

SEAT No. _____



No. of Printed Pages : 02

[21]

SARDAR PATEL UNIVERSITY
3rd SEMESTER - B.Sc.
USO3CMIC21

Elements of Microbiology-I

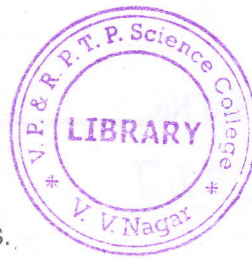
Date : 3/12/2021
Time : 3-00 to 5-00 PM.

Day: Friday.
Total marks :70

Q.1 Select the correct answer for each question from the options given 10 below.

- 1 Who developed the use of antiseptic for the first time?
(a) Louis Pasteur. (b) Robert Koch.
(c) Joseph Lister. (d) None of these.
- 2 Who explained the importance of bacteria in converting atmospheric nitrogen to organic nitrogen?
(a) Sergei Winogradsky. (b) Beijerinck W
(c) Christian Hansen. (d) None of these.
- 3 Which of the following are components of bacterial flagella?
(a) Hook. (b) Filament.
(c) Basal body. (d) All of these.
- 4 Function of stalk, as appendage, is _____.
(a) Nutrient adsorption. (b) Attachment.
(c) Provide rigidity. (d) None of these.
- 5 Which bacteria divide in one plane and shows chain arrangement in microscopy?
(a) *Streptococcus*. (b) *Staphylococcus*.
(c) *Micrococcus*. (d) None of these.
- 6 Dyes with anionic auxochrome group are known as _____.
(a) Neutral. (b) Acidic.
(c) Basic. (d) None of these.
- 7 _____ dye can be employed for negative staining technique.
(a) Methylene blue. (b) Gention violet.
(c) Nigrosine. (d) None of these.
- 8 The word bacteriophage was coined by _____.
(a) De Herelle. (b) Frederick Twort.
(c) Both (a) & (b). (d) None of these.
- 9 _____ can be used for cultivation of bacteriophage for cultivation of bacteriophage.
(a) Chick embryo. (b) Tissue culture.
(c) Both (a) & (b). (d) None of these.
- 10 _____ virus shows helical symmetry.
(a) Polio. (b) TMV.
(c) Hepatitis. (d) None of these.





Q.2

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A Give appropriate answers for the given blanks.

- 1 _____ described the process of phagocytosis.
- 2 Bacterial flagella are made up of _____ protein.
- 3 _____ is used as mordant in Gram's staining technique.
- 4 A group of similar order are placed in one same _____.

B State if the given statement are true or false.

- 1 H Schroder and T Van Dutch used cotton plug to pass free air into flasks.
- 2 Heat can be used as intensifiers in the staining process,
- 3 Cytoplasmic membrane of prokaryotes is made up of peptidoglycan.
- 4 Bacterial classification was proposed by R.H. Whittaker.

Q.3

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Answer the following short questions:- (Attempt any ten)

- 1 Write contribution of Edward Jenner.
- 2 What is pure culture? Who developed it for the first time.
- 3 Enlist scopes of bacterial use in agriculture.
- 4 Enlist functions of bacterial capsule.
- 5 Write about composition of prokaryotic cytoplasmic membrane.
- 6 Give examples of granules observed in bacterial cell.
- 7 What are mordants? Give its examples.
- 8 Define:- Dye. Also write its components.
- 9 What is differential staining technique? Write its importance.
- 10 What is numerical taxonomy?
- 11 Enlist classification proposed by E.H. Haeckel.
- 12 What is nomenclature? Write its importance.

Q.4

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Answer the following long questions:- (Attempt any four)

- 1 Give detail on Germ theory of disease.
- 2 Write on contributions of various scientists supporting Biogenesis.
- 3 What is phase contrast microscopy? Write its mechanism and applications.
- 4 What is Gram's staining? Write its mechanism in detail.
- 5 Write an exhaustive note on :- "Bacterial cell wall."
- 6 What are endospore? Write stages of sporulation along with diagram.
- 7 Write a note on :- "Nucleic acid hybridization."
- 8 Write in detail about Whittaker's five kingdom classification.
