

(FOR THE CANDIDATES ADMITTED

DURING THE ACADEMIC YEAR 2020-2023 ONLY)

20UBY405

REG.NO. :

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : JULY- 2022

B.Sc.-BOTANY

MAXIMUM MARKS: 70

SEMESTER - IV

TIME : 3 HOURS

PART - III

CELL BIOLOGY, BIOCHEMISTRY AND BIOPHYSICS

SECTION - A

(10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.

MULTIPLE CHOICE QUESTIONS.

(K1)

1. Which of the following are components of a phospholipid?
a) Cholesterol, glycerol, fatty acids b) Fatty acid, phosphate group, glycerol
c) Glycerol, amino acid, phosphate group d) Phosphate group, cholesterol, monosaccharaides
2. Quaternary structure of a protein consists of_____.
a) Arrangement of one protein chain in a protein with a single subunit
b) Arrangement of separate protein chains in a protein molecule with more than one sub unit
c) Arrangement of only parallel and anti-parallel β – shells in a protein chain
d) Occurrence of an alpha helix bundle in a protein chain
3. Enzyme catalyze reaction by_____.
a) Binding regulatory protein b) Covalently modifying active site residues
c) Binding substrates with great affinity d) Selectively binding the transition state of a reaction with high affinity
4. Electromagnetic waves travel_____.
a) Without medium b) With medium
b) With medium and without medium d) In a disturbed path
5. The polymerase chain reaction is_____.
a) a DNA sequencing technique b) a DNA degradation technique
c) a DNA amplification technique d) All of the above

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES

(K2)

6. Thylakoids
7. Aminoacid
8. Transcription
9. Ionic bond
10. PCR

(CONTD 2)

SECTION – B**(5 X 4 = 20 MARKS)****ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS. (K3)**

11. a) Describe the structure of Mitochondria.
(OR)
b) Briefly discuss monosaccharides.
12. a) Elaborate competitive inhibition.
(OR)
b) Classify the types of protein based on the shape.
13. a) Describe the double helical structure of DNA.
(OR)
b) Explain reverse transcription.
14. a) Comment on chemical bonds.
(OR)
b) What is Pauli Exclusion Principle? Explain.
15. a) Explain Beer-Lambert law.
(OR)
b) Elucidate the working principle of pH meter.

SECTION - C**(4 X 10 = 40 MARKS)****ANSWER ANY FOUR OUT OF SIX QUESTIONS****(16th QUESTION IS COMPULSORY AND ANSWER ANY THREE QUESTIONS
(FROM Qn. No : 17 to 21) (K4 (Or) K5)**

16. What are the five steps in protein synthesis? Explain in detail.
17. Elaborate the lipid biosynthesis protocol.
18. Discuss Michaelis-Menten equation.
19. Compare the different models of DNA replication.
20. List out and explain the Laws of thermodynamics.
21. Comment on PCR.
