

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What are pathogen related (PR) proteins?
Write in detail.
Or
(b) Give detailed notes on cork layer and write down its defense mechanism.
17. (a) Give detailed notes on inducible structural defenses of plants against pathogens.
Or
(b) Write notes on
(i) Plantobodies
(ii) Quinones
(iii) Oxidative bursts
18. (a) Write notes on Black stem rust of wheat.
Or
(b) Give the pathogenicity, prevention and impact of white rust of crucifers.
19. (a) Write down the importance of Rhizobium as biofertilizer. Write down their relationship with plants.
Or
(b) Add detailed notes on VAM.
20. (a) How Trichoderma species played a role as biopesticide.
Or
(b) Write down the mode of action of Bacillus thuringiensis on intestine of insects.

Code No. : 11669 E

Sub. Code : JAMI 3 1/
SAMI 31

B.Sc. (CBCS) DEGREE EXAMINATION,
APRIL 2019.

Third Semester

Microbiology – Allied

PLANT PATHOLOGY BIOFERTILIZERS AND
BIOPESTICIDES

(For those who joined in July 2016 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. First of all microscope discovered by:
(a) Needham (b) Spallanzani
(c) Leeuwenhoeck (d) Koch
2. Stroma is
(a) Acompact somatic hyphae with fruit bodies
(b) Loosely interwoven hyphae
(c) A small hyphal branch
(d) A group of spores,
3. What is the protective waxy layer on the surface of plants called?
(a) Spore (b) Leaf
(c) Root (d) Cuticle

The inhibitor present in plant cells
(a) Phenolics (b) Saponins
(c) Quinones (d) All the above

White rust of crucifer is caused by
(a) Puccinia (b) Ustilago
(c) Cystopus (d) Peziza

Alternaria solani causes
(a) late blight of potato
(b) wart of potato
(c) early blight of potato
(d) leaf curl of potato

Azolla as biofertilizer, increases the yield of rice fields by
(a) 10% (b) 20%
(c) 30% (d) 50%

Which of the following is the pair of biofertilizers?
(a) Rhizobium and grasses
(b) *Azolla* and BGA
(c) Nostoc and legume
(d) *Salmonella* and *E. coli*

Insecticides that act by permeating the entire plant are said to be
(a) Porous insecticides
(b) Systemic insecticides
(c) Contact poisons
(d) Penetrating pesticides

The potential of a pesticide for causing damage to plants is its
(a) defoliation ability (b) lethal dose
(c) phytotoxicity (d) chronicity

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answers should not exceed 250 words.

11. (a) Add short notes on symptoms associated with microbial plant diseases.
Or
(b) Write down the importance of plant diseases
12. (a) Elaborate the disease cycle and their mode of pathogenicity.
Or
(b) Give the mode of infection, invasion and colonization of bacterial plant pathogens
13. (a) Write down the disease caused by *Phytophthora infestans*.
Or
(b) Write notes on ergot of rye.
14. (a) Give the importance of *Azospirillum*.
Or
(b) Add notes on Nostoc
15. (a) Write short notes on *Agrobacterium tumefaciens*
Or
(b) Add notes on nuclear polyhedrosis virus.