

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI – 86
(For candidates admitted during the academic year 2008-09)

SUBJECT CODE : CH/PC/BC24

M.Sc. DEGREE EXAMINATION, APRIL 2009
BRANCH IV – CHEMISTRY
SECOND SEMESTER

REG.NO

COURSE : CORE
PAPER : BIOCHEMISTRY
TIME : 30 MINS

MAX. MARKS :20

SECTION – A

TO BE ANSWERED ON THE QUESTION PAPER ITSELF.

Answer all the questions.

(20 x 1= 20)

I. Choose the correct answer:

- Lewis base is a
 - electron donor
 - electron acceptor
 - proton donor
 - proton acceptor.
- The metabolic (endogenous) water is derived by the oxidation of
 - protein
 - fat
 - carbohydrate
 - all of them.
- Name the compound with greatest standard free energy.
 - ATP
 - phosphocreatinine
 - cyclic AMP
 - phosphoenol pyruvate.
- The E_o value is negative ,which means
 - greater the tendency to lose proton
 - greater the tendency to accept proton
 - greater the tendency to lose electron
 - greater the tendency to accept electron
- The number of base pairs present in each turn (pitch) of BETA-form of DNA helix
 - 9
 - 10
 - 11
 - 12
- The ALPHA –helical structure of a protein is due to
 - ionic bonds
 - covalent bonds
 - intermolecular hydrogen bonds
 - intramolecular hydrogen bonds.
- The inhibitor binds with the ES complex the inhibition is called
 - competitive
 - non competitive
 - uncompetitive
 - feed back.
- Most of the enzymes will have the optimum pH between
 - 2 - 5
 - 9 -12
 - 7 - 14
 - 5 - 9

9. A C-18 fatty acid will undergo the following number BETA-oxidation
a) 9 b) 8 c) 7 d) 6
10. One of the following enzyme in glycolysis catalysis an irreversible reaction.
a) hexokinase b) phosphofructokinase c) pyruvate kinase d) all of them.

II. Fill in the blanks.

11. The primary defect in metabolic acidosis is a reduction in the plasma concentration of.....
12. The number of peptide bonds in a decapeptide is.....
13. The non protein part of the haloenzyme is.....
14. Linoleic acid is known as.....fatty acid.
15. In EM pathway the end product of anaerobic oxidation is.....

III. Answer in line or two

16. buffers
17. universal currency.
18. collagen.
19. product inhibition
20. glycolysis.



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PAPER : BIOCHEMISTRY
TIME : 2 HRS & 30 MINS

MAX. MARKS :80

SECTION – B

(5 X 8 = 40 MARKS)

Answer any FIVE questions.

1. Write note on the following.
 - a) water as biological solvent.
 - b) Bicarbonate and phosphate buffers.
2. Give a brief account of inter conversion adenine nucleotide.
3. Give an account of membrane lipids.
4. How will you determine the primary structure of a protein.
5. Write a note on the following.
 - a) immobilization of enzymes.
 - b) Feed back and allosteric inhibition.
6. What are various steps involved in the urea formation.
7. Explain the phase I and phase II reactions of detoxification.

SECTION-C

(2 X 20 = 40 MARKS)

Answer any TWO questions.

1. Write a note on the following.
 - a) acid base balance
 - b) free energy hydrolysis of organophosphates.
 - c) Factors affecting the enzyme action.

2. Give the structure of Hemoglobin and its biological importance.
3. Give the complete sequence of TCA cycle .calculate the total ATP Formed in one cycle.

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