

Question Bank Microbiology I and II

Question Bank Microbiology I:

Fill the blanks with suitable words:

- 1- In 1858 Rudolf Virchow challenged the case for spontaneous generation with the concept of -----.
- 2- Bacteria reproduce by dividing into two equal cells; this process is called -----.
- 3- Most viruses are restricted to infecting specific types of cells of only one host species, a property known as -----.
- 4- Prions are resistant to nucleases but are inactivated with -----.
- 5- Microbial Genetics had developed in the late 1960s, when ----- showed that fragments of human or animal DNA can be attached to bacterial DNA.
- 6- Marine and freshwater microorganisms form the basis of the ----- in oceans, lakes, and rivers.
- 7- ----- is a sequence of experimental steps for directly relating a specific microbe to a specific disease.

Give example for the following:

- 1- Bacteria with sarcinae arrangement.
- 2- Bacteria with pallisades arrangement.
- 3- Monotrichous flagellated bacteria.

Write the shape of the following:

- 4- *Haloarcula japonica*.
- 5- Actinomycetes.
- 6- *Caulobacter crescentus*.

Differentiate between the following:

- A. Plasma membrane of prokaryotic and eukaryotic cell.
- B. *Bacillus anthracis* capsule and *Streptococcus pneumoniae* capsule.
- C. Basal body in Gram-negative bacteria and gram-positive bacteria.

Answer the following:

- A. How *E. coli* maintain good health for humans and many other animals?
- B. Write the importance of the extracellular polymeric substance (EPS) in biofilms?
- C. What are the most important Pasteur's contributions to the science of microbiology?
- D. How physician Francesco Redi in 1668 demonstrated that maggots did not arise spontaneously?

Question Bank Microbiology II:

Count the followings:

- A/ Effects of antimicrobial drugs on microbial cell components.
- B/ Classification of microorganisms based on their oxygen requirements.

Write about the followings:

- A/ Methods of Pasteurization.
- B/ Enzymes that break down hydrogen peroxide.

What are the differences between the followings?

- A/ Narrow spectrum and broad spectrum antimicrobials.
- B/ Obligate halophiles and facultative halophiles.
- C/ True Psychrophiles and psychrotrophs.

Explain the following:

- A- Why slow freezing is more harmful for microbes than refrigeration? B- Why legume cultivation is used to fertilize soil naturally?
- C- Why drugs that bind to the prokaryotic ribosome have potential therapeutic consequence?
- D- Why *Clostridium* spp. and *Bacillus* spp. are resistant to desiccation methods?

Write about the following:

- A- What are the factors that influence the effectiveness of antimicrobial treatment?
- B- Write four specific mechanisms of drug resistance.
- C- What are the factors that slowdown microbial growth in stationary phase?

Answer the following:

- A- Write the importance of viral envelope proteins.
- B- Count the methods by which bacteria transmit R factors that contain genes for drug resistance.
- C- What are the effects of hypertonic and hypotonic solutions on bacterial cell?
- D- What are the differences between viruses and viroids according to 1-Structure 2-Infection?