

M.Sc. BIOTECHNOLOGY  
THIRD SEMESTER  
MEDICAL BIOTECHNOLOGY  
MBT-304

**SET  
A**

[USE OMR SHEET FOR OBJECTIVE PART]

Duration: 1hr. 30 mins.

Full Marks: 35

Time: 15 mins.

( Objective )

Marks: 10

Choose the correct answer from the following:

1×10=10

- Which of the following bacteria is a part of normal flora present inside the mouth and – also a frequent cause of bacterial dental caries?
  - Staphylococcus epidermidis*
  - Lactobacillus acidophilus*
  - Streptococcus mutans*
  - Candida albicans*
- Which of the following bacteria is present as normal flora in the acidic pH of the vagina?
  - Clostridium botulinum*
  - Lactobacillus acidophilus*
  - Neisseria gonorrhoeae*
  - Streptococcus mutans*
- Which of the following microorganism is a part of the normal flora of the skin and is also a common pathogen isolated from skin infections?
  - Bacillus anthracis*
  - E. coli*
  - Staphylococcus aureus*
  - Candida albicans*
- An appropriate term for human resident flora is:
  - Commensals
  - Parasites
  - Mutualism
  - Pathogens
- The endotoxin of the following gram negative bacteria does not play any part in the pathogenesis of the natural disease:
  - E. coli*
  - Vibrio cholerae*
  - Pseudomonas aeruginosa*
  - Klebsiella sp.*
- Which of the following is associated with “Black death”?
  - Measles
  - Tuberculosis
  - Plague
  - Anthrax
- Which is the most common form of anthrax?
  - Inhalation anthrax
  - Cutaneous anthrax
  - Injection anthrax
  - Gastrointestinal anthrax
- The first person who discovered *Mycobacterium tuberculosis* was:
  - Robert Koch
  - Edward Jenner
  - Louis Pasteur
  - None of the above

9. Which of the following can be an active agent in an antiseptic?
- a. Alcohol
  - b. Phenol
  - c. Iodine
  - d. All of the above
10. Antibiotics are used to treat infections by:
- a. Virus
  - b. Bacteria
  - c. Fungi
  - d. All microbes

( Descriptive )

Time : 1 hr. 15 mins.

Marks : 25

[ Answer question no.1 & any two (2) from the rest ]

- |   |        |
|---|--------|
| 1. Explain disease cycle with a diagram.  | 5      |
| 2. Write the effect of antibiotics on proteins, nucleic acid, and cell wall.                          | 10     |
| 3. Explain the morphology, classification, cultural characteristics, pathogenicity, and diagnosis of- | 5+5=10 |
| i) <i>Streptococci</i> or <i>Bordetella</i>   |        |
| ii) <i>Corneobacterium</i> or <i>Haemophilus</i>  |        |
| 4. Explain the morphology, classification, cultural characteristics, pathogenicity, and diagnosis of- | 5+5=10 |
| i) <i>E. coli</i> or <i>Shigella</i>  |        |
| ii) <i>Vibrios</i> or <i>Salmonella</i>   |        |
| 5. Write short notes on:  | 10     |
| a) Anthrax  |        |
| b) Plague   |        |

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