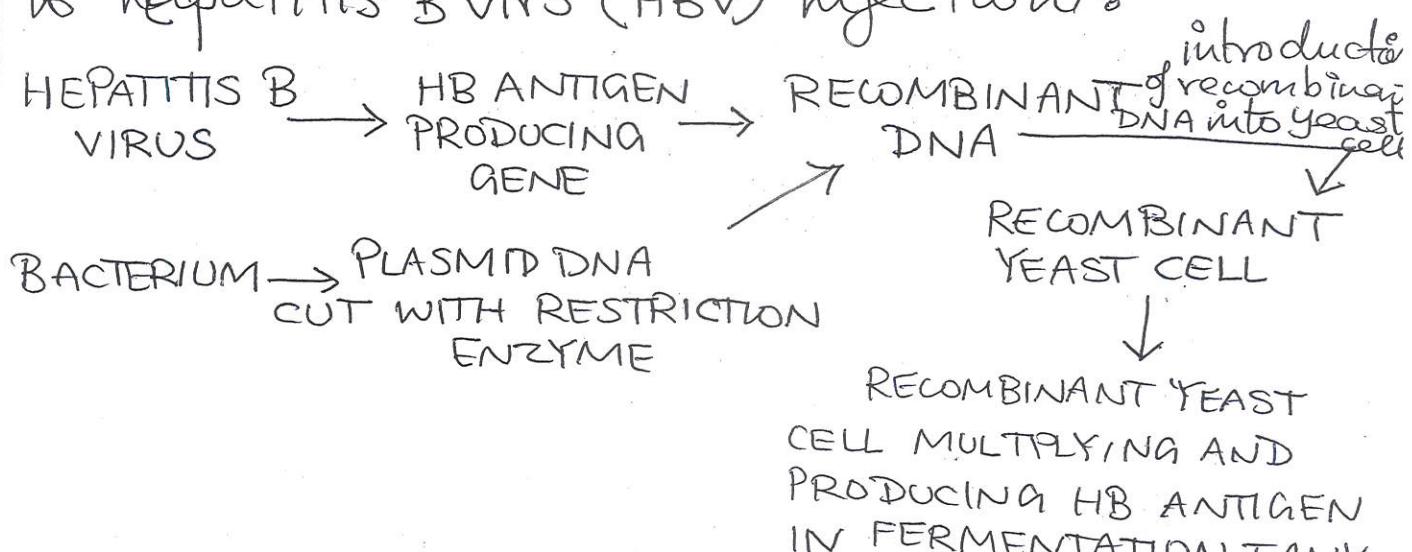


Section-C :

(3)

III.3. A vaccine is a substance that is introduced into the body to stimulate the body's immune response. Usually inactive microbes are injected into a person to develop the immunity against that microbe.

The vaccine contains one of the viral envelope proteins, Hepatitis B surface antigen (HBsAg). It is produced by yeast cell into which the gene for HBsAg has been inserted. Afterward an immune system antibody to HBsAg is established in the blood stream. The antibody is known as anti-HBs. This antibody and immune system memory then provide immunity to hepatitis B virus (HBV) injection.



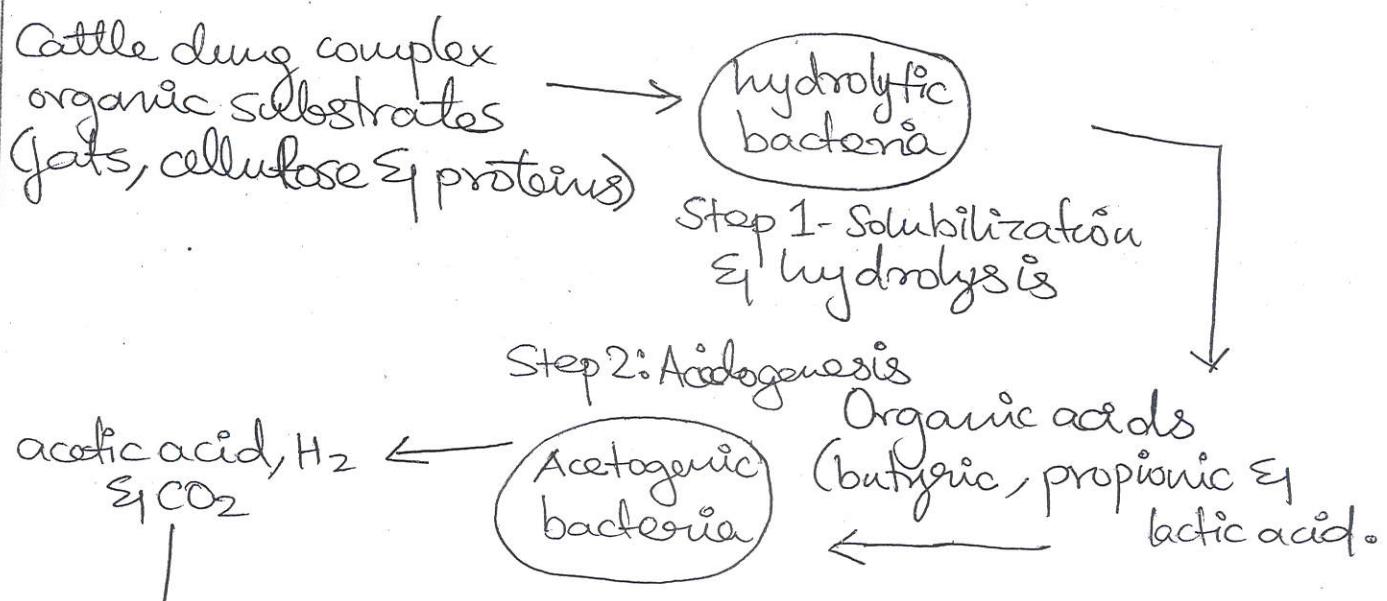
HB VACCINE ← extraction & purification of HB vaccine

1. HB's antigen producing gene is isolated from the HB virus by normal isolation processes. cell lysis, protein denaturation.

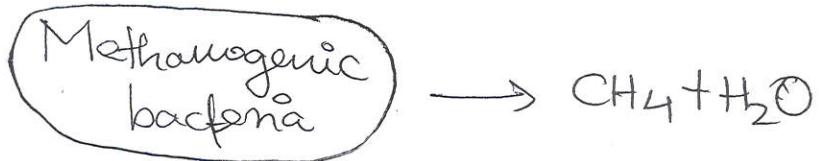
- precipitation, centrifugation & drying. ④
2. A plasmid DNA is extracted from a bacterium- *E. coli* and is cut with RE Eco-RI forming the plasmid vector.
 3. The isolated HB's antigen producing gene is located and inserted into the bacterial plasmid vector on forming the recombinant DNA.
 4. This recombinant DNA, containing the target gene, is introduced into a yeast cell forming the recombinant yeast cell.
 5. The recombinant yeast cell multiplies in the fermentation tank and produces the HB's antigens.
 6. After 48 hours, yeast cells are ruptured to free HB's Ag. The mixture is processed for extraction.
 7. The HB's antigens are purified.
 8. HB's Ag are combined with preserving agent and other ingredients and bottled. And it is ready for vaccination in humans.
1. Bio-gas: The gas produced by anaerobic oxidation of cow dung by enzyme action of microorganisms is known as biogas.

Bio gas plant consists of the following parts: ⑤ biomass accumulator tank, hydrolysis reactor, methane tank in which the digestion take place, gas tank with gas cleaning system, cogeneration unit.

1. Mixing tank present above the ground level.
2. Inlet chamber: The mixing tank opens underground into a sloping inlet chamber.
3. Digester: The inlet chamber opens from below into the digester which is a huge tank with a dome like ceiling. The ceiling of the digester has an outlet with a valve for the supply of bio gass.
4. Outlet chamber: The digester opens from below into an outlet chamber.
5. Overflow tank: The outlet chamber opens from the top into a small overflow tank.



6



Step 3: Methano-
genesis

RAMDEV R

BBA - AVIATION

Acharya Bangalore B School
Department of Aviation Management -UG
2018-2021

SELF ASSESSMENT TOOL

Subject-

SAT Tool

Units	1	2	3	4	5
2 Marks	3	3	4	8	6
6 Marks	2	2	12	10	14
14 Marks	1	1	21	24	18

Total Marks obtained -

37 42 38

Subject-

SAT Tool

Units	1	2	3	4	5
2 Marks	3	3	6	6	6
6 Marks	2	2	18	14	12
14 Marks	1	1	14	18	16

Total Marks obtained -

38 38 34

Subject-

SAT Tool

Units	1	2	3	4	5
2 Marks	3	3	2	4	6
6 Marks	2	2	16	12	12
14 Marks	1	1	22	18	22

Total Marks obtained -

40 34 40

Subject-

SAT Tool

Units	1	2	3	4	5
2 Marks	3	3	8	8	8
6 Marks	2	2	14	14	12
14 Marks	1	1	28	18	20

Total Marks obtained -

48 40 40

Subject-

SAT Tool

Units	1	2	3	4	5
2 Marks	3	3	6	4	8
6 Marks	2	2	12	14	18
14 Marks	1	1	22	96	20

Total Marks obtained -

40 44 46

ASST PROF JOSWA STALIN

ASST PROF ARJUN SHEKA

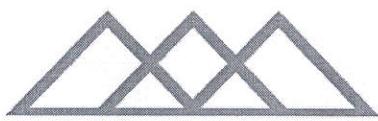
ASST PROF JANAKI BAI

ASST PROF SWETHA VARDHAN RAO



Gunt
13/3/21

ACHARYA BANGALORE BUSINESS SCHOOL



DEPARTMENT OF BBA AVIATION

STUDENT NAME : RAM DEV
SECTION : Vth SEM BBA Aviation
DATE OF SUBMISSION : 17.03.2021
SUBMITTED TO FACULTY : ~~SIR~~ ARJUN SIR
SUBJECT : ATSS

STUDENT SIGNATURE:

FACULTY SIGNATURE:

MARKS OBTAINED

* AIR TRANSPORTATION SAFETY AND SECURITY

Q) What are metal detectors? Briefly Explain?

Ans - A metal detector is an electronic device that detects the metal nearby. Metal detectors are useful in the finding metal inclusions hidden within objects or objects buried underground. They often consists of a handheld unit with a Sensor Probe which can be swept over the ground or other objects. If the Sensor comes near a metal object this indicates by changing tone in earphone or a needle moving on a indicator. Usually the device give some indicators of distance. The closer the metal is, the higher the tone in the earphone. Earphones are stationary walls through metal detectors used for security screening at access points in prisons, court houses and Airport to detect concealed metals, weapons on a person's body.



L

Ramdev R

BBA - AVIATION

* AVIATION LAW AND AIRCRAFTS RULES AND REGULATIONS

1) What is DGCA as regulatory authority? What are the functions?

Ans - Functions

- * Registration of civil Aircraft
- * formulation of standards of air worthiness for civil aircraft registered in India and grant of Certificates of Airworthiness to such Aircraft.
- * Licensing of pilots, aircraft maintenance engineers & flight operators and inducting examination checks for that purpose.
- * Licensing of Air traffic controllers
- * Certification of aerodromes and CNS/ATM facilities
- * Granting of Air operators Certification to Indian carriers and regulation of Air transport Services operating within / over / to India by Indian & foreign operators including clearance of



Scheduled & non-scheduled flight of such operators

- * Conducting investigation on accidents / incidents & taking accident prevention measures including formulation of implementation of Safety Aviation Management Programmes.



* Air Transportation and Safety and Security

1. What are metal detectors? Briefly explain.

Ans:-

A metal detector is an electronic instrument that detects the presence of metal near by metal detector. Metal detectors are useful for finding metal inclusions hidden within objects, or metal objects buried underground. They often consist of a handheld unit with a sensor probe which can be swept over the ground or other objects. If the sensor comes near a piece of metal this is indicated by a changing tone in earphones, or a needle moving on an indicator. Usually the device gives some indication of distance the closer the metal is the higher the needle goes. Another common type are stationary walk-through metal detectors used for security screening at access points in prisons, courthouses, and airports to detect concealed metal weapons on a person's body.



Acquisition of Electronic Components
And Assembly Workshops
Bengaluru-200001
Inauguration
Date: 10.10.2001
By: Mr. M. S. Raghavendra
I/II/III/IV/

* Aviation Law & Aircraft Rules and Regulations

1. What is DGCA Regulated Authority & what are functions

Ans:-

- Registration of civil aircraft
- Formulation of standards of airworthiness for civil aircraft registered in India and grant of certificates of airworthiness to such aircraft
- Licensing of pilots, aircraft maintenance engineers and flight engineers (and conducting examinations and checks for that purpose)
- Licensing of Air Traffic controllers
- Certification of aerodromes and QNEs / ATC facilities
- Awarding of Air Operator's Certificates to Indian carriers and regulation of Air Transport Services operating to/from/within/over India by Indian scheduled and non-scheduled operators including clearance of operators.



Mohnd Hassan



Raghavendra D
19YUC41028
vSemB.com



Acharya Bangalore B-School

Department of Commerce-UG

2019-2022

SELF ASSESSMENT TOOL

Subject: Income Tax

Units	2016	2017	2018	2019	2020
2 Marks	10	8	8	8	10
6 Marks	18	18	18	18	18
14 Marks	42	42	42	42	42
	68	68	68	70	
	70	70	70	70	70
	40				

Subject: Goods & Service Tax

Units	2016	2017	2018	2019	2020
2 Marks	10	10	10	8	8
6 Marks	18	18	18	18	18
14 Marks	42	42	42	42	42
	70	70	70	68	68
	70	70	70	70	70

Subject: IFRS

Units	2016	2017	2018	2019	2020
2 Marks	10	10	10	10	8
6 Marks	18	18	18	18	18
14 Marks	42	42	42	42	42
	70	70	70	70	68
	70	70	70	70	70

Development
Subject: Entrepreneurial

Subject: Entrepreneurial

Units	2016	2017	2018	2019	2020
2 Marks	10	8	10	8	10
6 Marks	18	18	18	18	18
14 Marks	42	42	42	42	42
	70	68	70	68	70
	70	70	70	70	70

Subject: Advanced Accounting

Units	2016	2017	2018	2019	2020
2 Marks	10	10	10	10	8
6 Marks	18	18	18	18	18
14 Marks	42	42	42	42	42
	70	70	70	70	68
	70	70	70	70	70

Subject: Costing methods

Units	2016	2017	2018	2019	2020
2 Marks	10	8	10	8	10
6 Marks	18	18	18	18	18
14 Marks	42	42	42	42	42
	70	68	70	68	70
	70	70	70	70	70

Subject Name	Subject Faculty	Signature
Income Tax-1	Mr. Ashoka G	
Goods & Service Tax	Mrs. S. Kavitha	
International Financial reporting Standards	Mrs. S. Kavitha	
Costing Methods	Mrs. Madhu Shree	
Advanced Accounting	Mrs. Madhu Shree	
Entrepreneurial development	Mrs. Madhumathi K	

Ojayale



Acharya Bangalore B-School
Anjali Main Road, off Magadi Road,
Bengaluru, 560091

Acharya Bangalore B School

Department of Computer Science - BCA

Self assessment Tool - March 2022

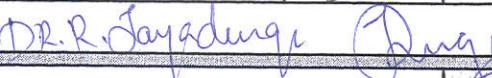
Student Name: Manoj.R

Reg No: 2DYUSB7018

Course & Semester BCA . 3rd Sem

SUBJECT: OS

	2017	2018	2019	2020	2021	Remarks
2 Marks	17	18	18		18	
5 Marks	18	17	16		17	
15 Marks	35	32	33		32	
10 Marks	14	15	15		15	
Total Marks	84	82	82		82	

Faculty Incharge Name & Signature: DR.R.Sayadungo 

SUBJECT:

	2017	2018	2019	2020	2021	Remarks
2 Marks						
5 Marks						
15 Marks						
10 Marks						
Total Marks						

Faculty Incharge Name & Signature:

SUBJECT:

	2017	2018	2019	2020	2021	Remarks
2 Marks						
5 Marks						
15 Marks						
10 Marks						
Total Marks						

Faculty Incharge Name & Signature:

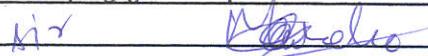
SUBJECT: C++

	2016	2017	2018	2019	2020	Remarks
2 Marks	18	17	15	17		
10 Marks	45	42	45	46		
Total Marks	63	59	60	63		Need to work hard

Faculty Incharge Name & Signature: Mr. Krishna 

SUBJECT: Accounts

	2017	2018	2019	2020	2021	Remarks
2 Marks	18	20			20	
10 Marks	40	40			45	
Total Marks	58	60			65	Work hard

Faculty Incharge Name & Signature: Maholi sir 

Program Coordinator

Department of Computer Sciences
Acharya's Bangalore B-School
Bangalore-560091



Principal

Principal
Acharya Bangalore B-school
Andrahalli Main Road off Magadi Road,
Bengaluru-560091





Acharya Bangalore B-School
Department of Computer Science- BCA
Batch -2020-2023 (March 2022)

CLASS: BCA 3rd SEM

Sl.No	Reg No	Student Name	SAT	QP Solved	Remarks
1	20YUSB7001	Abdul Vajid M.P	✓		Good improvement
2	20YUSB7002	Abdulla Ashraf .P	✓		"
3	20YUSB7003	Aditya Kumar Jha	✓		"
4	20YUSB7004	Ahmed Shah .N	✓		"
5	20YUSB7005	Ahsan Allaj P.K	✓		Good improvement
6	20YUSB7006	Akshay Chandra	✓		"
7	20YUSB7007	Arjun .K.J	✓		"
8	20YUSB7008	Bharath .N	✓		"
9	20YUSB7009	Chandan Gowda C	✓		"
10	20YUSB7010	Chandana R M	✓		"
11	20YUSB7011	Chandana .S	✓		"
12	20YUSB7012	Devaliya Hardik Hiteshbhai	✓		"
13	20YUSB7013	Ganta Vamsi		✓	Has to improve
14	20YUSB7014	Gaurav .V.R	✓		
15	20YUSB7015	Hrushikesh A Menon		✓	Work hard
16	20YUSB7016	Jibinshan V.P	✓		-
17	20YUSB7017	Keerthana .R	✓		-
18	20YUSB7018	Manoj .R	✓		-
19	20YUSB7019	Manu Bharath .M	✓		-
20	20YUSB7020	Mardiya Mihir Nileshbhai	✓		-
21	20YUSB7021	Midhun Subhash .N.K	✓		-
22	20YUSB7022	Minnas T.M	✓		-
23	20YUSB7023	Mishal N.C	✓		-
24	20YUSB7024	Mohammed Thanseeh K.M	✓		-
25	20YUSB7025	Mohammed Hisham	✓		-
26	20YUSB7026	Muhammed Hisham .N.M	✓		-
27	20YUSB7027	Mohammed Shinan K.P	✓		-
28	20YUSB7028	Monika	✓		-
29	20YUSB7029	Muhammed Danish	✓		Improvement reqd
30	20YUSB7031	N. Sai Chandan	✓		"
31	20YUSB7032	Nivedya Anoop	✓		"
32	20YUSB7033	Patel Biraj Tushar	✓		"
33	20YUSB7034	Paun Vaibhav Kanakbhai	✓		"
34	20YUSB7035	Prajwal .K.S	✓		"
35	20YUSB7036	Rajeev Saseendran	✓		"
36	20YUSB7037	Rakshith .M	✓		"
37	20YUSB7038	Ranjith Chhetri	✓		"
38	20YUSB7039	Rayavarapu Gopi Krishna	✓		"



39	20YUSB7040	Rohith S Maane		✓		
40	20YUSB7041	Saumya Kumari			✓	
41	20YUSB7042	Shah Het Bhaveshbhai			✓	
42	20YUSB7043	Shameensha			✓	
43	20YUSB7044	Shrivatsa A Kantanavar			✓	
44	20YUSB7045	Sinchana .H.M		✓		
		Sirohi Mayank Sensarpal Singh		✓		
45	20YUSB7046	Soma Navysree		✓		
46	20YUSB7047	Sri Balaji K.E		✓		
48	20YUSB7049	Srinith .R.K		✓		
49	20YUSB7050	Suchithra.K.C		✓		
50	20YUSB7051	Sudipta Mukherjee		✓		
51	20YUSB7052	Sufail P K			✓	
52	20YUSB7053	Thanmay Nath .K			✓	
53	20YUSB7054	Ujjawal Kumar			✓	
54	20YUSB7055	Vasa Neer Jaykumar			✓	
55	20YUSB7056	Vignesh .N		✓		
56	20YUSB7057	Vivek Mitra			✓	
Total No of Students					✓	

Faculty Coordinator

Program Coordinator

HEAD OF THE DEPARTMENT
 Department of Computer Sciences
 Acharya's Bangalore B -School
 Bangalore-560 091



Acharya Bangalore B School

Department of Computer Science - BCA

Self assessment Tool - March 2022

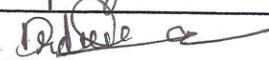
Student Name: Chandana RM

Reg No: 20YUSB7010

Course & Semester BCA 3rd sem

SUBJECT: Operating System

	2017	2018	2019	2020	2021	Remarks
2 Marks	18	18			18	Good but you can improve to score more grade
5 Marks	20	20			20	
15 Marks	40	40			40	
10 Marks	05	05			05	
Total Marks	83	83			83	

Faculty Incharge Name & Signature: Dr Jayadurga Maiam 

SUBJECT:

	2017	2018	2019	2020	2021	Remarks
2 Marks						Good attempt
5 Marks						
15 Marks						
10 Marks						
Total Marks						

Faculty Incharge Name & Signature:

SUBJECT:

	2017	2018	2019	2020	2021	Remarks
2 Marks						Good attempt
5 Marks						
15 Marks						
10 Marks						
Total Marks						

Faculty Incharge Name & Signature:

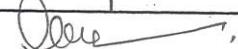
SUBJECT: C++

	2016	2017	2018	2019	2020	Remarks
2 Marks	16	18			18	Good attempt
10 Marks	40	40			40	
Total Marks	56	58			58	

Faculty Incharge Name & Signature: 

SUBJECT: Accounting and financial management

	2017	2018	2019	2020	2021	Remarks
2 Marks	18	18			18	Need to work hard
10 Marks	40	40			40	
Total Marks	58	58			58	

Faculty Incharge Name & Signature: 

Program Coordinator

HEAD OF THE DEPARTMENT
Department of Computer Sciences
Acharya's Bangalore B-School
Bangalore-560 091




Principal

Principal
Acharya Bangalore B-school
Andrahalli Main Road, off Magadi Road,
Bengaluru-560091

SAT

Manoj R
BCA 3rd sem
20Y USB 7018

C++ Question paper - 2021

I 2m

i) write the basic structure of c++ program?

#include <iostream.h>

void main()

cout << "Hello World" << endl;

}

4) what is the significance of scope resolution in c++
A) the scope resolution is used to get hidden names to variable scope you can still use them

5) what is inline function? how it is defined

A) A member function that is defined inside its class
number but is called inline function
It is defined as one line using keyword
inline

6) Explain this pointer?

A) This pointer is a pointer which has the address of current object when the object is created

7) Which are the keyword

A) try
throw
catch

Exceptional handling



II 10m

- 1) a) Explain the characteristics of OOPS.
- A. * Emphasis is on data rather than procedure.
* Programs are divided into what are known object
* Data structures are designed such they characterize
the objects
* Function that operates on data of an object in DS
* Objects may communicate with each other through
functions
* Follows bottom up approach in program design

b) Parameterized manip :-

These are known as 'Non-argument manipulators'.
This manipulators require iostream header

Eg:-

setbase(b) - Set number base to b

setfill(f) - Sets fill character to f

setprecision(n) - Sets floating-point precision to int n

setw(n) - Set field width to integer n

Non parameterized manip :-

These are known as 'Argumented' manipulators.
This manip require iostream header

Eg:-

dec - Tells subsequent decimal representation

endl - Goes to next line

hex - Tells hexadecimal representation



a) D/B constructor

- * Constructor helps to initialize the object of class
- * Constructor can either accept arguments or not
- * A constructor is called when instance of object is created
- * Constructor is used to allocate memory to an instance
- * Constructor can be overloaded

Destructor.

- * Destructors are used to destroy the instances
- * While it can't have any arguments
- * It is called when object of class is freed or deleted
- * While it is used to deallocate memory of instances
- * It can't be overloaded

b) Copy constructor ? with example

- * A copy constructor is used to copy the values of the data members of one object to the data members of another object

But

```
#include <iostream.h>
```

```
#include <conio.h>
```

```
#include class Bank
```

```
{
```

```
private : int acno ;
```

```
float Bal ;
```

```
public : Bank ( ) { }
```

```
Bank ( int a )
```

```
{
```

```
acno = a ;
```

```
bal = 1000 ;
```

```
}
```

```
Bank ( bank & b ) ,
```



```
void main()
{
    clrscr();
    Bank b1;
    Bank b2(10);
    Bank b3(b1);
    Bank b4 = b2;
    Bank b5;
    Bank b5 = b2;
    getch();
}
```

- 5) what are access specifiers? Explain with eg.
- A:- Access specifiers helps in controlling the access of data members associated with a class.
- Private
 - Public
 - Protected
 - Private :- the class members written under this section are accessible by class member functions or friend function.
 - Protected :- this is used only when inheritance is involved
 - Public :- The class members written under this section are accessible outside the class



Eg:- class class name
 {

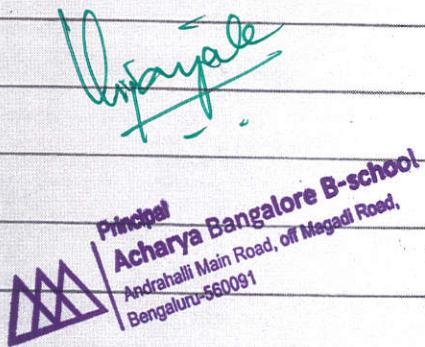
 Public: datamem;

 Private: data mem;

 Protected: data mem;

3.

[Signature]
HEAD OF THE DEPARTMENT
Department of Computer Sciences
Acharya's Bangalore B-School
Bangalore-560 091



Object Oriented programming using C++ [2016]

Section-A

I Answer any ten:

1. State ~~3~~ difference b/w C and C++

C

- * top-down approach is followed
- * focus is on algorithm and control flow
- * reduced data security and integrity

C++

- * Bottom up approach is followed
- * focus is on object model
- * increased data security and integrity

2. Why do we require const qualifier? Give example.

Define a new constant of a particular type and supply its value

Eg:- const double PI = 3.142;

3. What is scope resolution operator?

The symbol :: is scope resolution operator. When local variable and global variable are having same name, local variable gets the priority

4. What is default constructor?

Also called empty constructor which has no arguments and it is automatically called when we creates the object of class



5 What is the role of EOF?

The eof() method of ios class in C++ is used to check if the stream has raised any EOF error. It means that this fn will check if this stream has its eofbit set.

6 What is class template?

Templates in C++ is defined as a blueprint or formula for creating a generic class or a function.

7 Explain Dynamic Binding.

Dynamic binding is the process of linking of a function call to the actual code of the function at run time. The actual code to be executed is not known to the compiler until run time.

8 Define stream.

The stream is a flow of information from a source to a destination.

9 Define exceptional handling.

The purpose is to provide mean to detect and report an exceptional circumstance or condition, so that appropriate action can be taken against it.

10 Define pure virtual function

It is a virtual function with no body. It won't have implementation and declaration. A pure function is declared by assigning 0 in declaration.



Section - B

II Answer any five questions:

18. a) Explain the characteristics of oops

* Object :- An object is an abstract representation of real world entity that has a unique identity, embedded properties and ability to interact with other objects and itself.

* class :- the class contain data and functions bundled together under a unit. It is collection of similar objects

Class = Data members + Member functions

* Data abstraction : Refers to providing only essential information to the outside world and hiding their background details, i.e. to present the needed information in program without presenting the details

* Encapsulation : the wrapping up of data and functions into a single unit is called encapsulation. maintains integrity of object

* Inheritance : It is the process by which object of one class acquire the properties of object of another class. Increases code reusability

* Reusability : Reuseage of structure without changing the existing one but adding new feature characteristics to it. It provided the idea of reusability



- * **Polymorphism**: Ability to exist in more than one form. It may exhibit different behaviour in different instances.
- * **Dynamic binding**: The matching of function call with the correct function definition happens at run time. It is achieved using virtual functions.

b) Describe any three manipulators

→ the manipulator endl.

It is a special C++ notation that represents the important concept of beginning a new line. Inserting endl into the output stream causes the screen cursor to move to the beginning of next line.

Syntax: << endl;

e.g.: cout << 123 << endl;

→ the manipulator setw()

It sets the minimum field width in the output. It causes the number (or string) that follows it in the stream to be printed within a field n characters wide, where n is the argument to setw(n). The value is right justified.

Syntax: setw(n);

cout << setw(5) << 123 << endl;



→ the manipulator setfill()

It is used to specify the character for output padding. If we do not specify the setfill, then default behaviour for padding is white space.

```
cout << setw(5) << setfill('*') << n;
```

* * * * 123.

Q12 What are default arguments? How they are passed to functions?

a) A default argument is a value provided in a function declaration that is automatically assigned by the compiler if the caller of the function don't provide a value for the argument with a default value.

Eg:- printvalues(int =10, int =20 ,int =30);

function call

output

printvalues(1,2,3); values=1.2.3 - the default agreements will not apply to this call as we pass the values explicitly for all the arguments

printvalues(1,2); values - 1 2 30 - Since we are not passing third argument, the default value for third argument 30 is considered.

printvalues(); values - 1 20 30 - Since we are not passing second and third argument, the default value for second and third arguments 20 and 30 are considered.

b. Write a program to show returning current object using 'this' pointer?

```
#include<iostream.h>
```

```
#include<conio.h>
```

```
#include<iomanip.h>
```

class Rectangle



```

class Rectangle {
private: int length;
        int width;
public: void setlength (int len)
{
    this->length = len;
}
int getlength ()
{
    return this->length;
}
void setwidth (int w)
{
    width = w;
}
int getwidth ()
{
    return width;
}

```

Output:

Rectangle is 20 feet long and 10 feet wide

```

void main ()
{
    Rectangle Rect;
    cout << "Rectangle is ";
    Rect.setlength (20);
    Rect.setwidth (10);
    cout << " " << Rect.getlength ();
    cout << " and " << Rect.getwidth ();
    cout << " " << endl;
    getch ();
}

```



Q
a)

Explain different types of polymorphism.

Polymorphism is one of two types of polymorphism

→ Compile time polymorphism

- The decision is made at compile time
- It is to be called is decided at compile time only
- Function overloading and operator overloading are examples

- Compile time polymorphism is achieved through function or operator overloading where the compiler knows which overloaded function or operator it is going to call.
- If it will give an error if there are no functions that match method to call at compile time and it will give an error if there are called as compile time

→ Runtime polymorphism

- the decision is made at runtime during execution time
- which funtn is to be called at runtime only
- Virtual function is an example of this
- functions are overridden i.e., same fn with same number of input parameters
- Also known as late binding or dynamic binding

b) Write a program to swap two nos using friend function

```
#include <iostream.h>
```

```
#include <conio.h>
```

```
#include <iomanip.h>
```

```
class sample
```

```
{
```

```
private : int x,y;
```

```
public : void setdata (int a,int b)
```

```
{
```

```
    x=a;
```

```
    y=b;
```

```
}
```

```
void showdata()
```

```
{
```



```
cout << "x = " << x << "y = " << y;
```

}

```
friend void swap (sample s);
```

}

```
void swap (sample s)
```

{

```
int temp;
```

```
temp = s.x;
```

```
s.x = s.y;
```

```
s.y = temp;
```

}

```
void main ()
```

{

```
sample s;
```

Output :-

Input 2 no : 25 40

Before swapping

x = 25 y = 40

After swapping

x = 40 y = 25

```
int x1, x2;
```

```
cin >> x1 >> x2;
```

```
cout << " Input 2 no " << endl;
```

```
cin >> x1 >> x2;
```

```
s.setdata (x1, x2);
```

```
cout << " Before swapping " << endl;
```

```
s.showdata();
```

```
swap (s);
```

```
cout << "\n After swapping " << endl;
```

```
s.showdata();
```

```
getch();
```

}



14

a) Explain inline function and illustrate the same with the example.

An inline function whose code is copied in place of each function call. In other word, each call to inline function is replaced by its code.

Syntax : inline <function name>()

{

Body of the function;

}

Eg: void main()

{

double a, b;

double c = 13.0;

a = cube(5.0);

b = cube(4.5 + 7.5);

cout << a << endl;

cout << b << endl;

cout << cube(c++) << endl;

{

inline double cube(double x)

{
return x * x * x;
}b. Write a program to calculate area and circumference of circle
using inline functions

#include <iostream.h>

#include <conio.h>

const float pi = 3.14;

inline float circum(float r)

{

return (2 * pi * r);

}

inline float area(float r)

{

return (pi * r * r);

}

void main()

{
float r;

```
class();
```

```
cout << "Enter the value of r" << endl;
```

```
cin >> r;
```

```
cout << "circumference is " << circum(r) << endl;
```

```
cout << "area is " << area(r) << endl;
```

```
getch();
```

```
}
```

Output :

Enter the radius of circle : 5.5

Circumference : 33

Area : 90.75

15. Write a short note on:

a) Data Hiding

The data is hidden inside the class by declaring it as private inside the class. When data or functions are defined as public then it can be accessed anywhere outside the class. This is done by declaring data as private and making it accessible only to the class in which it is defined. This concept is called data hiding.

b) seekg() and seekp() function

The seekg() and seekp() functions are members of the input & output stream classes, respectively.

The first parameter is an offset that determines how many bytes to move the file pointer.



iStream & seekg (off-type offset, i/o seek flag);
oStream & seekp (off-type offset, i/o seek flag);

c. Virtual base class

The duplication of inherited members due to these multiple paths can be avoided by making the common base class as virtual base class. When a class is made a virtual base class, C++ takes necessary care to see that only one copy of that class is inherited, regardless of how many inheritance paths exist b/w virtual and base class and derived class.



HEAD OF THE DEPARTMENT
Department of Computer Sciences
Acharya's Bangalore B-School
Bangalore-560 091



Chayale
Principal
Acharya Bangalore B-school
Andrahalli Main Road, off Magadi Road,
Bengaluru-560091



Acharya Bangalore B-School

(Affiliated to Bangalore University, Approved by AICTE & Recognized by Govt. of Karnataka)
(Re-accredited with NAAC 'A' grade)

Aspire. Accelerate. Achieve.

SLOW LEARNERS – TUTORIAL CLASSES

Andrahalli Main Road, Off Magadi Road, Bengaluru-560091, Karnataka, India
Contact us: 080 23090600, M: +91 91417 07070, admissions@abbs.edu.in
www.abbs.edu.in

REGISTER OF ATTENDANCE & FEES

Name of the Institute Acharya Bangalore B-School

FOR THE MONTH OF Jan..... 2021

Section V Sem..... Place

REGISTER OF ATTENDANCE & FEES

Name of the Institute Acharya Bangalore B School

FOR THE MONTH OF Tan..... **2021**

Section III Term Place

REGISTER OF ATTENDANCE & FEES

Name of the Institute Acharya Bangalore B school

FOR THE MONTH OF Jan. - Feb. **2021**

Section I Sem Place

REGISTER OF ATTENDANCE & FEES

Name of the Institute **ABBS**

ABBS

FOR THE MONTH OF Aug. **2021**

Section TI Cem.

Place

REGISTER OF ATTENDANCE & FEES

Name of the Institute ABBS

FOR THE MONTH OF ... Aug **2021**

Section W Sess. Sum Place _____

REGISTER OF ATTENDANCE & FEES

Name of the Institute ABBS

ABBC

FOR THE MONTH OF Aug..... 2021

Section II Sem. Place

I Sem

... Place