Seat No:	Enrolment No:

## PARUL UNIVERSITY COLLEGE OF AGRICULTURE

## B.Sc. (Hons.) Agriculture winter 2022-23 Examination

**Semester: IV** Date: 22-03-2023

**Subject Code: 20100251** Time: 10:30am to 1:00pm

Subject Name: Biopesticides and Biofertilizers **Total Marks: 50** 

## Instructions

- All questions are compulsory.
   Figures to the right indicate full marks.
- 3. Make suitable assumptions wherever necessary.
- 4. Start new question on new page.

1. SC	ientist was isolated <i>Bt</i> from Mediterranean flour moth.	
2. prod	scientist was isolated <i>Bt</i> from Mediterranean flour moth.  product is used to control mites.	
3. Azolla fixes	kg N/ha in rice crop.	
4. Bacillus popilliae comm	nercially available in market under trade name	
5.	is microscopic protozoan is used to control grasshoppers.	
6.	egg parasitoid used to control the lepidopteran pests.	
7. is ext	egg parasitoid used to control the lepidopteran pests. racted from the flower of <i>Chrysanthemum cinerariaefolium</i> .	
8.	disease is caused by <i>Metarhizium anisopliae</i> in insectsis an active ingredient of neem.	
9. is	an active ingredient of neem.	
10.	andare 2 <sup>nd</sup> generation botanical insecticides.	
Multiple choice type questi	ons. (Each of 0.5 mark)	
1. Commercial product of ]	NPV is	
a) Elcar	c) Virin H	
b) Virin S	d) All of above	
· · · · · · · · · · · · · · · · · · ·	s a biological nematicide.	
a) Acetobacter	c) Paecilomyces lilacinus	
b) Salmonella typhi.	d) None of above	
,	sease caused by <i>Bacillus popilliae</i> .	
a) Muscardine	c) Chagas disease	
b) Milky disease	d) None of above	
4. <i>Bacillus papillae</i> is effect		
a) Grass hopper	c) Red cotton bug	
b) Stem borer	d) White grub	
,	y predator and parasite is known as	
a) Microbial control	c) Cultural control	
b) Biological control	d) Chemical control	
6. DD – 136 is a product m		
a) Virus	c) Nematode	
b) Fungi	d) Protozoa	
	type of bacteria	
a) Facultative	c) Spore forming	
b) Crystalliferous	d) All of above	
	c Nitrogen fixing bacteria is	
a) <i>Rhizobium</i>	c) Both a and b	
b) Azospirillum	d) None of above	
9. Beauveria bassiana is	d) None of above	
a) Entomopathogenic fu	ngi c) Entomopathogenic bacteria	
, 1	, 1 5	
b) Entomopathogenic vi	, I C	
10. Phosphate solubilising ba		
a) Pseudomonas	c) Both a and b	
b) Bacillus megaterium		
11. Rhizobium fixes		
a) 10-30	c) 50-70	
b) 30-50	d) None of above	

		b) Pearl millet	d) Sorghum	
	13.	The Beauveria bassiana is commercially available	ble in market under trade name	
		•	c) Biosep	
		, 1	d) Biobit	
	14	Biofertilizers can replace % chemic		
	17.		c) 10-15	
		,	d) 40-45	
	1.5		a) 40-43	
	15.	Steinernema carpocapsae is		
		a) Entomopathogenic fungi	c) Entomopathogenic bacteria	
			d) Entomopathogenic nematode	
	16.	The term mycorrhiza was taken from	language.	
		a) Latin	c) Greek	
		b) Roman	d) None	
	17.	mainly present in cereal pl	lants.	
			c) Azotobacter	
		, ·	d) None of above	
	18.	Slow growing rhizobia is known as	,	
	10.		c) Rhizobia	
		,	d) None of above	
	10	, , , , , , , , , , , , , , , , , , ,	essary for the production of good quality of	
	19.	biofertilizer.	ssary for the production of good quanty of	
			a) Liquita	
			c) Lignite	
	20		d) All of above	
	20.	Azolla doubles its biomass indays.	) 10 12	
		,	c) 10-12	
			d) 13-15	
<b>Q.2</b>		o as Directed.		
A		fine the following. (Any five)		(05)
		Biopesticides		
	2.	Integrated pest management (IPM)		
	3.	Symbiotic bacteria		
	4.	Biofertilizers		
	5.	Botanical insecticides		
	6.	Predators		
	7.	Biofertigation		
В		swer the following. (Any Five)		(05)
	1.	Mechanism of phosphate solubilization		(**)
	2.	What is Biological control?		
	3.	Give name of two reference books?		
		Characteristics of ideal microbial insecticide		
		Advantages of biopesticides.		
		Write down properties of Pyrethrum	•	
0.2		Give three examples of Entomopathogenic fungi	l.	(10)
Q.3	_	rite short notes. (Any five)		(10)
	1.	Scope of biopesticdes.		
	2.	Plant growth promoting rhizobacteria (PGPR)		
		Botanical insecticides		
		Azolla as biofertilizer		
		Microbial control		
	6.	Methods of application of biofertilizers		
<b>Q.4</b>	At	tempt any Three/Long Questions/Example		(15)
	1.	Describe symptoms and mode of action of fungi	, bacteria and virus.	
	2.	Explain biofertilizers and give mass production		
	3.	Explain biopesticides and give mass production		
	4.	Explain <i>Bt</i> , its mode of action, symptoms and m	•	