

**B.M.S COLLEGE FOR WOMEN AUTONOMOUS**  
**BENGALURU – 560004**

**END SEMESTER EXAMINATION – SEPTEMBER / OCTOBER 2022**

**B.Sc - II Semester**  
**Microbiology-Microbial Biochemistry and Physiology**

**Course Code: MB2DSC02**

**Duration: 2 ½ Hours**

**QP Code:2020**

**Max Marks: 60**

**Instructions to the candidates:**

- 1) Answer all the sections.**
- 2) Draw diagram wherever necessary.**

**SECTION – A**

I. Answer **any five** of the following: **(5x2=10)**

1. Explain any two properties of water.
2. What are chemolithotrophs? Give examples.
3. Write the structure of ATP.
4. Differentiate between saturated and unsaturated fatty acids.
5. Illustrate substrate level phosphorylation with an example.
6. Explain generation time.

**SECTION - B**

II. Answer **any four** of the following: **(5x4=20)**

7. Explain the structure and significance of starch.
8. Give an account of passive and active cellular transport.
9. Briefly explain any two types of chemical bonds.
10. Explain counting of cells by Haemocytometer.
11. Explain Cyclic Photophosphorylation.
12. What is fermentation? Explain heterolactic acid fermentation.

**SECTION - C**

III. Answer **any two** of the following: **(2x10=20)**

13. Explain the structure of protein in detail. Add a note on its properties.
14. Explain ETC in detail.
15. Write the major elements of life and their characteristics
16. Define growth. Explain bacterial growth curve.

## SECTION- D

IV. Answer **any ten** of the following

(1x10=10)

17. Which of the following is correctly matched?

- a. Maltose – Disaccharide.
- b. Fructose – Hexose.
- c. Cellulose – Structural polysaccharide.
- d. All of these.

18. Buffers resist any change in pH because

- a. They give unionised acid or base on reaction with added acid or alkali.
- b. They have fixed value of pH.
- c. They have large excess of H<sup>+</sup> or OH<sup>-</sup> ions.
- d. None of these.

19. Photolysis of water and evolution of O<sub>2</sub> are the characteristic of

- a. Cyclic electron transport.
- b. Non-cyclic electron transport.
- c. Both of these.
- d. None of these.

20. In chemostat, constant cell concentration is maintained.

- a. True.
- b. False.

21. Which of the following processes do not generate ATP?

- a. Photophosphorylation
- b. Calvin cycle
- c. Oxidative phosphorylation
- d. Substrate level phosphorylation

22. Photoautotrophs obtain their carbon from CO<sub>2</sub> and energy from

- a. Reduced Organic compounds
- b. Reduced Inorganic compounds
- c. Both a and b
- d. None of the above

23. Hydrolysis of fat by alkali into fatty acids and glycerol is called

- a. Coagulation
- b. Suspension
- c. Saponification
- d. None of the above.

24. Water is liquid at room temperature because of its

- a. High boiling point.
- b. High melting point.
- c. Cohesive forces due to H bonds in water
- d. None of these.

25. pH is defined as

- a.  $-\text{Log}_{10} [\text{H}^+]$
- b.  $\text{Log}_{10} [\text{H}^+]$
- c.  $\text{Log}_2 [\text{H}^+]$
- d.  $-\text{Log}_2 [\text{H}^+]$

26. Which of the following is not a simple protein?

- a. Albumin
- b. Globulin
- c. Prolamin
- d. Glycoprotein

27. Which of the following method is used for viable count of a culture?

- a. Plate count method
- b. Membrane filtration
- c. Both a and b.
- d. None of the above.

28. The process of Reduction is a gain of

- a. Electrons
- b. Protons
- c. Neutrons
- d. Oxygen

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