

(6 pages)

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M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2015.

First Semester

Botany

MICROBIOLOGY AND PLANT PATHOLOGY

(For those who joined in July 2012 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. During culturing of bacteria the maximum growth occurs in
 - (a) Log phase
 - (b) Lag phase
 - (c) Stationary phase
 - (d) Death phase

2. The bacterium which is found in the root nodules of legumes and fix up atmospheric N is
 - (a) Pseudomonas
 - (b) Streptococcus
 - (c) Rhizobium
 - (d) Azospirillum
3. Family names of virus have the suffix
 - (a) Viridae
 - (b) Virus
 - (c) Virinae
 - (d) Viride
4. Most mycoplasmas inhabit
 - (a) Soil
 - (b) Mucous membrane of humans
 - (c) Dairy products
 - (d) Water
5. The rocks of a trickling filter are coated with a
 - (a) Bulking agent
 - (b) Zoogloal film
 - (c) E.Coli
 - (d) Sludge
6. The most numerous microorganisms in soil are
 - (a) Bacteria
 - (b) Nematodes
 - (c) Algae
 - (d) Protozoa



7. The bean shaped organ, encapsulated by connective tissue refers to

- (a) Lymph node (b) Bone marrow
(c) Thymus (d) Spleen

8. The low molecular weight proteinaceous substances, which serve as messenger of immune system refers to

- (a) Hormone
(b) Cytokines
(c) Haptens
(d) Immunoglobulin

9. The fungicide which has the mixture of copper and quick lime is

- (a) Bordeaux mixture
(b) Phelam mixture
(c) Sulphan
(d) Captan

10. The disease incited by mycoplasma in brinjal is

- (a) Little leaf (b) Root knot
(c) Yellow vein (d) Soft rot

PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) What are bacterial pili and fimbriae? Add a note on the classification based on their functions.

Or

- (b) What are bacteria? Mention the general properties of bacteria.

12. (a) Draw and label the structure of a typical bacteriophage.

Or

- (b) Define the terms - MIC, MLC, narrow spectrum drugs and broad-spectrum drugs.

13. (a) Describe the different types of food spoilage, and identify the microorganisms responsible in each case.

Or

- (b) Draw the flow diagram, and elaborate the usual procedures adopted in municipal water treatment.



14. (a) Draw and explain the basic structure of immunoglobulin.

Or

- (b) Mention the major categories of cell-mediated immune response based on the effector function.

15. (a) Elaborate the role of phenolic compounds in defence mechanism in plants.

Or

- (b) What is biological control? Discuss its advantages over other methods.

PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) What is endospore? Describe its structure and formation with suitable diagrams.

Or

- (b) Explain the role of bacteria in improving the soil organic matter and soil fertility with suitable examples.

17. (a) Name several major groups of antibiotics on the basis of their chemical structure with suitable example of each group.

Or

- (b) Write an essay on classification and nomenclature of animal and plant viruses.

18. (a) What are aflatoxins and fumonisins and correlate them with food spoilage?

Or

- (b) Explain the microbial flora of raw milk and mention how these organisms can be destroyed. Add a note on phosphatase test as a proof of pasteurization.

19. (a) What is immune system? Explain in detail.

Or

- (b) Write the classification of granulocytes with suitable diagrams.

20. (a) Elaborate the role of biochemical compounds in defence mechanism of plants.

Or

- (b) What are the different control methods adopted in plant disease management. Mention the advantages and disadvantages of each.

