

(7 pages)

Reg. No. :

Code No. : 6504 Sub. Code : ZMBM 12

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2022.

First Semester

Microbiology – Core

BIOCHEMISTRY

(For those who joined in July 2021 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Select the sugar which is closely associated with tooth decay
 - (a) Sucrose
 - (b) Lactose
 - (c) Maltose
 - (d) Glycogen

2. Which one of the following is acting as a virulence factor in bacteria?
 - (a) Heparin
 - (b) Hyaluronic acid
 - (c) Maltose
 - (d) Glycogen
3. The 3D structure of proteins can be determined by
 - (a) Spectroscopy
 - (b) X ray crystallography
 - (c) Nuclear Magnetic resonance
 - (d) Both (b) and (c)
4. Which of the following is not the function of proteins
 - (a) Digestion
 - (b) Genetic information carrier
 - (c) Immunity
 - (d) Transport
5. Rancidity of lipids in lipid rich foodstuff is due to
 - (a) Reduction of fatty acids
 - (b) Hydrogenation of unsaturated fatty acids
 - (c) Dehydrogenation of saturated fatty acids
 - (d) Oxidation of fatty acids

6. Select the derived lipids from the following
- (a) Terpenes (b) Steroids
(c) Carotenoids (d) All the above
7. DNA is found in
- (a) Nucleus
(b) Nucleus, mitochondria and ER
(c) Nucleus, mitochondria and Chloroplast
(d) Nucleus, mitochondria and RER
8. Identify the purine base of nucleic acids in the following
- (a) Cytosine (b) Thymine
(c) Uracil (d) Adenine
9. The normal Hg level is
- (a) 12-16 g /dL for healthy women
(b) 14-18 g /dL for healthy men
(c) Both are correct
(d) Both are wrong

10. A CSF analysis is used to measure different substances in your cerebrospinal fluid. It may include tests to diagnose:
- (a) Infectious diseases of the brain and spinal cord, including meningitis and encephalitis. CSF tests for infection look at white blood cells, bacteria, and other substances in the cerebrospinal fluid
(b) Autoimmune disorders, such as Guillain-Barré syndrome and multiple sclerosis (MS). CSF test for these disorders look for high levels of certain proteins in the cerebrospinal fluid
(c) Alzheimer's disease, the most common form of dementia, which includes memory loss, confusion, and changes in behavior
(d) All the above

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 250 words.

11. (a) Explain the properties of glucose.
- Or
- (b) Describe the properties of lactose.

12. (a) Write down the functions of lipids.

Or

(b) Sketch the biological importance of glycolipids.

13. (a) Evaluate the importance of nutritional enzymes.

Or

(b) List out the functions of proteins.

14. (a) Quote the reason for the stability and negative charge of DNA.

Or

(b) What do you know about unusual bases in tRNA?

15. (a) Write an account on hemolysis.

Or

(b) Report the routine tests done in urine.

PART C -- (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).
Each answer should not exceed 600 words.

16. (a) Write an essay on the classification of carbohydrates and highlight its biological importance.

Or

(b) Discuss in detail about Mucopolysaccharides.

17. (a) How do you design fatty acid classification?

Or

(b) Write the features of phospholipids and steroids.

18. (a) Classify proteins and measure the biological functions of proteins.

Or

(b) Summarise the mechanism of action of enzymes.

19. (a) Explain in detail about the contributions of Watson and Crick.

Or

(b) Describe the protocol of chromosomal DNA isolation in detail.

20. (a) Write down the principle, applications and limitations of autoanalyser in clinical labs.

Or

- (b) What do you know about the routinely performed biochemical tests? and highlight their significance and reference values.
-