STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86
(For candidates admitted during the academic year 2011–12 & thereafter)

SUBJECT CODE: 11CH/MC/BC54

B.Sc. DEGREE EXAMINATION, NOVEMBER 2014
BRANCH IV- CHEMISTRY
FIFTH SEMESTER

REG.NO ……..

COURSE : MAJOR CORE
PAPER : BIOCHEMISTRY
TIME : 30 MINUTES **MAX.MARKS : 30**

SECTION - A (30x1=30)

ANSWER ON THE QUESTION PAPER ITSELF:

Answer ALL questions.

I Choose the Right Answer: (10x1=10)

1. Bicarbonate to carbonic acid ratio in the body should be _____ to maintain the pH at 7.4
   a. 20:1 b. 1:20 c. 7.4:1 d. 1:7.4

2. _____ is not a granulocyte.
   a. Lymphocyte b. basophil c. eosinophils d.neutrophils

3. DNA does not contain the nitrogenous base
   a. Adenine b. guanine c. uracil d. thymine

4. Codon is present on the
   a. mRNA b. rRNA c. tRNA d. all the above

5. Succinate dehydrogenase is involved in
   a. TCA cycle b. ETC c. both d. none

6. The coenzyme involved in transamination is
   a. pyridoxal phosphate b. biotin c. thiamine pyrophosphate d. none

7. Structural analogs are involved in _____ inhibition.
   a. allosteric b. competitive c. non-competitive d. uncompetitive

8. The affinity of an enzyme to a molecule is inversely proportional to
   a. V_0 b. V_m c. Km d. [S]

9. Insulin increases
   a. Glycolysis b. gluconeogenesis c. glycogenolysis d. all the three

10. Male sex hormones are called
    a. estrogens b. androgens c. gestogens d. none

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II Fill in the blanks: (10x1=10)

11. Hemophilia A is due to the deficiency of _____.
12. _____ is the enzyme involved in the formation and dissociation of carbonic acid.
13. _____ is composed of sugar and nitrogenous bases.
14. The ribosome involved in eukaryotic protein synthesis is _____.
15. The rate limiting enzyme in glycogenolysis is _____.
16. The enzyme deficient in albinism is _____
17. An enzyme shows _____ specificity when an enzyme catalyses only one reaction.
18. Allosteric enzymes exhibit _____ kinetics.
19. _____ is a precursor for all steroid hormones.
20. Protein molecules which is present on the cell surface and that can bind to the hormone ligands and elict cellular responses are called _____.

III State whether true or false: (5x1=5)

21. Respiratory acidosis is due to increased elimination of carbon dioxide.
22. Higher iodine number indicates lower unsaturation of fats.
23. Pyruvate kinase is a rate limiting enzyme in glycolysis.
24. Organic cofactors are also called coenzymes.
25. $T_3$is otherwise called thyroxine.

IV Answer the following in a line or two: (5x1=5)

26. What is alkali reserve?

27. What is saponification?

28. Give the names of ketone bodies.

29. State the Michaelis Menten equation.

30. What is the anti-diabetic factor?

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TIME : 2 ½ HOURS **MAX.MARKS : 70**

SECTION - B **(5x6=30)**

Answer any FIVE questions.

1. Explain the steps involved in coagulation of blood.
2. Give the Classification of lipids.
3. Briefly describe the replication in prokaryotes.
4. Illustrate urea cycle.
5. Explain beta oxidation of fatty acids.
6. Classify enzymes and give a suitable example for each class.
7. Explain the mechanism of action of steroid hormones with a suitable diagram.

SECTION - C **(2x20=40)**

Answer any TWO questions.

8. Explain the structural organization of proteins with special reference to the various bonds involved in stabilizing each structure.

9. a) Discuss the salient features of the Watson & Crick Model of DNA.
   b) Explain the various components of electron transport chain and their functions. (10+10)

10. a) Explain the induced fit model of enzyme action.
    b) Discuss the factors affecting enzyme action. (10+10)

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