

Tanta University		Faculty of Science		Chemistry Department	
Final Examination for Seniors (fourth year students)			Entomology Section		
Course Title:	Biochemistry			Course Code: 14104	
Jan. 2013	Term: First Semester	Total Marks 60	Time allowed: 3 hrs.		

Answer the following questions

- 1)- "Many neurotransmitters biosynthesis depend on PLP". Write the biosynthetic pathway of noradrenalin. (6 marks)
- 2)- In the following conversions write the corresponding enzymes and coenzymes: (6 marks)
  - i- Histidine into Histamine.
  - ii- Pyruvate into Acetyl CoA.
  - iii- D-Glyceraldehyde-3-phosphate into 1,3-Diphospho glycerate.
- 2)- Hepatic fructose can form 1,3- diphosphoglycerate . (4 marks)
- 4)- "Active succinate is the precursor of hem biosynthesis" Explain its biosynthetic pathway from  $\alpha$ -ketoacids. (6 marks)
- 5)- Write the mechanism of oxidative deamination of L-alanine by amino acid oxidase. (4 marks)
- 6)- Write equations of the non-oxidative pathway of HMS. (6 marks)
- 7)- The biochemical pathway of the reaction of acetyl CoA in the presence of co-carboxylase. (5 marks)
- 8)- Biosynthesis of Glycine. (5 marks)
- 9)- Conversion of D-Glucose into D-Ribulose -5- phosphate. (5 marks)
- 10)- Conversion of OAA into Fumaric acid. (5 marks)
- 11)- Write the  $\beta$ -degradative pathway of fatty acids. (4 marks)
- 12)- Explain the role of PLP in transamination reaction by GPT. (4 marks)

Good Luck

Tanta University		Faculty of Science		Chemistry Department	
Reset Examination for Seniors (fourth year students)			Botany Section		
Course Title:	Instrumental Analysis and Biochemistry			Course Code: 14073	
Jan.. 2013	Term: First Semester	Total Marks 60	Time allowed: 3 hrs.		

**Sec. A Chromatography (20 Marks)**


- 1) Give an account on the following:
- a- Ion exchange capacity . (5 Marks)
  - b- Detectors for gas chromatography (5 Marks)
- 2) Discuss in details the applications of the following methods:
- a- Gel chromatography (5 Marks)
  - b- HPLC chromatography . (5 Marks)

**Sec. B Biochemistry (40 Marks)**

**Answer the following:-**

- 1)- In the following conversions write the corresponding enzymes and coenzymes: (3 marks)
- i- Histidine into Histamine.
  - ii- Pyruvate into Acetyl CoA.
  - iii- D-Glyceraldehyde-3-phosphate into 1,3-Diphospho glycerate.
- 2)- Write the biosynthetic pathway of Uridylic acid. (5 marks)
- 3)- Conversion of  $\alpha$ -ketoisovaleric acid into Pantothenic acid. (3 marks)
- 4)- Conversion of hypoxanthine into AMP and GMP. (5 marks)
- 5)- Biosynthesis of Epenipherin. (4 marks)
- 6)- Uric acid from inosine. (4 marks)
- 7)- "L-alanine can form pyruvate and  $\text{NH}_3$  , Explain the mechanism. (4 marks)
- 8)- "Active succinate is the precursor of heam biosynthesis" Explain its biosynthetic pathway from  $\alpha$ -ketoacids. (4 marks)
- 9)- The biochemical pathway of the reaction of acetyl CoA in the presence of co-carboxylase. (4 marks)
- 10)- Biosynthesis of Glycine. (4 marks)

Good Luck

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY			
	EXAMINATION FOR FOURTH YEAR - STUDENTS OF ZOOLOGY			
COURSE TITLE:	Analytical chemistry		COURSE CODE: 14093	
DATE: 5 - 1 - 2013	JAN, 2013	TERM: FIRST	TOTAL ASSESSMENT MARKS: 60	TIME ALLOWED: 3 HOURS

**Section A**

**Electrochemical methods of analysis (20 Marks)**

**Answer the following questions:**

- 1) Define the following by an example or by an equation (10 Marks)  
Modes of mass transfer, reference electrode, pH-electrode and Nernst equation
- 2) Compare the following techniques as analytical tools : (10 Marks)  
Differential pulse polarography, and stripping voltammetry giving an application for each
- 3) a) Give two examples for each of amperometric and conductometric titrations (4 Marks)  
b) Explain the electrolysis at controlled potential (2 Marks)  
c) Write down the current- concentration relationship in the case of DC-polarography and linear-sweep voltammetry (4 Marks)

**Section B**

**Chromatography (30 Marks)**

**Answer the following questions**

- 1) Write down on the applications of ion exchange chromatography (5 Marks)
- 2) Mention the packing and sample application in column chromatography (5 Marks)
- 3) Write short notes on the following:
  - a) Applications of high performance liquid chromatography ( HPLC) (5 Marks)
  - b) Two applications of gel chromatography (5 Marks)
  - c) Properties of ion exchange chromatography (5 Marks)
  - d) Detectors of HPLC (5 Marks)

EXAMINERS	PROF. DR. MOHAMED EL-MORSI	PROF. DR. YOUSSEF MOHARRAM
-----------	----------------------------	----------------------------

