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SEAT No. _____

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SARDAR PATEL UNIVERSITY
B. Sc. Semester- III (Old Course)

June 2022

US03EMIC01 - Fundamental Microbiology

Date: 17/06/2022, Fri day

Time: 12:00pm to 02:00pm

Marks: 70

Q-1 Select the Right answer

[10]

1. Who invented microscope?
 - a. Paul Ehrlich
 - b. Elie Metchnikoff
 - c. Antony van leuvenhook
 - d. Joseph Lister
2. The process of Phagocytosis was discovered by
 - a. Paul Ehrlich
 - b. Elie Metchnikoff
 - c. Alexander Fleming
 - d. Joseph Lister
3. Gram positive bacteria contain thick _____ than in gram Negative bacteria.
 - a. Lipid layers
 - b. Phospholipids layers
 - c. Peptidoglycan layers
 - d. All of the above
4. In Bacteria, _____ is responsible for permeability of chemicals.
 - a. Pili
 - b. Flagella
 - c. Cell membrane
 - d. All of the above
5. Flagella are made up of _____ Protein
 - a. Flagellin
 - b. Globulin
 - c. Albumin
 - d. Pilin
6. The oil immersion lens of the microscope provide magnification of _____
 - a. 20 X
 - b. 40 X
 - c. 100 X
 - d. none of the above
7. In which staining, cell is stained and background remain unstained?
 - a. Positive
 - b. Negative
 - c. Acid fast
 - d. Differential
8. Which of the following is not a differential stain?
 - a. Gram stain
 - b. Acid fast stain
 - c. Capsule stain
 - d. All of the above
9. The organisms which can reduce organic compounds as electron donors are called;
 - a. Chemotrophs
 - b. Heterotrophs
 - c. Lithotrophs
 - d. Organotrophs
10. Which of the following in bacteriological media acts as a source of Carbon?
 - a. Peptone
 - b. NaCl
 - c. Glucose
 - d. Meet extract

Q-2 Fill in the blanks and True/False.

[08]

1. _____ discovered the causative agents of anthrax and tuberculosis?
2. Bacteria consist of a single polar flagellum is termed as_____.
3. The eyepiece of the microscope provides magnification of_____.
4. _____ Medium can be used for differentiate growth of *Escherichia coli* & *Enterobacter aerogens*?
5. Tyndalization process was discovered by John Needham. True/False
6. Bacterial capsule is made up of polysaccharide. True/False
7. Gram staining is an example of differential staining. True/False
8. Secondary metabolites are produce during Decline phase in growth curve of bacteria. True/False

Q-3 Answer the following in brief (Any Ten)

[20]

- 1) Write the contribution of Joseph Lister.
- 2) What is attenuated culture?
- 3) What is phagocytosis?
- 4) Define Endospore.
- 5) What is pili?
- 6) What is the difference between Prokaryotic and eukaryotic cell?
- 7) Explain the roll of decolorizer in Gram staining.
- 8) What is Resolving power?
- 9) Define: Numerical aperture.
- 10) What is the importance of pureculture?
- 11) Define: (a) Autotrophs. (b) Heterotrophs.
- 12) Define selective media with an example.

Q-4 Answer the following in detail (Any four)

[32]

1. Write notes on Germ theory of disease.
2. Describe the development in the field of medical microbiology.
3. Write about the structure and composition of bacterial cell wall.
4. Describe the ultra structure of bacterial flagella.
5. Explain in detail about simple staining and its types.
6. Enlist component parts of microscope and write the functions of each component.
7. Enlist and explain methods used in isolation of pure culture.
8. Explain in detail about ingredients of bacteriological media.
