STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2011-12 & thereafter)

SUBJECT CODE: 11CH/AC/BC43

B.Sc. DEGREE EXAMINATION, APRIL 2015
BRANCH V.A. – PLANT BIOLOGY AND PLANT BIOTECHNOLOGY
BRANCH VI.A. – ADVANCED ZOOLOGY AND BIOTECHNOLOGY
FOURTH SEMESTER

Reg. No ……..

COURSE : ALLIED – CORE
PAPER : BIOCHEMISTRY - II
TIME : 30 MINUTES MAX. MARKS : 30

SECTION – A
TO BE ANSWERED ON THE QUESTION PAPER ITSELF
ANSWER ALL QUESTIONS: (30 X 1 = 30)
I. CHOOSE THE CORRECT ANSWER:

1. The nitrogenous base present in lecithin is
   a) choline b) ethanolamine c) inositol d) serine

2. The test to check the purity of fat is
   a) Iodine number b) Reichert Meissel number
   c) saponification niumber d) acid number

3. Which of the following is not a true ketone
   a) Acetoacetate b) acetone
   c) β - hydroxybutyrate d) 3 - hydroxybutyrate.

4. The imino acid found in protein structure is
   a) Arginine b) proline c) histidine d) glycine

5. The bonds in a protein that are not broken on denaturation is
   a) Hydrogen bond b) ionic bond c) disulphide bond d) peptide bond

6. Which of the following amino acids disrupt the right handed helix
   a) Proline b) aspartate c) arginine d) all

7. The hormone produced in response to fight, fright and flight is
   a) Thyroxine b) ADH c) aldosterone d) epinephrine

8. The hormone required for the implantation of fertilized ovum and maintenance of pregnancy is
   a) Progesterone b) estrogen c) cortisol d) prolactin

9. The nitrogenous base not present in DNA is
   a) Adenine b) guanine c) cytosine d) uracil

10. The backbone of nucleic acid structure is constructed by
    a) Peptide bond b) glycosidic bond c) phosphodiester bond d) all of these

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II. FILL IN THE BLANKS:

11. The steroids contain a cyclic ring structure called _____.
12. The number of milligrams of KOH required to hydrolyse 1 gram of fat or oil is known as _____.
13. The total number of ATPs produced by the oxidation of one molecule of palmitic acid is _____.
14. Proteins are polymers of _____.
15. A sulphur containing essential amino acid is _____.
16. The bonds forming the backbone of protein structure is _____.
17. The precursor for the synthesis of steroid hormones is _____.
18. The endocrine gland responsible for the synthesis of tropic hormones is _____.
19. The base pair G-C is more stable and stronger than A-T due to _____.
20. The fundamental unit of genetic information is known as _____.

III. MATCH THE FOLLOWING:

21. The factories for protein biosynthesis	a) nucleobase, sugar, phosphate.
22. The information required for synthesis of protein	b) absorption of fat in the intestines.
23. Nucleotides are composed of	c) are the ribosomes.
24. Phospholipids participate in the	d) are indispensible.
25. Essential amino acids	e) is present in mRNA.

IV. ANSWER IN ONE OR TWO SENTENCES:

26. Define rancidity.

27. List out the aromatic amino acids.

28. What is DNA?

29. What are the three major types of RNA.

30. What are ductless glands?

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TIME : 2 ½ HOURS **MAX. MARKS : 70**

SECTION – B

ANSWER ANY FIVE QUESTIONS: **(5x6 = 30)**

1. Explain the process of digestion and absorption of lipids in the intestines.
2. Briefly classify lipids.
3. Classify the proteins based on their solubility.
4. Elucidate the steps in Urea cycle.
5. Write an account on the non-steroid hormones and their function.
6. Draw a neat labeled diagram of the DNA and explain its structure.
7. Illustrate the types of RNA and their functions.

SECTION – C

ANSWER ANY TWO QUESTIONS: **(2x20 = 40)**

8. a) Describe the steps in β- oxidation of fatty acids and explain its bioenergetics. (13)
   b) Explain the following
   (i) denaturation (ii) Ninhydrin Test (4+3)
9. Write an account on the structural conformation of proteins.
10. Write short notes on: a) Protein synthesis b) Mechanism of hormone action. (12+8)

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