



**Shri Shivaji Education Society's
Board for Higher Education Vidyanagar Karad.**



YASHWANTRAO CHAVAN COLLEGE OF SCIENCE, KARAD

Department of Microbiology

A

Certificate Course

in

Production of Biofertilizers and Biopesticides

2022-2023

Index

Total Students: 06

Class: B.Sc I

Duration: 06 Months

INDEX



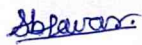

1	List of enrolled students 2022-2023
2	Question Paper Theory 2022-2023
3	Question Paper Practical 2022-2023
4.	Result sheet of appeared students 2022-2023



Yashwantrao Chavan College of Science, Karad
Department of Microbiology
2022-23

Course Title: Certificate course in production of biofertilizer and biopesticide
Course Duration: 06 months

List of students enrolled for the course

Sr. No.	Name of Students	Signature
1.	Isha Ravindra Jadhav	
2.	Shruti Samadhan Lokhande	S.S. Lokhande.
3.	Amruta Vijaykumar Patil	 .
4.	Shreya Bapurao Pawar	
5.	Sejal Anil Kumbhar	S. A. Kumbhar.
6.	Sanika R. Tapase	



Course Coordinator



Head

Department of Microbiology

HEAD
DEPARTMENT OF MICROBIOLOGY



Seat No.:

Yashwantrao Chavan College of Science, Karad
Department of Microbiology

2022-23

Certificate course in production of biofertilizer and biopesticide
Theory Examination

Day and Date – Saturday 04/02/2023
Time 10:30 a.m. to 12:30 p.m.

Total marks- 50

Instructions: 1. All questions are compulsory
2. Each question carries 2 marks

Select the most correct alternative from the following and tick the correct answer in the question paper itself.

1. Organic farming is the technique of raising crops through uses of

a) Manures b) Biofertilizer c) Resistant varieties d) all of these

2. Which one is green manure/ biofertilizer

a) Sesbania b) Rice c) Oat d) Maize

3. Azolla is used as biofertilizer as it has

a) Rhizobium b) Cyanobacteria c) Mycorrhiza d) large quantity of humus

4. The most quickly available source of nitrogen to plants are

a) Amide fertilizer b) Ammonia fertilizer c) Nitrate fertilizer d) Ammonia nitrate fertilizer

5. What are biocontrol agents, and how do they work to keep butterfly caterpillars at bay?

a) Bacillus thuringiensis b) Lactobacillus c) Acetobacter aceti d) Treponema pallidum

6. Frankia produced nitrogen by fixing nodule on

a) lentils b) garden pea c) alnus d) broadbean

7. Symbiotic nitrogen-fixing cyanobacteria are not present in

a).Azolla b) Gnetum c) Anthoceros d) Cycas



8. Symbiotic N₂ fixing cyanobacteria are present in all except

- a) Anthoceros b) Azolla c) Cycas d) Gnetum

9. Root nodule of legumeous plant contains

- a) Nitrogenase b) leghemoglobin c) both d) none

10. Which of the following nitrogen fixers is found in rice field associated with Azolla?

- a) Tolypothrix b) Frankia c) Anabaena d) Spirulina

11. Which of the following is not a biofertilizer?

- a) Mycorrhiza b) Rhizobium c) Agrobacterium d) Nostoc

12. Which of the following is a pair of biofertilizers?

- a) Salmonella and E.coli b) Rhizobium and grasses c) Nostoc and legume d) Azolla and BGA

13. Pick the correct statement

- a) legumes do not fix nitrogen
b) legumes fix nitrogen independent of bacteria
c) legumes fix nitrogen through bacteria in their roots
d) legumes fix nitrogen through bacteria in their leaves

14. Which of the following is not a biopesticide?

- a) Nucleopolyhedron virus b) Xanthomonas campestris c) Bacillus thuringiensis d) Trichoderma harzianum

15. The process of using a natural predator to control a pathogen is called

- a) Genetic engineering b) Biological control c) Confusion technique d) Artificial control

16. Which of the following is widely used as a successful biofertilizer in Indian rice field?

- a) Rhizobium b) Acacia arabica c) Acalypha indica d) Azolla pinnata

17. Biopesticide include

- a) bioinsecticide b) bioherbicides
c) bioinsecticide and bioherbicide d) bioinsecticide, bioherbicide and biofertilizers

18. Azolla is often used as biofertilizer because it is associated with

- a) Fungus b) BGA c) Red algae d) Moss

19. Green manuring increases the crop yield by

- a) 5-10% b) 15-20% c) 30-50% d) 80-90%

20. Rotenone is used as a

- a) Bioherbicide b) Insect hormone c) Natural insecticide d) Natural herbicide

21. Azolla as biofertilizer, increases the crop yield of rice field by

- a) 10% b) 20% c) 40% d) 50 %

22. Spirulina is

- a) Biofertilizer b) Biopesticide c) Edible protein d) Single cell protein

23. Which of the following is a biocontrol agent for nematodal diseases?

- a) Pseudomonas cepacia b) Pisolithus tinctorius c) Paecilomyces lilacinus d) Gliocladium virens

24. Cochineal insects are used for

- a) Parthenium control b) weeds control c) Eicchornia prevention d) Cactus prevention

25. Which of these is not correctly matched?

- a) Azatobacter- Bioinsecticide b) Bio 902- Variety of mustard
c) Crysopa- Maho-control d) BGA- Biofertilizer

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Seat No.:

Yashwantrao Chavan College of Science, Karad
Department of Microbiology

2022-23

Certificate course in production of biofertilizer and biopesticide
Practical Examination

Day and Date – Friday 03/02/2023
Time 10:30 a.m. to 12:30 p.m.

Total marks- 50

Q.1. Attempt to isolate *Rhizobium* from given root nodules sample and study its morphological characteristics (20 marks)

Q. 2. Attempt to isolate *Azotobacter* from given soil sample and study its morphological and characteristics. (20 marks)

Q.3. Viva-voce (10 marks)



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Yashwantrao Chavan College of Science, Karad
Department of Microbiology
2022-23

Certificate course in production of Biofertilizer and Biopesticide
Practical and Theory Examination Result

Date-07/02/2022

Sr. No.	Seat No.	Name of Students	Practical marks (50)	Theory marks (50)	Total marks P+T =100
1.	1001	Isha Ravindra Jadhav	45	32	77
2.	1002	Shruti Samadhan Lokhande	41	34	75
3.	1003	Amruta Vijaykumar Patil	46	36	82
4.	1004	Shreya Bapurao Pawar	40	32	72
5.	1005	Sejal Anil Kumbhar	42	32	74
6	1006	Sanika R. Tapase	39	30	69


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Estd.:

1958

|| Be one with the downtrodden and the underprivileged ||

Shri Shivaji Education Society, Vidyanagar, Karad
Board for Higher Education's, Vidyanagar Karad's

Yashwantrao Chavan College of Science, Karad

- Vidyanagar, Karad - 415 124.
- Reaccredited B++ Level by NAAC, Bangalore.
- An ISO 9001 : 2015 Certified College



Short Term Course

Certificate of Completion

This is to certify that Mr./Miss. Shreya Bapurao Pawar

of Class B.Sc. I has Completed Short Term Course (6 Months) in Production of

Biofertilizers & Biopesticides conducted by the department of

Microbiology during the academic year 2022-2023

Course Co-ordinator

Head of the Department

IQAC Co-ordinator

Principal

CCE-20

Yashwantrao Chavan College of Science, Karad
DEPARTMENT OF MICROBIOLOGY

ATTENDANCE SHEET of Certificate Course in production of Biofertilizers and Biopesticides

Year :2022-23

Name of the Teacher: Dr. A. A. Raut

Class: B.Sc.I

Dept./Sub.

Roll no	DATE	Name of the Student	12/8/22	26/8/22	16/9/22	14/10/22	16/12/22	12/1/23	15/2/23	10/3/23		
1		Shruti Samadhan Lokhande	Shruti Lokhande		Shruti Lokhande		Shruti Lokhande		Shruti Lokhande			
2		Isha Ravindra Jadhav	IR Jadhav	IR Jadhav		IR Jadhav	IR Jadhav	IR Jadhav	IR Jadhav	IR Jadhav		
3		Amruta Vijaykumar Patil	APati	APati	APati	APati	APati	APati	APati	APati		
4		Shreya Bapurao Pawar	Spawar		Spawar	Spawar		Spawar		Spawar		
5		Shejal Anil Kumbhar	S.A. Kumbhar	S.A. Kumbhar	S.A. Kumbhar	S.A. Kumbhar		S.A. Kumbhar	S.A. Kumbhar	S.A. Kumbhar		
6		Samarth Madhukar Kumbhar	SR Kumbhar	SR Kumbhar		SR Kumbhar	SR Kumbhar		SR Kumbhar	SR Kumbhar		
		Sanika R. Tapase	SR Tapase	SR Tapase		SR Tapase	SR Tapase	SR Tapase		SR Tapase		

