

Seat No. _____



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SARDAR PATEL UNIVERSITY
S.Y.B.Sc EXAMINATION - SEMESTER-III

MICROBIOLOGY – US03CMIC52
Introduction to Microbial Physiology

Date: 21/11/2022

Day: Monday

Time: 10:00 AM to 1:00 PM

Total marks: 70

N.B: Figures on the right indicate marks.

Q.1 Multiple Choice Questions.

10

- 1 Molecules dissolved in water are called _____.
(a) Solute (b) Solvent
(c) Emulsifier (d) None of the above
- 2 Oxygen region of water molecule is _____.
(a) Having slight positive charge (b) Having slight negative charge
(c) Neutral (d) None of the above
- 3 Enzymes involved in electron transfer reaction are called _____.
(a) Oxidoreductases (b) Transferases
(c) Ligases (d) Lyases
- 4 Living organisms require nutrients for _____.
(a) Maintenance (b) Growth
(c) Reproduction (d) All of the above
- 5 The organisms that derive nutrients and grow within the host cell are called _____.
(a) Autotrophs (b) Phototrophs
(c) Hypotrophs (d) Lithotrophs
- 6 In *E.coli*, β -galactosidase enzyme is required for the utilization of _____.
(a) Galactose (b) Lactose
(c) Sucrose (d) Fructose
- 7 _____ organisms can grow at 0° C.
(a) Thermophilic (b) Mesophilic
(c) Psychophilic (d) All of the above
- 8 Which of the following can have bactericidal effect?
(a) High temperature (b) Low temperature
(c) Filtration (d) All of the above
- 9 Filters used to remove microorganisms are composed of _____.
(a) Cellulose acetate (b) Cellulose nitrate
(c) Polycarbonate (d) All of the above
- 10 _____ can inhibit cell wall synthesis in bacteria.
(a) Bacitracin (b) Streptomycin
(c) Tetracyclin (d) Chloramphenicol

Q.2 Give SHORT answers to the following questions. (Attempt Any ten) 20

- 1 What is enzyme denaturation?
- 2 With suitable example, explain the role of a coenzyme?
- 3 Differentiate between DNA & RNA.
- 4 What are Osmotrophs?
- 5 Differentiate between Heterotrophs & Autotrophs.
- 6 What is the role of agar agar powder in nutrient medium?
- 7 Enlist the techniques used for viable cell count.
- 8 What is synchronous growth?
- 9 Enlist the reasons for enumeration of microorganisms.
- 10 Ideal characteristics of antibiotics.
- 11 What is lyophilization?
- 12 Mode of action of streptomycin.

Q.3 Write short notes on

(a) Carbohydrates. **05**

(b) Structure of protein. **05**

OR

Q.3 Write short notes on

(a) Mechanism of enzyme action. **05**

(b) Factors affecting enzyme action. **05**

Q.4 Enlist and explain the major bioelements used for microbial nutrition. 10

OR

Q.4 Giving suitable example, explain in detail on the nutritional types of 10
microorganisms based on energy.

Q.5 Write short notes on

(a) SPC. **05**

(b) Chemostat. **05**

OR

Q.5 Write short notes on

(a) Oxygen toxicity. **05**

(b) Mathematical expression of growth. **05**

Q.6 Write short notes on

(a) Use of radiation in control of microorganisms. **06**

(b) Canning. **04**

OR

Q.6 What is food preservation? Enlist & explain various chemicals used as food 10
preservatives.

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