STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted during the academic year 2009 – 10 & thereafter)

SUBJECT CODE: BY/PC/BC14

M. Sc. DEGREE EXAMINATION, NOVEMBER 2010
BIOTECHNOLOGY
FIRST SEMESTER

COURSE : CORE
PAPER : BIOCHEMISTRY
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS: **(20 x 1 = 20)**

1. Amphipathic compounds contain
   a) Polar region b) Non polar region c) Both Polar and Non polar region d) hydrophobic side chain.
2. Principal intracellular buffer is
   a) Bicarbonate b) acetate c) phosphate d) hemoglobin
3. Inulin is a polysaccharide of
   a) Lactose b) Galactose c)glucose d) fructose
4. Metalloproteins are
   a) glutelin b) transferring c) Prolamine d) Scleroprotein
5. DNA in eukaryotes is
   a) B-DNA b) A-DNA c)Z-DNA d) C-DNA
6. The group of enzymes that catalyze the removal of groups from substrate by mechanism other than hydrolysis
   a) Transferase b) Oxidoreductase c) Hydrolase d) Lyases
7. Example of competitive inhibitor is
   a)PABA b)Sulphanamide c) Malonic acid d) Oxalic acid
8. EMP Pathway converts glucose into
   a) 3- C compound b) 2- C compound c) 4- C compound d) 5- C compound
9. Donor of high energy phosphate to compounds is
   a) NADP b) ADP c)ATP d)NADH
10. Inhibitor of electron transport chain is
    a) Rotenone b) Hydrogen peroxide c)Penicillin d) gentamycin
11. Total gain of ATP in TCA cycle is ----------.
12. What are ketone bodies?
13. Define Atherosclerosis
14. The first metabolic cycle to be discovered was---------.
15. What is transamination.
16. Define autocrine and paracrine signals.
17. What is secondary messenger? Give examples
18. What is nitric oxide receptor?
19. Give the structure Adenine and Cytosine.
20. What are zymogens. Give examples.

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SECTION – B

ANSWER ANY FOUR QUESTIONS: (4 x 10 = 40)

21. Explain the transport of oxygen by hemoglobin and list the buffering system present in our body.
22. How are lipids digested and absorbed in our body.
23. Explain the mechanism of enzyme regulation.
24. Detail on the various levels of protein organization.
25. Explain the various receptors used in signaling.
26. What is Kreb-Henseleit Cycle. Explain.
27. How are enzymes classified?

SECTION – C

ANSWER ANY TWO QUESTIONS: DRAW DIAGRAMS WHEREVER NECESSARY: (2 X 20 = 40)

28. Detail on the degradation of amino acids.
29. Explain Signal Transduction with reference to secondary messengers.
30. What is oxidative phosphorylation? Explain electron transport chain.
31. Explain the mechanism on enzyme catalyzed reaction.

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