

**B.Sc. BIOTECHNOLOGY  
THIRD SEMESTER (REPEAT)  
GENERAL MICROBIOLOGY  
BBT-302**  
[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 3 hrs.

Full Marks: 70

Time: 30 mins.

( Objective )

Marks: 20

Choose the correct answer from the following:

1×20=20

- Who is known as "Father of microbiology"?
  - Louis Pasteur
  - Alexander Fleming
  - Leeuwenhoek
  - Robert Koch
- "Swan-neck-flask" experiment was done by:
  - Leeuwenhoek
  - Alexander Fleming
  - Robert Koch
  - Louis Pasteur
- "*Contagium vivum fluidum*" relates to:
  - Fluid
  - Protozoa
  - Amoeba
  - Virus
- In Binomial nomenclature, if the generic name and species names are same, they are known as:
  - Tautonyms
  - Topotype
  - Lectotype
  - Neotype
- Whittaker's criteria for delimiting the different kingdoms is/are:
  - Mode of nutrition
  - Separation of Archaea from bacteria
  - Inclusion of virus as separate kingdom
  - None of the above
- Kingdom Protista includes/have:
  - Unicellular and colonial prokaryotes
  - Dual mode of nutrition
  - Non-intermediate between wall-less and walled organisms
  - Both b) and c) are correct
- Glycogen and fat is reserved food in:
  - Archea
  - Bacteria
  - Fungi
  - Protozoa
- Eukarya possess:
  - Glycerol fatty acyl diaster membrane lipids
  - Isoprenoid glycerol diether
  - Diacyl glycerol diaster
  - Fatty acid
- An example of an Evolutionary enigma is:
  - Diplomonas
  - Microsporidia
  - Trichomonads
  - Bacillus

10. Viroids:
- a. Do not have a protein coat
  - b. Have a protein coat
  - c. Capable of self-replication
  - d. Both a) and c) are correct
11. Transmissible spongiform encephalopathy (TSE) is caused by:
- a. Virus
  - b. Viroids
  - c. Virusoid
  - d. Prions
12. Phase contrast microscopy was first described by:
- a. Frits Zernike
  - b. Leeuwenhoek
  - c. Robert Hooke
  - d. Faber
13. The principle of autoclave is/are:
- a. Dry heat sterilisation
  - b. Moist heat sterilisation
  - c. Steam under pressure
  - d. Both b) and c)
14. In UV radiation which particular wavelength has highest bactericidal properties?
- a. 2600  $\text{\AA}$
  - b. 150  $\text{\AA}$
  - c. 5000  $\text{\AA}$
  - d. 350  $\text{\AA}$
15. In which technique mixed culture of bacteria is diluted directly in tubes containing melted agar medium at a temperature of 42-45°C?
- a. Spread plate technique
  - b. Pour plate technique
  - c. Streak plate technique
  - d. Serial dilution
16. In which preservation technique microbes are preserved on liquid nitrogen?
- a. Lyophilisation
  - b. Chilling
  - c. Paraffin method
  - d. Cryopreservation
17. *Buchnera aphidicola* is a proper example of:
- a. Competition
  - b. Ammensalism
  - c. Mutualism
  - d. None of the above
18. An example of Ammensalism is:
- a. *Buchnera aphidicola*
  - b. Bacteriocin nisin
  - c. Viruses
  - d. *Nitrosomonas*
19. Buttermilk like flavor in citrus juices is produced by:
- a. *Lactobacilli*
  - b. *Colletotrichum*
  - c. *Serratia*
  - d. *Chromobacterium*
20. Cheese-holes are formed by:
- a. Clostridium
  - b. Leuconostoc
  - c. Cladosporium
  - d. Both a) and b)



**( Descriptive )**

Time : 2 hr. 30 mins.

Marks : 50

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

1. Describe briefly the major microbial interactions found in soil with suitable examples. 10
2. Write a short note on the following: 5+5=10
  - a) Spontaneous generation v/s biogenesis
  - b) Kingdom Fungi
3. Define fixation. Discuss the major staining techniques used in microbiology. 2+8=10
4. a) Match the following: 5+5=10

i. Downy mildew in fruits	i. Actinomycetes
ii. Cheddar cheese	ii. Alkaligenes
iii. Ropiness in milk	iii. Lactococci
iv. Earthy flavor in meat	iv. Phytophthora
v. Anthracnose in fruits	v. Colletotrichum

b) Write a short note on canning.
5. Describe the different sources of microbial deterioration of food. 10
6. Describe briefly the physical method of sterilization. 10
7. Write short notes on: 5+5=10
  - a) Lyophilisation
  - b) Louis Pasteur
8. Write short notes on: 5+5=10
  - a) Pour plate technique
  - b) Three domain system of classification

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