

SEAT No. _____

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SARDAR PATEL UNIVERSITY

B Sc III Semester Examination January-2021

US03CMIC02 Fundamentals of Microbiology

Date: 5-1-2021

Time 2:00 PM to 4:00 PM

Tuesday

Total Marks: 70

Q:1

Multiple choice questions:

Answer both code and word compulsorily.

[10]

- 1 According to Whittaker's 5 kingdom concept, cyanobacteria are included in _____.
a) Plante b) Monera c) Animallia d) Protista
- 2 Which one of the following is the lowest taxonomic rank?
a) Species b) Kingdom c) Domain d) Genus
- 3 The latest classification in biology is due to contribution of
a) Whittaker b) Haeckel c) Bergey d) Carl Woese
- 4 The organisms use organic compound as an electron donor are known as _____.
a) chemolithotrophs b) lithotrophs c) autotrophs d) heterotrophs
- 5 The ideal time for doubling of *E coli* is _____ minutes.
a) 15 b) 30 c) 20 d) 60
- 6 Exhaustion of nutrients and production of toxic products during growth is observed in _____ phase.
a) log b) Stationary c) Lag d) decline
- 7 The most common method of reproduction of bacteria is _____.
A) Binary fission b) Budding c) Fragmentation d) Plasmogamy
- 8 _____ viruses cultivated through chick embryo technique.
a) Animal b) plant c) bacteriophage d) none
- 9 _____ culture is most preferred for viral vaccine production.
a) primary b) secondary c) both d) none
- 10 _____ has complex symmetry.
a) Animal b) plant c) bacteriophage d) none

Q:2

Do as directed

Fill in the blanks.

[08]

- 1 In Latin, bacilli mean _____.
- 2 The organisms tolerate high sugar concentrations is called _____.
- 3 Micromanipulator is used to _____ cells.
- 4 _____ coined the term bacteriophage.

State true or false

- 1 Bergey's manual is an authentic source to study bacterial classification.
- 2 The important ingredient of chocolate agar is chocolate.
- 3 Bacterial culture is continuously added in continuous culture.
- 4 Polio virus has helical symmetry.

[1]

[P.T.O.]

Q:3

Short Questions: Attempt any TEN.

[20]

- 1 Enlist major classes of Whittaker's classification.
- 2 What is numerical taxonomy?
- 3 Define: Clone and nomenclature.
- 4 How pH affects the bacterial growth?
- 5 Differentiate autotrophs V/S heterotrophs.
- 6 What are halophiles; what is their habitat?
- 7 What is synchronous growth?
- 8 Define ; Generation time and Turbidostat
- 9 Draw labeled typical bacterial growth curve.
- 10 "Viruses are connecting link between living and non-living".-Comment.
- 11 Write in short about TMV.
- 12 Draw labelled diagram of embryonated egg.

Q:4

Long Question: Attempt ANY FOUR

[32]

- 1 Give detail account on important characteristics used for classifying bacteria.
- 2 Write short notes on
 - a) nucleic acid hybridization.
 - b) Fatty acid profile
- 3 Write in detail about various types of bacteriological media.
- 4 Describe nutritional requirements of bacteria.
- 5 Narrate different methods used to preserve the pure cultures.
- 6 Enlist and describe methods of isolating pure culture.
- 7 Describe lytic cycle.
- 8 Explain lysogenic cycle.

————— X —————

[2]