

B.Sc (CBCS) DEGREE EXAMINATION, APRIL 2021
SECOND SEMESTER
MICROBIOLOGY - MAIN
MICROBIAL PHYSIOLOGY AND BIOCHEMISTRY
(for those who joined in July 2020 onwards)

Time : Three hours

Maximum: 75 marks

Part - A (10 X 1 = 10 marks)

Answer all question, choose the correct answer

1. Glucose molecule during the process of glycolysis is broken down in to
 - a) Four pyruvic acid
 - b) Three pyruvic acid
 - c) Two pyruvic acid
 - d) One pyruvic acid
2. Which of the following is not formed during the Kreb's cycle?
 - a) Lactate
 - b) Iso citrate
 - c) Succinate
 - d) Both (a) and (b)
3. Which of the following steps during electron transfer in an oxygenic photosynthesis is the ATP production step?
 - a. Ferredoxin to ubiquinone
 - b. Ubiquinone to cyt b
 - c. cyt b to cyt f
 - d. cyt f to excited bacterio chlorophyll
4. In nitrification ammonia is converted to
 - a. Nitrogen
 - b. Nitrate
 - c. Nitrite
 - d. Amide
5. Which of the following is an example of monosaccharide?
 - a. Galactose
 - b. Sucrose
 - c. Lactose
 - d. Maltose
6. What is the chemical difference between cellulose and chitin?
 - a. Replacement of the hydroxyl group at C2 with an acetylated amino group
 - b. Replacement of the hydroxyl group at C3 with an acetylated amino group
 - c. Replacement of the hydroxyl group at C4 with an acetylated amino group
 - d. Replacement of the hydroxyl group at C5 with an acetylated amino group
7. The first amino acid of any polypeptide chain in eukaryotes is
 - a. Valine
 - b. Methionine
 - c. Phenylalanine
 - d. Leucine

8. Which of the following bonds are not involved in tertiary type of protein structure?
- Di sulfide bond
 - Hydrogen bonding
 - Salt bridges
 - Hydrophilic interactions
9. Lipids most likely functions as
- A membrane component
 - An energy storage molecule
 - A sex hormone
 - A vitamin required for vision
10. Which is a characteristic of sphingolipid?
- They all contain a fatty acid joined to glycerol
 - They all contain a long -chain alcohol joined to isoprene
 - They all contain ceramide joined to a polar group
 - They all contain a carbohydrate joined to a phosphate group

Part B (5 x 5 = 25 Marks)

Answer all Questions, Choosing either (a) or (b), Each answer should not exceed 250 words

11. a) Explain anaerobic respirations
(Or)
b) Write note on Denitrification
12. a) Explain about oxygenic and an oxygenic photosynthesis
(Or)
b) Write about the light reactions in Cyanobacteria
13. a). Describe the structure and importance of hexose sugar
(Or)
b) Explain the importance of cellulose
14. a) Discuss about the bond responsible for stability of protein structure.
(Or)
b) Describe the alpha plated sheet structure of proteins
15. a) Write about essential fatty acids with examples .
(Or)
b) .Explain about co factors and prostaglandins

16.a) Explain TCA cycles.

(Or)

b) Discuss about fermentation and its types.

17. a) Explain CO_2 fixation in Autotrophs

(Or)

b) Discuss about assimilatory nitrate reduction

18. a) Explain the quaternary structure of protein with example.

(Or)

b) Discuss the secondary and tertiary structure of protein with examples

19. a) Explain the structure and importance of sucrose and starch.

(Or)

b) Give a general account on polysaccharide and types.

20. a) Briefly explain about miscellaneous lipids.

(Or)

b) Explain saponification