## Enrollment No:\_\_\_\_

PARUL UNIVERSITY COLLEGE OF AGRICULTURE

B.Sc. (Hons.) Agriculture Summer 2018-19 Examination

Semester: Subject C Subject N	: 4 Code: 20100251 Jame: Biopesticides and Biofertilizers	Da Tin To	ate: 06/04/2019 me: 10:30 am to 01:00 pm otal Marks: 50
Instructio			
1. All que	stions are compulsory.		
2. Figures	to the right indicate full marks.		
3. Make s	uitable assumptions wherever necessary.		
4. Start ne	ew question on new page.		
Q.1 Do	as Directed.		
A. Fil	ll in the blanks. (Each of 0.5 marks)		(05)
1.	scientist was isolated	Bt from Mediterranean flour mot	h.
2.	product is used to control	ol mites.	
3.	Azolla fixes kg N/ha in	rice crop.	
4.	Bacillus popilliae commercially available in	market under trade name	
5.	is microscopic r	protozoan is used to control grass	hoppers.
6.	egg parasitoid use	d to control the lepidopteran pest	S.
7.	is extracted from the flow	ver of Chrysanthemum cineraria	efolium.
8	disease is caused by	Metarhizium anisopliae in insec	ts.
9.	is an active ingredient	of neem.	
10	and	are 2 <sup>nd</sup> generation botanical in	nsecticides.
B.M	ultiple choice type questions. (Each of 0.5 m	nark)	(10)
1.	Commercial product of NPV is	·	
	a) Elcar	c) Virin H	
	b) Virin S	d) All of above	
2.	is a biological nemat	icide.	
	a) Acetobacter	c) Paecilomyces lilacinus	
	b) Salmonella typhi.	d) None of above	
3.	disease caused by <i>Bac</i>	illus popilliae.	
	a) Muscardine	c) Chagas disease	
	b) Milky disease	d) None of above	
4.	Bacillus papillae is effective against	;	
	a) Grass hopper	c) Red cotton bug	
	b) Stem borer	d) White grub	
5.	Management of insects by predator and paras	ite is known as	_
	a) Microbial control	c) Cultural control	
	b) Biological control	d) Chemical control	
6.	DD – 136 is a product made of		
	a) Virus	c) Nematode	
	b) Fungi	d) Protozoa	
7.	Bacillus thuringiensis is type of	bacteria	
	a) Facultative	c) Spore forming	
	b) Crystalliferous	d) All of above	
8.	Most important symbiotic Nitrogen fixing ba	cteria is	
	a) <i>Rhizobium</i>	c) Both a and b	
	b) Azospirillum	d) None of above	
9.	Beauveria bassiana is	_	
	a) Entomopathogenic fungi	c) Entomopathogenic bacter	ria
	b) Entomopathogenic virus	d) Entomopathogenic nema	tode
10	. Phosphate solubilising bacteria is		
	a) Pseudomonas	c) Both a and b	
	b) Bacillus megaterium	d) None of above	
11	. <i>Rhizobium</i> fixeskg N/ha		
	a) 10-30	c) 50-70	
	b) 30-50	d) None of above	
12	. Azolla is used in crop.		
	a) Wheat	c) Rice	
	b) Pearl millet	d) Sorghum	

	13.	The Beauveria bassiana is commercially availa	ble in market under trade name	
		a) Biolep	c) Biosep	
		b) Biosoft	d) Biobit	
	14.	Biofertilizers can replace% chemic	cal fertilizer.	
		a) 25-30	c) 10-15	
		b) 35-40	d) 40-45	
	15.	Steinernema carpocapsae is		
		a) Entomopathogenic fungi	c) Entomopathogenic bacteria	
		b) Entomopathogenic virus	d) Entomopathogenic nematode	
	16.	The term mycorrhiza was taken from	language.	
		a) Latin	c) Greek	
	. –	b) Roman	d) None	
	1/mainly present in cereal plants.			
		a) Azospirillum	c) Azotobacter	
	10	b) Acetobacter	d) None of above	
	18.	Slow growing rhizobia is known as		
		a) Rhizobium	c) <i>Rhizobia</i>	
	10	b) Bradyrhizobium	d) None of above	
	19.	Ideal carrier material is nece	essary for the production of good quality of	
		biolerunizer.	a) Lignita	
		a) Press filled	d) All of above	
	20	0) Charcoal	u) All of above	
	20.	a) 7.0	a) 10, 12	
		b) $3.5$	d) 13 15	
02	D	a se Directed	u) 15-15	
Q.2	De	fine the following (Any five)		(05)
1	1	Biopesticides		(05)
	2.	Integrated pest management (IPM)		
	3.	Symbiotic bacteria		
	4.	Biofertilizers		
	5.	Botanical insecticides		
	6.	Predators		
	7.	Biofertigation		
В	.An	swer the following. (Any Five)		(05)
	1.	Mechanism of phosphate solubilization		
	2.	What is Biological control?		
	3.	Give name of two reference books?		
	4.	Characteristics of ideal microbial insecticide		
	5.	Advantages of biopesticides.		
	6.	Write down properties of Pyrethrum		
	7.	Give three examples of Entomopathogenic fung	ji.	
Q.3	W	rite short notes. (Any five)		(10)
	1.	Scope of biopesticdes.		
	2.	Plant growth promoting rhizobacteria (PGPR)		
	3.	Botanical insecticides		
	4.	Azolla as biofertilizer		
	5.	Microbial control		
0.4	6.	Methods of application of biotertilizers		(1 =)
Q.4		tempt any Inree/Long Questions/Example	: heatania and sime	(15)
	1. 2	Describe symptoms and mode of action of fung	l, Dacteria and VIIUS.	
	∠. 2	Explain biorectinizers and give mass production	technique of mycommzai biolertinizer.	
	5.	Explain biopesticides and give mass production	technique of Shirp v.	

4. Explain *Bt*, its mode of action, symptoms and mass production.