

**STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI-86**

**(For candidates admitted during the academic year 2011–12)**

**SUBJECT CODE: 11CH/MC/BC54**

**B.Sc. DEGREE EXAMINATION, NOVEMBER 2013**

**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)**

- Hemophilia A is due to the deficiency of clotting factor  
a) II                      b) V                      c) VIII                      d) X
- The difference between plasma and serum is the presence and absence of  
a) Cells                      b) RBCs                      c) fibrinogen                      d) fibrin.
- The Pyrimidine present in DNA and absent in RNA is  
a) thymine                      b) uracil                      c) adenine                      d) cytosine.
- The backbone of nucleic acid structure is made up of  
a) covalent bond                      b) peptide bond  
c) glycosidic bond                      d) phosphodiester bond.
- Phenylketonuria occurs due to the absence of the enzyme  
a) Phenylalanine carboxylase                      b) Phenylalanine dehydrogenase  
c) Phenylalanine hydroxylase                      d) Phenylalanine oxidase.
- Synthesis of urea occurs in the  
a) kidney                      b) liver                      c) brain                      d) muscle.
- The literal meaning of the word Enzyme is  
a) catalyst                      b) chemical                      c) Ecoli                      d) yeast.
- The term E. C. stands for  
a) Enzyme commission                      b) Enzyme classification  
c) Enzyme count                      d) Enzyme change.
- The hormone that is important for fixing the fertilized ovum and for maintaining pregnancy is  
a) progesterone                      b) cortisol                      c) prolactin                      d) estrogen.
- Which of the following hormone is derived from amino acids  
a) thyroxine                      b) insulin                      c) oxytocin                      d) glucocorticoids.

**II Fill in the blanks:**

11. The factor responsible for the lysis of blood clot is \_\_\_\_\_.
12. The buffer system maintaining the pH of blood is \_\_\_\_\_.
13. Cholesterol contains a cyclic structure called \_\_\_\_\_.
14. Proteins are polymers of \_\_\_\_\_.
15. Oxidative deamination is the liberation of \_\_\_\_\_ from the amine group of amino acids.
16. Muscle glycogen is not converted to glucose due to the absence of the enzyme \_\_\_\_\_.
17. The class of enzymes involved in the breaking of substrates is called \_\_\_\_\_.
18. The part of the enzyme to which the substrate binds is called \_\_\_\_\_.
19. \_\_\_\_\_ is the more active form of testosterone.
20. \_\_\_\_\_ is the precursor for steroid hormones.

**III State whether the following are true or false:****(5x1=5)**

21. Hemophilia B is called as Christmas Factor.
22. The number of peptide bonds in a decapeptide is ten.
23. The number of ATPs produced in one TCA cycle is twelve.
24. Hexokinase is an example for the class of enzymes namely hydrolases.
25. Insulin and glucagon regulate the lipid metabolism.

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

26. What is hemophilia?
27. What are nucleotides?
28. Why do inborn errors of metabolism occur?
29. Define coenzymes.
30. Define hormones.

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**TIME : 2 ½ HOURS**

**MAX.MARKS : 70**

**SECTION - B**

**(5x6=30)**

**Answer any FIVE questions.**

1. Explain the mechanism of blood clotting.
2. Write a note on protein sequencing and explain how the C- terminal of protein is determined.
3. Enumerate the steps in glycogenesis and glycogenolysis.
4. What is enzyme inhibition? Explain the types.
5. How are enzymes classified? Give examples for each.
6. What is the source and functions of thyroxin and insulin?
7. Write a note on saponifiable liquid.

**SECTION - C**

**(2x20=40)**

**Answer any TWO questions.**

8. What is the composition of blood and how is its pH maintained?
9. Write a note on the types of RNA and their role in the synthesis of proteins.
10. Write short notes on:
  - a)  $\beta$  - oxidation of fatty acids
  - b) Factors affecting enzyme action.

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