

UKA TARSADIA UNIVERSITY

B.Pharm. (3rd Semester)

Subject :030020302 - Microbiology

Duration: 3 Hours

Max. Marks: 70.

Instructions:

1. Attempt all questions.
2. Write each section in a separate answer book.
3. Make suitable assumptions wherever necessary.
4. Figures to the right indicate full marks allocated to that question.
5. Draw diagrams/figures whenever necessary.

Section-1

Q-1 (A) Do as directed.

[07]

- I) Who is father of Microbiology?
- II) Which staining method is used to identify Mycobacterium tuberculosis?
- III) Explain the term Differential staining.
- IV) What do you understand by Obligate parasites?
- V) Explain the term Chemotaxis.
- VI) Write down the use of MacConkey agar media.
- VII) Explain the term Phototrophs.

Q-1 (B) Answer the following in brief. (Any 4)

[08]

- I) Write Louis Pasteur's main contributions to microbiology and medicine.
- II) Explain: Actinomycetes.
- III) Comment: Oxygen can be both beneficial and poisonous to living organism.
- IV) Explain the location of Periplasmic flagella?
- V) Write down the difference between Gram positive versus Gram negative bacteria.
- VI) Discuss: Synchronous growth.

Q-2 Answer the following.

[10]

- A) Discuss applied areas of Microbiology.

OR

- A) Write in detail: Scanning electron microscope (SEM)

- B) Write in detail with neat diagram: Structure of Bacterial cell [Prokaryotic cell].

OR

- B) Explain methods for Quantitative measurement of bacterial growth.

Q-3 Answer the following in detail. (Any 2)

[10]

- A) Methods for Taxonomical classification of bacteria.
- B) Classify bacteria according to their nutrient consumption, optimum growth temperature, morphology, oxygen consumption and cell wall type.
- C) Discuss: Normal growth cycle of bacteria.

Section-2

Q-4 (A) Do as directed.

[07]

- I) What do you understand by Pure culture?
- II) Explain the role of null cell in immunity.
- III) Explain the role of Phagocytosis in immunity?
- IV) Give one example of biological method for isolation of bacteria.
- V) What is Toxoid?
- VI) What is D-value in Sterilization?
- VII) Explain the term: Pasteurization.

Q-4 (B) Answer the following in brief. (Any 4)

[08]

- I) Enumerate with examples: Selective methods for Isolation of bacteria.
- II) Explain: Principles of immunity.
- III) Write down the difference between active and passive immunity.
- IV) Differentiate between exotoxin and endotoxin.
- V) Explain: Rideal-Walker coefficient.
- VI) Comment: Supersaturated steam is better sterilizing agent than superheated steam.

Q-5 Answer the following.

[10]

- A) Explain in detail: Techniques for isolation of bacteria.

OR

- A) Give construction, working and applications of Autoclave.
- B) Write down the application of Antigen antibody reactions.

OR

- B) Write down the applications of Disinfectants in pharmacy.

Q-6 Answer the following in detail. (Any 2)

[10]

- A) Selective methods for isolation of bacteria.
- B) Discuss: Specific and nonspecific defense mechanisms of the body.
- C) Methods for sterility testing of pharmaceuticals.