

(6 pages)

Reg. No. :

Code No. : 6413

Sub. Code : ZBOM 13

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

First Semester

Botany – Core

MICROBIOLOGY AND IMMUNOLOGY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. A haemocytometer is a special counting chamber designed for counting
 - (a) Bones
 - (b) Cells
 - (c) Nerves
 - (d) Pulse rate

2. Which of the following are the recommended heat temperature and time periods for the moist heat sterilization method used in an autoclave?
 - (a) 180 °c for 5 minutes
 - (b) 121 °c for 15 minutes
 - (c) 126 °c for 3 minutes
 - (d) 160 °c for 45 minutes
3. The smallest cells of mycoplasmas are about _____ in diameter.
 - (a) 1 micrometre
 - (b) 0.3 micrometre
 - (c) 5 micrometre
 - (d) 1 metre
4. Mycoplasmas can be cultivated in vitro on nonliving media as
 - (a) Facultative aerobes
 - (b) Obligate aerobes
 - (c) Facultative anaerobes
 - (d) Microaerophiles
5. Botulism prevention involves
 - (a) Proper heat sterilization before food canning
 - (b) Addition of chemical preservatives
 - (c) Proper low temperature treatment before food canning
 - (d) All of these

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6. *Clostridium perfringens* poisoning is associated with
 (a) Meat products (b) Vegetables
 (c) Canned foods (d) Fish products
7. Urea degrading bacteria
 (a) *Bacillus pasture*
 (b) *B. niger*
 (c) *Micrococcus sp*
 (d) *Clostridium pasteurianum*
8. Which is known as sewage fungus?
 (a) *Cephalosporium* (b) *Penicillium*
 (c) *Leptomitus* (d) *Rhizobium*
9. How many types of antibodies are there?
 (a) Five (b) Three
 (c) Two (d) Four
10. Which of the following statements is true about the IgM of humans?
 (a) IgM can cross the placenta
 (b) IgM can protect the mucosal surface
 (c) IgM is produced by high-affinity plasma cells
 (d) IgM is primarily restricted in the circulation

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PART B — (5 × 5 = 25 marks)

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

Each answer should not exceed 250 words.

11. (a) Enumerate physical methods of sterilization.

Or

- (b) Show the ultrastructure of Gram positive bacterial cell.

12. (a) Explain the structure of Mycoplasma.

Or

- (b) Describe the lysogenic cycle of viruses.

13. (a) Explain the spoilage of fruits.

Or

- (b) Show the production of acetic acid.

14. (a) List out the role of BGA.

Or

- (b) Infer the rhizosphere region of plants.

15. (a) Comment on innate immunity.

Or

- (b) Mention about T cell epitopes.

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PART C — (5 × 8 = 40 marks)

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

Each answer should not exceed 600 words.

16. (a) Illustrate the haemocytometer and its uses for cell count.

Or

- (b) Describe the bacterial growth.

17. (a) Give an account of viroids and prions.

Or

- (b) List out the general characteristics of viruses.

18. (a) Determine preservation of food products.

Or

- (b) Elucidate the dairy and canned foods.

19. (a) Examine the significance of microbial inoculants in agriculture.

Or

- (b) Notify the indicator organisms in an environment.

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20. (a) Discuss on antigenicity.

Or

- (b) Describe about principle, working mechanism and applications of ELISA.

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