

[73/A-11]

SARDAR PATEL UNIVERSITY

S.Y.B.Sc EXAMINATION - SEMESTER-III

MICROBIOLOGY – US03CMIC22 (Microbial Physiology)

Date: 06/01/2021

Time: 02:00 PM to 04:00 PM

Day: Wednesday

Total marks: 70

N.B: Figures on the right indicate marks.

Q.1

Multiple Choice Questions.

10

- 1 The bacteria which can use reduced inorganic compound as electron donor are known as..
(a) Chemotrophs (b) Organotrophs
(c) Phototrophs (d) Lithotrophs
- 2 Which of the following is a trace element?
(a) Potassium ion (b) Sodium ion
(c) Copper ion (d) Magnesium ion
- 3 Which of the following is used as solidifying agent?
(a) Beef Extract (b) Pepton
(c) Agar Agar (d) Yeast extract
- 4 Fluid thioglycolate medium is used for cultivation of
(a) Aerobic bacteria (b) Anaerobic bacteria
(c) Virus (d) All of the Above
- 5 The rate of generation of new bacterial cell becomes equal to the death rate during which growth phase?
(a) Lag Phase (b) Log phase
(c) Stationary Phase (d) Decline phase
- 6 MacConkey's agar media used for isolation of Gram-ve bacteria. It is consist of _____ which inhibits the growth of Gram+ve bacteria.
(a) Blood (b) Tryptophan
(c) Peptone (d) Bile salt
- 7 All laboratory glassware and syringes are best sterilized by
(a) Hot air oven (b) Boiling
(c) Irradiation (d) None
- 8 Moist heat kill microorganisms by
(a) Oxidizing Proteins (b) Breaking down Lipids
(c) Coagulating Proteins (d) Cellwall destruction
- 9 Which of the following is an example of ionizing radiation
(a) X rays (b) Gamm rays
(c) Both A and B (d) U.V. rays
- 10 Disinfectants kill the following microorganism
(a) All microorganisms (b) Pathogens
(c) Viruses & Fungi (d) Non pathogens



Q.2 A State whether the given statements are true or false. 02
1 Autotrophs are the bacteria which will use CO₂ as a sole source of carbon.
2 Autoclave is working on the principle of moist heat.

B Fill in the blanks with appropriate answer. 06
1 _____ is the generation time for *Escherichia Coli* .
2 Organisms which use light as energy source & CO₂ as their Carbon source are known as _____
3 Media which inhibit the growth one type of bacteria and allow other type of bacteria to grow are known as _____
4 Write down the growth equation -----
5 Name of the technique which is used to grow bacterial culture continuously _____
6 70% solution of _____ alcohol are effective in killing vegetative bacteria.

Q.3 Give SHORT answers to the following questions. (Attempt Any ten) 20

- 1 Write briefly about Enriched media.
- 2 Explain facultatively anaerobic bacteria.
- 3 Give disadvantages of Pour plate technique used for isolation of bacteria.
- 4 Define Synchronous growth and Continuous culture.
- 5 What is the difference between Stationary phase and death phase?
- 6 Explain any one technique to achieve Continuous culture.
- 7 What is generation time? Write its equation.
- 8 Mode of action of heavy metals.
- 9 Enlist the factors that determine the time of survival of microorganisms after desiccation.
- 10 Mode of action of Chlorine and its derivatives.
- 11 Write down practical application of triphenylmethane dyes.
- 12 Discuss Pasteurization in brief.

Q.4 Answer the following LONG Question:- (Attempt any four) 32

- 1 Detailed note on nutritional classification of bacteria (nutritional types).
- 2 Enlist all methods of isolation techniques and discuss any three in detail.
- 3 Describe common ingredients of media.
- 4 Normal Growth curve of Bacteria.
- 5 Detailed note on measurement of growth.
- 6 Discuss in detail High Temperature as Physical Agent.
- 7 Characteristics of an ideal antimicrobial chemical agent.
- 8 Phenol and Phenolic Compounds as Antimicrobial chemical agents

