

## MISSION M.B.BS

Date: 04/07/2022

Subject: BOTANY

Topic : BIOLOGICAL  
CLASSIFICATION - L9

Class: Standard XI

Instructions:

A

1. In lichens,

- ☒ A. the phycobiont is benefitted while the mycobiont is harmed
- ☒ B. the phycobiont is harmed while the mycobiont is benefitted
- ☒ C. both phycobiont and mycobiont are benefitted
- ☒ D. the phycobiont is benefitted while the mycobiont is neither benefitted nor harmed

Lichens are formed due to the symbiotic association of algae with fungi and both are benefitted. Phycobiont is the algal partner while mycobiont is the fungal partner.

2. Bacteriophage introduces \_\_\_\_\_ into the bacterial cell during infection.

- ☒ A. nucleic acid
- ☒ B. protein coat
- ☒ C. both nucleic acid and protein coat
- ☒ D. sometimes protein coat and sometimes nucleic acid

Bacteriophage is a virus that infects and replicates within a bacterial cell. Upon infection, it introduces its genetic material, which could be either DNA or RNA into the bacterial cell. The proteinaceous capsid coat remains outside the cell.

## MISSION M.B.BS

3. Who was the first scientist to crystallise a virus?

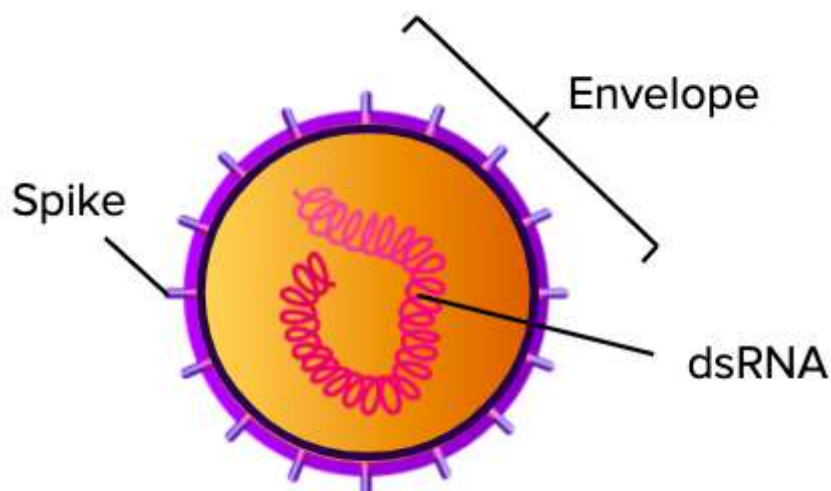
- ☐ A. Pasteur
- ☐ B. Beijerinck
- ☒ C. Stanley
- ☐ D. Ivanowsky

Stanley was the first scientist to crystallize a virus. The virus he first crystallised was tobacco mosaic virus, and he found that the crystal was made of proteins.

4. Reovirus has

- ☐ A. ds DNA
- ☒ B. ds RNA
- ☐ C. ss RNA
- ☐ D. ss DNA

Reoviruses have ds RNA. These viruses cause mild gastroenteritis in humans.



## MISSION M.B.BS

5. Bacteriophage is a

- ☒ A. virus
- ☐ B. bacteria
- ☐ C. viroid
- ☐ D. spirochaete

Bacteriophage is a virus that infects and replicates within a bacterial cell. Viroids are infectious RNA molecules, without a protein coat. Spirochaetes are spirally coiled bacteria.

6. Viroids differ from prions in

- ☐ A. being infectious
- ☐ B. being microscopic
- ☒ C. having nucleic acid
- ☐ D. having cell wall

Viroids are infectious low molecular weight RNA. They do not have a protein coat like viruses or any protein components like the prions. Prions are infectious proteins. They do not have any genetic material. They cause infection by inducing misfolds in normal proteins too.

## MISSION M.B.BS

7. Animals differ from plants in that they

- ☒ A. have heterotrophic mode of nutrition
- ☐ B. can sense and respond to stimuli
- ☐ C. have a cell wall
- ☐ D. have chloroplasts

Unlike plants that can synthesise their own food by the process of photosynthesis, animals depend on other plants or animals for food. Hence, they are heterotrophic. Animals also have other well defined features like a proper nervous system that helps them in sensing the surroundings and responding accordingly. Plants also sense the surroundings and respond to stimuli but in the absence of a nervous system. Animal cells do not have cell walls or chloroplasts. Both these are present in plant cells.

8. Viruses grow

- ☐ A. only inside plant cell
- ☐ B. only inside animal cell
- ☐ C. only inside bacterial cell
- ☒ D. inside any living cell

Viruses are intracellular obligate parasites that cannot live independently. It needs a host to replicate which can be any living cell to replicate and survive.

## MISSION M.B.BS

9. How many diseases given here are caused by prions?

Bovine spongiform encephalopathy (BSE), Creutzfeldt Jakob Disease (CJD), Potato spindle tuber disease, Common cold, Rabies

- ☐ A. Five
- ☐ B. Four
- ☐ C. Three
- ☒ D. Two

Prions are infectious proteins that cause diseases in humans and animals. From the diseases mentioned, bovine spongiform encephalopathy (BSE) and Creutzfeldt-Jakob disease (CJD) are caused by prions. Potato spindle tuber disease is caused by viroids. Common cold and rabies are caused by viruses.

10. Which of the following organisms are not found in areas polluted with sulphur dioxide?

- ☐ A. Green plants
- ☒ B. Lichens
- ☐ C. Blue green algae
- ☐ D. Herbivores

Lichens do not grow in areas polluted by certain air pollutants like sulphur so they are referred to as good indicators of pollution (SO<sub>2</sub> pollution).