

**B.Sc. BOTANY
FOURTH SEMESTER
MICROBIOLOGY
BSB – 401**

(Use Separate Answer Scripts for Objective & Descriptive)

Duration : 3 hrs.

Full Marks: 70

[**PART-A: Objective**]

Time: 20 min.Marks: 20

Choose the correct answer from the following:

1X20=20

1. Which of the following apparatus is used to provide steam under regulated pressure?
 - a. Autoclave
 - b. Laminar air flow
 - c. Incubator
 - d. Hot air oven.
2. Which of the following apparatus is used to provide steam under regulated pressure?
 - a. 5 psi
 - b. 20 psi
 - c. 15 psi
 - d. 40 psi.
3. Gram staining was developed by
 - a. Louis Pasteur.
 - b. Robert Koch.
 - c. Christian Gram.
 - d. Gerald Gram.
4. Viruses that attack bacteria are called
 - a. Lysophage
 - b. Bacteriophage.
 - c. Virophage
 - d. Non of these.
5. Which one of the following is not having Cell wall?
 - a. Virus
 - b. Viroid
 - c. Mycoplasma
 - d. Cyanobacteria
6. Name the type of bacteria which uses reduced inorganic substance as an electron source ?
 - a. Autotroph
 - b. Chemotrophs
 - c. Organotrophs
 - d. Lithotrophs.
7. The genetic material of viruses consists of either-
 - a. DNA.
 - b. RNA.
 - c. DNA or RNA.
 - d. cs-DNAor cs RNA.
8. Viruses are
 - a. Obligate parasite
 - b. Free living.
 - c. Both free living and parasite.
 - d. None of these.
9. A cluster of polar flagella is called
 - a. Lophotrichous
 - b. Amphitrichous
 - c. Monotrichous
 - d. Peritrichous

10. Pasteurization is a
- Low temperature treatment
 - Streaming treatment
 - High temperature treatment
 - Low and High temperature treatment
11. Conversion of ammonia to nitrite and then to nitrates is called
- Ammonification
 - Nitrification
 - Denitrification
 - Assimilation
12. Which of the following microorganism is eliminated in canned foods?
- Lactobacillus*
 - Mycobacterium tuberculosis*
 - Clostridium botulinum*
 - Coxiella burnetii*
13. Which of the following are produced by microorganisms
- Alcoholic beverages
 - Fermented dairy products
 - Breads
 - All of the mentioned
14. Treatment of municipal water is based on
- Chlorination, filtration, coagulation
 - Filtration, coagulation, chlorination
 - Coagulation, filtration, chlorination
 - Coagulation, chlorination, filtration
15. Which of the following forms of water is the most contaminated?
- Rainwater
 - Surface water
 - Underground water
 - Water stored in ice caps
16. The coliform group of bacteria includes all the _____ bacilli.
- aerobic
 - aerobic, non-sporulating
 - anaerobic
 - aerobic, gram-negative, non-sporulating
17. Food preservation involves
- Increasing shelf life of food
 - Ensuring safety for human consumption
 - Both a and b
 - None of the above
18. In which of the following method, the enzyme is bound to a suitable adsorbent material rendering it immobile?
- Membrane confinement
 - Covalent binding
 - Entrapment
 - Adsorption
19. The degradation of complex molecules in soil by fungi for utilization by bacteria is an example of which type of association?
- Neutralism
 - Commensalism
 - Antagonism
 - Mutualism
20. The 'earthy smell' after rain is caused by
- Bacteria
 - Fungi
 - Actinomycetes
 - All of the above

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(PART-B : Descriptive)

Time : 2 hrs. 40 min.

Marks : 50

[Answer question no.1 & any four (4) from the rest]

1. What is lytic cycle? Discuss the lytic cycle in brief with suitable diagram 1+9=10
2. Describe in brief the Germ Theory of disease and Koch's postulates 10
3. Who proposed the Five kingdom concept of classification? Discuss in brief the five kingdom system of classification of microorganism. 1+9=10
4. Write notes on 5+5=10
 - a. Physical control of microbial growth.
 - b. Chemical control of microbial growth.
5. What is Biogeochemical cycling? Describe the nitrogen cycle in soil. 2+8=10
6. 5+5=10
 - a. Discuss briefly the microbial components of water.
 - b. Name five water borne disease and their causal organisms.
7. 5+5=10
 - a. What do you mean by food poisoning? Write a brief note on food preservation.
 - b. Describe the factors responsible for food spoilage.
8. Write short notes on (*any two*) 5+5=10
 - a. Enzyme immobilization
 - b. Preservation of food
 - c. Milk and milk products

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