



Q1 /A-Define the meaning of Microbiology, then why Microbes are not always harmful

(10 Marks)

B/ Discuss briefly Bacteria play important roles in the global ecosystem?

(10 Marks)

Q2/ Match the group (A) to group (B):

(20 Marks)

Group A

- 1- Major achievements of Robert Koch
- 2- A compound microscope with a single eye piece.
- 3- Cyanobacteria are true prokaryotes.
- 4- Bacterial general properties.
- 5- Cell wall.

Group B

- A- Replicate by binary fission.
- b- Many pathogens have components that contribute to their pathogenicity.
- C- - Monocular
- D- Lipid A
- E- Photosynthetic
- F- He devised the solid medium to grow the microorganism to get single colonies.

Q3/ Put (T) or (F) for the following sentences

(20 Marks)

- 1- Method of viruses replicate either by binary fission or by mitosis.
- 2- Genus comes before species (e.g., *Escherichia coli*).
- 3- Objective is the important part in the microscope which is responsible to produce a clear image.
- 4- Louis Pasteur's contribution to microbiology is so great that he is considered to be the " Father of Microbiology.

Q4 Write about followings (Answer only two)

(20 Marks)

- 1- Write the common characteristics of the cell wall?
- 2- Bacterial classification based on O₂ requirements
- 3- Write the importance of Lipopolysaccharides (LPS)?

Q5 \ Explain the following sentences?

(20 Marks)

A- Binomial nomenclature, is a naming system used to name bacteria, which employs the names of the two level taxa, genus and species Binomial nomenclature includes?

B- Lag phase is the phases in Bacterial Growth phases; could you write the Main characteristics of the Lag phase?

Best wishes for all

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