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**B. Sc. (Part I) EXAMINATION, 2017**

**MICROBIOLOGY**

**Paper Second**

**(Bacteria, Virus and Protozoa)**

*Time : Three Hours*

*Maximum Marks : 50*

**Note : Attempt all Sections.**

**Section—A**

**1 each**

**(Objective Type Questions)**

**Note : Attempt all questions.**

1. Microorganisms were first discovered by :
- (a) Robert Koch
  - (b) Leeuwenhoek
  - (c) Louis Pasteur
  - (d) Needham

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2. The process of fermentation and pasturization were discovered by :
  - (a) Robert Koch
  - (b) Louis Pasteur
  - (c) Joseph Leister
  - (d) John Tyndall
  
3. Plant Viruses usually have :
  - (a) DNA
  - (b) RNA
  - (c) DNA or RNA
  - (d) DNA and RNA
  
4. Who used the word virus for the first time ?
  - (a) Beijernick
  - (b) F. C. Bawaden
  - (c) D. Iwanowski
  - (d) W. M. Stanley
  
5. Highly the thermophilic bacterial spores are known as :
  - (a) Arthrospores
  - (b) Conidia
  - (c) Endospores
  - (d) None of these

6. Gram staining method was developed in :
- (a) 1874
  - (b) 1884
  - (c) 1768
  - (d) None of these
7. Microbes that manufacture their food using light energy are :
- (a) Photoautotrophs
  - (b) Chemoautotrophs
  - (c) Chemoheterotrophs
  - (d) None of these
8. Which of these is a viral disease of plant ?
- (a) Citrus canker
  - (b) Brown rot of potato
  - (c) Pea mosaic
  - (d) None of these
9. Reverse transcriptase is a useful enzyme to have when :
- (a) An RNA virus converts its RNA into DNA
  - (b) Nutrients are scarce
  - (c) There are no host cells present
  - (d) None of these

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10. The main agents of virus transmission are :
- (a) Insects
  - (b) Birds
  - (c) Fungi
  - (d) None of these
11. *Trypanosoma* causing sleeping sickness belongs to class :
- (a) Rhizopoda
  - (b) Mastigophora
  - (c) Sporozoa
  - (d) Ciliata
12. Reservoir host for *Leishmania* is :
- (a) Dog
  - (b) Jackal
  - (c) Squirrel
  - (d) All of these
13. The vector for *Trypanosoma* is :
- (a) *Glossina palpatris*
  - (b) *G. tachinoides*
  - (c) Both (a) and (b)
  - (d) None of these

14. Connecting link between plant and animal kingdom :
- (a) *Paramecium*
  - (b) *Euglena*
  - (c) Bacteria
  - (d) Virus
15. Which species of *Plasmodium* show longest incubation periods ?
- (a) *Vivax*
  - (b) *Flaciparum*
  - (c) *Malariae*
  - (d) *Ovale*
16. A bacteriophage can be recognised by its :
- (a) Irregular shape
  - (b) Round shape
  - (c) Tadpole shape
  - (d) None of these

## Section—B

2 each

## (Short Answer Type Questions)

17. Write short notes on any *seven* of the following :

- (a) Plant Virus
- (b) Binary Fission in *Euglena*

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- (c) Endospores
- (d) Koch's postulates
- (e) Mycoplasmal viruses
- (f) Slow viruses
- (g) Cynophages
- (h) Transmission of viruses
- (i) Dumdum fever
- (j) HIV

## Section—C

5 each

## (Long Answer Type Questions)

Note : Attempt any *four* questions.

18. Describe the occurrence, structure and modes of locomotion, nutrition and reproduction of *Euglena*.
19. Discuss about Lytic and Lysogenic type of life-cycle in Bacteriophage.
20. Write short notes on any *two* of the following :
  - (a) Important plant viral disease
  - (b) Control of virus disease
  - (c) Classification of viruses
21. Write short notes on any *two* of the following :
  - (a) Beneficial activities of bacteria
  - (b) Role of Bacteria in the production of Antibiotics
  - (c) Harmful activities of Bacteria

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22. Describe in short the various method of reproduction in bacteria and describe the mechanism of transformation in detail.

*Or*

Explain the ultrastructure of a bacterial cell.

23. What are the causes of Kala-azar ? Give a detailed description of the causative agent and its preventive measures.

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