M. Sc. (Biotechnology) Sem-I (2012 Course)(Choice Based Credit System) : SUMMER - 2019

SUBJECT : MICROBIOLOGY BASIC AND APPLIED

Day : Friday
Date : 05/04/2019

S-2019-1408

Time : 10.00 AM TO 01.00 PM
Max. Marks : 60

N. B. :

1) All questions are **COMPULSORY**.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in the SAME answer books.
4) Draw neat and labeled diagram **WHEREVER** necessary.

SECTION – I

Q. 1 Answer **ANY FIVE** of the following: **(10)**

a) Explain the structure of Gram negative cell wall.
b) Write characteristic features of Archaea.
c) What are microaerophilic bacteria? Write two examples.
d) Explain the structure of cyanobacterial cell wall.
e) What are autotrophic microorganisms? Give two examples.
f) What are Growth factors? Explain its functions.

Q. 2 Answer **ANY TWO** of the following: **(10)**

a) Write short note of cyanobacteria and its application.
b) With help of diagram explain various stages of bacterial growth curve.
c) Explain different classes of microorganisms based on carbon, electron and energy sources.

Q. 3 Answer **ANY TWO** of the following: **(10)**

a) Explain the structure of plasmid with examples. Write its various applications.
b) Explain the ray diagram of fluorescent microscope. Write its advantages.
c) What are mutagenic agents? Explain the action of UV rays.

SECTION – II

Q. 4 Answer **ANY FIVE** of the following: **(10)**

a) Explain ultra structure of TMV.
b) Explain cultivation of animal virus using embryonated egg.
c) Explain ICTV classification of virus.
d) Explain various methods of penetration in animal virus.
e) Define serotype. Give two examples.
f) What is cytopathic effect?

Q. 5 Answer **ANY TWO** of the following: **(10)**

a) Explain the life cycle of retrovirus.
b) Explain the structure of influenza virus.
c) Explain lysogenic life cycle of bacteriophage.

Q. 6 Answer **ANY TWO** of the following: **(10)**

a) Explain the steps involved in production of bio-pesticides.
b) Explain the importance of extremophiles in medical applications.
c) Explain the structure submerged fermentors.

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