### **STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86** (For candidates admitted during the academic year 2019-20 and thereafter)

### SUBJECT CODE: 19CH/PE/BC15

# M. Sc. DEGREE EXAMINATION, APRIL 2021 **BRANCH IV- CHEMISTRY** SECOND SEMESTER

# **COURSE: MAJOR ELECTIVE** PAPER: ESSENTIALS OF BIOCHEMISTRY TIME: 90 MINUTES

# MAX MARKS: 50

(11x1 = 11 marks)

### **SECTION A**

I. Fill in the blanks. 1. The information in DNA getting transferred on mRNA is known as..... 2. Pyrimidine derivatives found in nucleic acid are ..... 3. Primary structure of protein is due to ..... 4. The acceptor arm of tRNA contains a capped nucleotide sequence ..... II Choose the correct answer

5. Name the compound with greatest standard free energy.

b) phosphocreatinine c) cyclic AMP d) phosphoenol pyruvate. a) ATP

- 6. The  $\alpha$ -helical structure of a protein is due to
  - a) Ionic bonds b) covalent bonds
  - c) Intermolecular hydrogen bonds d) intramolecular hydrogen bonds.
- 7. Most of the enzymes will have the optimum pH between
  - a) 2-5 b) 9-12 c) 7-14d) 5 - 9

# III. Answer in a sentence or two.

8. What is 'Splicing'?

Answer all the questions

- 9. Define Nucleotide.
- 10. Give the structure of ATP as the magnesium complex.
- 11. Distinguish between coenzymes and cofactors

### **SECTION B**

### **II.** Answer any three questions

- 12. Discuss the conventions in biochemical energetics.
- 13. Write note on the following:
  - a) Water as biological solvent b) Bicarbonate and phosphate buffers (4+4)
- 14. What is immobilization of enzymes? Discuss their methods and applications.
- 15. Illustrate and discuss all the steps involved in the biosynthesis of Cholesterol

# $(3 \times 8 = 24 \text{ marks})$

**SECTION C** 

# III Answer any one question 13. a) What is Xenobiotics? Give phase II reactions and explain in detail. (8 marks) b) Give the complete sequence of TCA cycle .calculate the total ATP Formed in one cycle. (7 marks) 17. a) What is Urea Cycle? Explain the steps involved. (8 marks)

17. a) what is Orea Cycle? Explain the steps involved.	(8 marks)
b) Explain the interconversion of Adenine Nucleotides.	(7 marks)

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(1 x 15= 15 marks)