

## Chapter -1

### Introduction

#### 2marks

1. Define microbiology?
2. Who is the father of microbiology?
3. Give an example of coccus and bacillus bacteria.
4. What are the shapes of vibrios & spirillum types of bacteria?
5. Swan-necked flask exp was done by which scientist?
6. Who proposed Germ theory of diseases?
7. Fungi cell wall is made up of which type material?

#### 5marks

1. Write short notes on Virus .
2. Write short notes on Fungi .
3. Write short note on Actinomycetes.
4. Classify microorganisms.
5. Short notes on origin of microbiology.
6. Write short notes on Germ-theory of diseases.

#### 10marks

1. What are the scope of microbiology?
2. Briefly describe about the structure and morphology of bacteria.
3. Explain
4. Swan-necked flask experiments by Lewis Pasteur.

## Chapter -2

### Microbial Nutrition & Growth

#### 2marks

1. Define microbial nutrients.
2. What is micronutrient ?

3. Define macronutrient.
4. What is generation time?
5. What is growth factor? Give example.
6. What is phagosome?
7. Which phase is known as period of exponential growth phase and why?

#### 5marks

1. Write short notes on Micronutrient.
2. Write short notes on Macronutrient.
3. Write short notes on Growth factors.
4. Write short notes on Lag phase.
5. Write short notes on stationary phase.
6. Difference between lag phase & log phase.

#### 10marks

1. What are different types of environmental factors that affect microbial growth.
2. Explain all phases of microbial growth with growth curve.
3. Classify the microorganisms according to nutritional requirements.

### Chapter-3 Tools and techniques

#### 2marks

1. What is sterilization?
2. Define staining.
3. Ultra structure of microbes is viewed by which type of microscopes.
4. What is Gram positive bacteria? Give an example.
5. What is Gram Negative bacteria? Give an example.
6. Define pasteurization? Give example.

5marks

1. Write down the difference between Gram positive & Gram negative bacteria.
2. Write down the procedure of Gram staining.
3. Write down the physical methods of sterilization.

10marks

1. Explain various pure culture methods.
2. Explain spread plate & streak plate method for isolation of pure culture.

Chapter-4

Microbial genetics

2marks

1. Define genetic recombination of bacteria.
2. Define mutation & what is mutagen.
3. Define point mutation.
4. Define induced mutation.
5. Define F plasmid.
6. Define conjugation.

5marks

1. Discuss about transformation of bacteria.
2. Write different types mutagens used for induced mutation.
3. Write different methods of isolation of microbial mutation.

10 marks

1. Explain various types of bacterial conjugation.
2. Explain the mechanism of transduction in bacteria.
3. Explain replica plating technique of mutant isolation.

## Chapter-5

### Microbial association

#### 2marks

1. Which enzyme used in Nitrogen fixation?
2. What is biological Nitrogen fixation?
3. Write difference between symbiotic and non symbiotic association.
4. Define Nitrogen fixation.

#### 5marks

1. What are the types of microbial association ,explain?
2. Write down different modes of microbial association.
3. Write down different modes of Nitrogen fixation.

#### 10 marks

1. What are the mechanisms of nitrogen fixation?
2. Explain the enzymes involved in Nitrogen fixation.

## Chapter-6

### Microbial metabolism

#### 2marks

1. What is aerobic & anaerobic respiration?
2. Define microbial respiration.
3. Define fermentation.
4. Define glycolysis
5. Give equation of photosynthesis.

### 5marks

1. Differentiate between respiration and fermentation.
2. Describe different pathways of fermentation.

### 10 marks

1. Explain microbial photosynthetic.
2. Explain Glycolytic pathway.
3. Describe Kreb's cycle of aerobic respiration.

### Chapter-7

### Food microbiology

### 2marks

1. Name 2 factors for food spoilage.
2. Write any 2 chemical factors of responsible for food spoilage.
3. Write any methods of food preservation.
4. Write 2 food borne disease name
5. Write 2 viral disease name and 2 bacterial disease name.

### 5marks

1. Short notes on food borne disease.
2. Short notes on viral disease.
3. Short notes on bacterial disease.

### 10marks

1. What are the methods of food preservation, describe briefly?
2. Describe about microbial food spoilage .

