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

SUBJECT CODE: CH/MC/BC54

B.Sc. DEGREE EXAMINATION, NOVEMBER 2011 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 the questions.

T Choose the correct answer:

- 1. The fatty acids can be transported into and out of mitochondria through
 - a) Active transport

b) Facilitated transfer

c) Non-facilitated transfer

d) None of these

- 2. Hormones
 - a) Act as coenzyme

b) Act as enzyme

c) influence synthesis of enzymes

- d) Belong to B-complex
- 3. Specific regions on the enzyme for binding with the substrate are called
 - a) Active site

b) Catalytic site

c) Substrate site

- d) All the above
- 4. Effective buffer in plasma is
 - a) Haemoglobin

b) Citrate buffer

c) Phosphate buffer

- d) Bicarbonate buffer
- 5. The difference between DNA & RNA is
 - a) Uracil in DNA b) Thymin in DNA c) Uracil in RNA d) None of the above

- 6. High blood glucose is maintained by
 - a) Glucagon
- b) Insulin
- c) Thyroxine
- d) None of the above

П **State whether the following statements are True or False:**

- 7. If the pH of blood is higher than normal, the condition is called acidosis.
- 8. The tissue with highest glycogen content is kidneys & brain.
- 9. As the substrate concentration increases the activity of the enzyme concentration also increases.
- 10. ATP is the universal currency of free energy in biological system.
- 11. The monomers of nucleic acid are Nucleoside.
- 12. The most active organelle of protein synthesis is mitochondria.

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III		Match the following:				
	13.	Anterior pituitary	-	Hormone		
	14.	Catalytic site	-	ETC		
	15.	Albinism	-	Absence of melanin		
	16.	Glycogenesis	-	Growth harmone		
	17.	Ketone bodies	-	enzyme		
	18.	ATP	-	Glycogen storage		
IV		Fill in the blanks:				
	19.	9. Important buffer in extra-cellular fluid is				
	20. Blood glucose level is maintained by					
	21.	The interaction of substrated	& enzyn	ne is explained by	model.	
	22.	2. Alkaptonuria is a rare inherited genetic disorder of metabolism.				
	23.	23 Hormone is involved in controlling the rate of metabolic processes in				
	the body.					
	24. TCA cycle is also known as					
V	V Answer in one or two sentences:					
	25.	What is buffer?				
	26.	What is nucleotide made up	of?			
	27.	7. Name the factors that affect enzyme action.				
	28.	What are ketone bodies?				
	29.	Define hormone.				
	30.	Define iodine value.				

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COURSE : MAJOR CORE PAPER : BIOCHEMISTRY

TIME : 2½ HOURS MAX.MARKS : 70

SECTION - B (5x6=30)

Answer any five questions:

- 1. Describe how blood pH is maintained.
- 2. Explain Electron Transport Chain of events.
- 3. How are enzymes classified based on nature of the reaction?
- 4. Explain beta oxidation of fatty acids.
- 5. Explain glycolysis in detail.
- 6. Give an account of mechanism of enzyme action using Fishers lock & key model, and Koshland's induced fit model.
- 7. Illustrate with a flow chart the classification of hormones.

SECTION-C

Answer any two questions:

(2X20 = 40)

- 8. Explain biosynthesis of fatty acids.
- 9. Explain TCA cycle in detail.
- 10. Give the assumptions of Michaelis Menten theory, derive the equation, illustrate by means of a plot that $K_m = [S]$ and give the significance of K_m .
- 11. Explain Glycogenolysis & Glycogenesis.