

Unit 1 History of Development of MicrobiologyVery short answer/One word answer questions (1 mark)

SL. No.

1. What was the magnification of the microscope made by Leeuwenhoek?
2. What did Francesco Redi disprove?
3. Name the scientists credited with establishing the cell theory.
4. Who proposed “Omnis cellula a cellula?”
5. What will the effect of altitude on microbial growth be and why?
6. What is the origin of the word “yeast”?
7. What is Girolamo Fracastoro famous for?
8. Who invented the art of drying and fixing the bacterial smear on a glass slide before observation under a microscope?
9. What is meant by semi-synthetic penicillin?
10. Who discovered streptomycin?

Short questions (2 marks)

SL. No.

1. How did Spallanzani disprove Needham’s hypothesis in support of spontaneous generation?
2. In the late 19th century, an invention by Joseph Lister revolutionized surgery and significantly brought down the death rate. What was it?
3. What is a “magic bullet”?
4. What is the role of potassium tri-iodide in Gram staining?
5. What will happen if a yeast cell is Gram stained?
6. What is a Mycorrhiza?
7. What will be the difference in growth rate between a leguminous and a non-leguminous plant in terms of added nitrogenous fertilizer?
8. What do you mean by chemolithotrophic autotrophy? Give an example.
9. What is a Winogradsky column?
10. “Black Death” is one of the most devastating bacterial pandemic in the history of humankind.

State how did it happen?

Broad questions (more than 2 marks)

SL. No.

1. Describe how Pasteur's work conclusively disproved the theory of spontaneous generation?
2. Name any three significant contributions of Robert Koch to the discipline of practical microbiology.
3. State Koch's postulates.
4. Differentiate between variolation and vaccination.
5. Describe how Pasteur discovered serendipitously the vaccine for chicken cholera?
6. State the advantages and disadvantages of attenuated and heat killed vaccines.
7. State the fundamental difference in the mechanism of staining between nigrosine and methylene blue?
8. Give reasons why *Beggiatoa*, the soil bacteria became famous?
9. Who is known as the father of virology? State his contribution in this field.
10. State the contribution of Paul Ehrlich in the field of chemotherapy?

Unit 2: Diversity of Microbial World

Very short answer/One word answer questions (1 mark)

SL. No.

- 1 Name the causative agent of Giardiasis and Leishmaniasis.
- 2 Define the term "Digenetic parasite".
- 3 Name a bacterial species classified as high G+C gram-positive.
4. Define strain.
5. Why does bacterial species definition and biological species definition differ?
6. What is Mycology?
7. Name the type of phospholipids present in the cytoplasm membrane of the archaea-bacteria?
8. How are Mycoplasmas different from the other prokaryotes?

Short questions (2 marks)

SL. No.

1. Write the role of algae in agriculture?
2. What are mycotoxins?
3. What are the characteristic features of Giardia?
4. What are the two different forms of Leishmania? What is leptomonad form?
5. What is the basis of taxonomic classification?
6. Mention the similarities between archaea and bacteria.
7. How does the phenetic system of classification differ from a phylogenetic classification system?
8. With a proper example define type strain of a species.
9. Define Morphovar, biovar and serovar.

Broad questions (more than 2 marks)

SL. No.

1. Describe the economic importance of fungi in medicine, food and biodeterioration.
2. Write the role of algae in industry, food and environment separately.
3. Write the life cycle of *Leishmania donovani* with a proper diagram.
4. Distinguish between the Bacteria, Archaea and Eukaryotes.
5. Discuss about the merits and demerits of five kingdom classification.
6. What were the criteria for Whittaker's five kingdom classification?
7. Why is rRNA considered a good "chronometer"?
8. What are the salient features of Three domain classification?

Unit 3: An overview of scope of Microbiology

Very short answer/One word answer questions (1 mark)

SL. No.

1. What is microbiology?
2. What microbiology deals with dispersal of pathogenic microbes through air?

3. What is Geo-chemical Microbiology?

Short questions (2 marks)

SL. No.

1. Write the different branches of Microbiology.
2. What are the differences between soil microbiology and water microbiology?

Broad questions (4 marks)

SL. No.

1. Write the role of different scopes of microbiology in separate sections.