



Seat No. _____

No. of Printed Pages: 02

[62]

SARDAR PATEL UNIVERSITY
B. Sc. (3rd Semester) EXAMINATION – JUNE 2022(NC)
Thursday, 16th JUNE, 2022
12:00 p.m. to 02:00 p.m.
SUBJECT: MICROBIOLOGY (US03CMIC02)
Fundamental Microbiology-II

Note: (i) Attempt all questions.

Total Marks: 70 Marks

(ii) Marks are indicated on the right-hand side.

Q.1 Choose the correct option from the given options for the following questions: [10]

- _____ contain 70S ribosome distributed in cytoplasm.
(a) Protists (b) Eucaryotes
(c) Procaryotes (d) Animalia
- _____ means the orderly arrangement of units under study into groups of larger units.
(a) Classification (b) Identification
(c) Nomenclature (d) Characterization
- According to Whittaker's five kingdom classification, micro-organisms are part of which three kingdoms?
(a) Monera, Protista, Plantae (b) Monera, Protista, Fungi
(c) Protista, Plantae, Animalia (d) Fungi, Protista, Plantae
- Which of the following in bacteriological media act as a source of nitrogen?
(a) Peptone (b) NaCl
(c) Glucose (d) Agar-agar
- Organisms that have special nutritional requirements like vitamins and other growth-promoting substances are known as _____.
(a) Auxotrophic organisms (b) Autotrophic organisms
(c) Obligate organisms (d) Fastidious organisms
- In which phase of the bacterial growth curve, growth rate is equal to death rate?
(a) Lag (b) Stationary
(c) Log (d) Decline
- Which of the following technique is used for the isolation of stringent anaerobes?
(a) Roll-tube technique (b) Spread plate technique
(c) Four-flame technique (d) Pour plate technique
- Following is/are the technique/s used for the measurement of bacterial growth:
(a) Cell count (b) Cell mass
(c) Cell activity (d) All of the above
- Tobacco Mosaic Virus (TMV) exhibit typical _____ symmetry.
(a) Icosahedral (b) Helical
(c) Complex (d) None of the above
- The word "bacteriophage" was given by _____.
(a) Felix d'Herelle (b) Martinus Beijerinck
(c) Louis Pasteur (d) Luria-Delbruck

1

(P.T.O.)

Q.2 Fill up the blanks with appropriate answer:

[08]

1. _____ is composed of a collection of species.
2. _____ media is used for the differentiation of various kinds of media.
3. The time required by the bacterial population to double itself is called _____.
4. Chicken-embryo technique is used to cultivate various types of _____ viruses.

Justify the following statements with True or False:

5. Determination of morphological characteristics usually requires studying individual cells of a pure culture.
6. Organisms that use radiant light as energy source and inorganic compounds as source of electrons are called Chemoorganotrophs.
7. When all the cells of bacterial culture are in the same stage of their growth cycle, they are known as Continuous culture.
8. Icosahedron is a regular polyhedron with 20 triangular facets and 12 vertices.

Q.3 Answer the following in brief: (Attempt Any TEN)

[20]

1. What are the goals of classification?
2. Write a note on Haeckel's classification.
3. Define: (a) Pure culture (b) Pathogenicity.
4. Enlist common ingredients of bacteriological media.
5. What do you mean by Phototrophs and Autotrophs?
6. Give names of different types of media used in bacteriology.
7. Define: (a) Growth rate (b) Isolation.
8. Enlist various methods for preservation of culture.
9. Write about the use of micromanipulator.
10. Define: (a) Burst size (b) Eclipse period.
11. Draw a neat labelled diagram of a typical bacteriophage.
12. Describe briefly about phage nucleic acids.

Q.4 Answer the following in detail: (Attempt Any FOUR)

[32]

1. Enlist methods of classifying bacteria and explain Numerical Taxonomy in detail.
2. Explain Whittaker's Five Kingdom Classification.
3. Write about different nutritional requirements of bacteria.
4. Write a note on: Gaseous requirements of bacteria.
5. Describe the bacterial growth curve with suitable diagram.
6. Discuss different methods employed for the isolation of pure culture.
7. Write a short note on cultivation of animal viruses.
8. Explain lysogenic cycle of bacteriophage in a bacterial host.

-----><><-----><<-----