SARDAR PATEL UNIVERSITY
B.Sc. Examination – 2022
Date: 17/06/22, Friday
Microbiology - Semester III
US03CMIC21 – Elements of Microbiology

Time: 12.00 pm to 2.00 pm   Total Marks: 70

N.B. (i) Attempt All questions. (ii) Marks are indicated on the right.

Q.1. Select the right answer.   **(10)**

1) A technique of sterilization by discontinuous heating is known as _____.
   (a) Pasteurisation   (b) Tyndallisation
   (c) Sterilization   (d) None of these

2) Vaccine against Cholera, Anthrax and Rabies was discovered by_____.
   (a) Theodor Schwann   (b) Salmon Walkman
   (c) Louis Pasteur   (d) John Tyndall

3) Function of capsule is _____.
   (a) Food storage   (b) Attachment
   (c) Protection   (d) All of these.

4) Cell membrane is made up of _____.
   (a) Peptidoglycan   (b) Lipids
   (c) Teichoic acid   (d) None of these

5) Cocci are arranged as _____.
   (a) Diplococcus   (b) Tetrad
   (c) Sarcina   (d) All of these

6) To observe living unstained cells _____ microscopy is used.
   (a) Electron   (b) Phase-contrast
   (c) Fluoresence   (d) None of these

7) _____ is an example of decolouriser.
   (a) Iodine   (b) Acid
   (c) Alcohol   (d) None of these.

8) A collection of similar species is known as _____.
   (a) Order   (b) Genus
   (c) Family   (d) Class.

9) Percentage Similarity (%S) is calculated in _____ .
   (a) Intuitive method   (b) Numerical Taxonomy
   (c) Genetic Relatedness   (d) None of these.

10) Classification of living organisms into groups is known as _____.
   (a) Taxonomy   (b) Classification
   (c) Nomenclature   (d) None of these.

(P.T.O.)

①

Q.2) (a) Fill in the blank. (8)

1) First antibiotic penicillin was discovered by _____ scientist.
2) _____ are non-living ribbon like or tubular appendages secreted by some aquatic bacteria.
3) Total magnification achieved through oil immersion lens is _____.
4) Heteroduplexes are formed in _____ experiment.

(b) State True or False.

1) Paul Ehrlich discovered Phagocytosis.
2) Bacterial endospore is composed of Ca-dipicolonic acid.
3) *Mycobacterium bovis* is an example of Acid-Fast bacteria.
4) As per Binomial nomenclature bacterial name can be written in capital letters.

Q.3) Answer in brief (Any10) (20)

1) Name a scientist along with his contribution in field of agriculture.
2) Name 2 contributions of Louis Pasteur.
3) Write Koch's Postulate.
4) Draw a labelled diagram of bacterial cell.
5) What is Protoplast and Spheroplast?
6) Write 2 differences between Prokaryotic and Eukaryotic cell.
7) What is the difference between SEM and TEM?
8) Give an example of Intensifier and Mordent.
9) What is leuco compound? Give example.
10) Write about Haeckel's Classification.
11) Name 4 divisions of Bergey's manual.
12) Define: Strain and Species

Q.4) Answer in detail. (Any four) (32)

1) Explain: Spontaneous generation verses Biogenesis.
2) Explain: Germ Theory of Disease.
3) Short Note: Ultra structure of Bacterial Flagella.
4) Write in Detail: Gram Positive bacterial cell-wall.
5) Define: Dye. Draw basic structure of Dye and explain different types of Dyes in detail.
6) Short Note: Fluorescence Microscopy.
7) Explain: Whittaker's five kingdom in detail.
8) List major characteristics of micro-organisms and explain morphological and cultural characters in detail.

* * * * * * * * *