



**UNIVERSITY OF TECHNOLOGY, JAMAICA**

**FACULTY OF SCIENCE AND SPORT**

**SCHOOL OF NATURAL AND APPLIED SCIENCES**

**FINAL EXAMINATION – SEMESTER 1**

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**MODULE NAME: BIOCHEMISTRY**

**MODULE CODE: CHY1007**

**DATE: December , 2009**

**THEORY**

**GROUP: BSNURSING - 1**

**DURATION: 2 HOURS**

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**INSTRUCTIONS: I ANSWER ALL QUESTIONS FROM SECTION I**  
**II ANSWER ALL QUESTIONS FROM SECTION II**  
**III ANSWER TWO QUESTIONS FROM SECTION III**

***THIS PAPER HAS SEVEN PAGES***

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### SECTION III (60 Marks)

**INSTRUCTIONS: ANSWER ANY TWO (2) QUESTIONS IN THIS SECTION**

#### QUESTION 27

- a) Describe the two separation methods for proteins and give an example of how one method is used in detecting sickle cell anaemia, giving reasons for the results. [8]
- b) Describe the two methods of enzyme inhibition used in the battle against AIDS, with the names and details of action of the inhibitors. [6]
- c) Outline three uses of triglycerides in the human body. [6]
- d) Explain why the GC base pair forms a tighter structure than the AT base pair? [2]
- e) How does a glycolipid differ from a sphingophospholipid? [2]
- f) What is the name of the metabolic strategy for one reaction to give energy to another? Give the two equations and the summary, showing how PEP is used to make ATP. [6]

Total = 30 marks

#### QUESTION 28

- a) Glucose is released from its storage substance in a process called: [1]
- b) Describe three biological functions of proteins giving an example for each one. [9]
- c) Explain how three factors affect enzyme kinetics, draw graphs. [9]
- d) What is the name of the protein hormone that has two polypeptide chains with disulphide links and is manufactured by bacteria for human use? [1]

- e) Explain how the Genetic Code works to determine protein structure. [5]
- f) Draw the structure of Cholesterol and name the functional group. [5]

Total = 30 marks

**QUESTION 29**

- a) Discuss four uses of Nitrogen from amino acid catabolism in the synthesis of new nitrogen compounds, giving examples. [8]
- b) Explain why one is called “good Cholesterol and the other “bad Cholesterol” in talking about LDL and HDL. [8]
- c) What is the name of the enzyme used in transfer of phosphate to glucose to start glycolysis? Write the two equations and the summary. [4]
- d) Discuss three functions of Lipids in the human body to show why they are necessary in the diet. [5]
- e) Discuss two uses of nuclear medicine. [5]

Total = 30 marks

**\*\*\*END OF PAPER\*\*\***