Tanta Univ	ersity Faculty	Faculty of Science		y Department	
Final Exam	ination for Seniors	(fourth year	students)	Entomology Section	
Course Title:	Bio	Biochemistry		Course Code: 1	4104
Jan. 2013	Term: First Sem	ester	Total Marks (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 heam biosynthesis" Explain its biosynthetic pathway from α -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 β -degradative pathway of fatty acids.

(4 marks)

12)- Explain the role of PLP in transamination reaction by GPT. (4 marks)

Good Luck

Tanta Univ	ersity	Faculty of So	cience	Chemist	ry Department	sausugane estatic
Reset Exan	nination for	r Seniors (fou	rth year stu	dents)	Botany Section	
Course Title:	Instrum	ental Analysis a	and Biocher	nistry	Course Code: 14	4073
Jan 2013	Term: Fi	rst 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 α -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 NH₃, Explain the mechanism. (4 marks)

8)- "Active succinate is the precursor of heam biosynthesis" Explain its biosynthetic pathway from α -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:

TIME ALLOWED: 3 HOURS

Section A

Electrochemical methods of analysis (so Marks)

Answer the following questions:

- (10 Marks) 1) Define the following by an example or by an equation Modes of mass transfer, reference electrode, pH-electrode and Nernst equation
- (10 Marks) 2) Compare the following techniques as analytical tools: Differential pulse polarography, and stripping voltammetry giving an application for each
- 3) a) Give two examples for each of amperometric and conductumetric 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 (4 Marks) linear-sweep voltammetry

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) b) Two applications of gel chromatography c) Properties of ion exchange chromatography d) Detectors of HPLC	(5 Marks) (5 Marks) (5 Marks) (5 Marks)

EXAMINERS	PROF. DR. MOHAMED EL-MORSI	PROF. DR.	YOUSSEF MOHARRAM
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TANTA UNIVERSITY **FACULTY OF SCIENCE** DEPARTMENT OF CHEMISTRY EXAMINATION FOR SENIORS (B.SC) STUDENTS OF MICROBIOLOGY SECTION COURSE TITLE: **BIOCHEMISTRY** COURSE CODE: 14084 DATE: JANUARY, 2013 TERM: FIRST TOTAL ASSESSMENT MARKS: 60 TIME ALLOWED: 3 HOURS 5-1-2013

Answer the following questions:

1-Write a brief account on:- (4 points each)

i-Thiamine improves mental attitudes , cysteine synthesis and hydrogen sulfide emission..

ii- Specific activity of pepsin ,trypsin and Chymotrypsin depends on pH interval in the stomach and duodenum respectively.

iii- Alcoholism leads to fat accumulation in the liver .

2- Write balanced equations for the following conversions:- (3 points each)

ii- α-Ketoglutarate to OAA to initiate the gluconeogenesis. i- Valine to propionyl CoA. iii-Glucose to Glycerol-3-P through DHAP. iv- PRPP to Nicotinamide mono nucleotide...

3- Explain each of the following:- (4 points each)

i- Glutamate occupies a central role in amino acid metabolism.

ii-Glycogen is stored in liver and muscle and is used as a carbohydrate energy source by the body. iii- The significance of Pantothenic acid in the body.

4-Illustrate in equations:-(4 points each)

i- The overall equation for non-oxidative phase of HMPS is :-

Ribose-5-phosphate + 2 Xylulose-5-phosphate

2 Fructose-6-phosphate + Glyceraldehyde-3-phosphate

ii-The steps of phospholipids synthesis

iii- Many different systems have been suggested for the recycling of pyridine nucleotides

5- Choose the correct answer (s) .Explain by equations , the reason(s):- (4 points each)

i-The biosynthesis of the neurotransmitters, acetylcholine, gamma-aminobutyric acid (GABA), and alcoholic fermentation in yeast require:-

a- TPP

b-butyric acid

c-NAD+.

d- ethanol

ii-The methylation of homocysteine, requires:-

a- 5-MTHF

b- folic acid

c- SAM

d- methionine

iii-NAD+ dependent enzymes are as follows:-

a) PDHc

c) succinate dehydrogenase

b) glutamate dehydrogenase

d) glucose-6-phosphate dehydrogenase

TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT CHEMISTRY - BIOCHEMISTRY SECTION

EXAMINATION FOR SENIORS (4TH YEAR) STUDENTS OF BIOCHEMISTRY

COURSE TITLE: Biotechnology - Ph. D. Afrah Fatthi Salama

COURSE CODE: 14063

DATE: 22 JANUARY, 2013 | TERM: FIRST

TOTAL ASSESSMENT MARKS: 20

TIMELLOWED: 3 HOURS

أطيب التمنيات بالنجاح و التوفيق الدر أفراح فتحي سلامه

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Tanta University
Faculty of science
Chemistry Department

Time allowed: 2 hours Date: 28/12/2013

Final examination of fourth level students (C.H.) section: (Chemistry and Chemistry/Biochemistry) Statistical thermodynamics CH4111

Answer all questions:

1-a) Discuss the relationship between entropy and probability.

b)

I	1,2,3		
	4,5,6		NAME AND THE PROPERTY OF THE P
II	1,3	4,6	5,2

The above diagram shows two "macrostates", I and II. Calculate the number of "microstates" corresponding to both "macrostates" I and II.

- 2-a) Calculate the average energy for triatomic linear and nonlinear molecules.
 - b) Discuss the barometric formula.
- 3- Discuss Boltzmann distribution law.
- 4-Discuss the absolute reaction rate theory.



J 44 (D)



TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY

EXAMINATION FOR CRDIT HOUR STUDENTS

COURSE TITLE: LASER CHEMISTRY COURSE CODE: CH4113

DATE:30 DECEMBER, 2013 TERM: FIRST TOTAL ASSESSMENT MARKS: 50 TIME:2 HOURS

Answer the following questions (10 marks each):

- 1- The synthesis of vinyl chloride from 1,2-dichloroethane is an important multibillion industrial process demonstrating the advantages of laser applications. Write the reaction scheme and mention the advantages of laser application in comparison with thermal applications.
- 2- The technique of thermal lensing is an important application on laser collimation. Draw a time- resolved thermal lensing experimental setup and trace upon using the technique to study singlet oxygen sensitization kinetics.
- 3- Using suitable diagrams and illustrations, describe each of the following laser systeme:
- i He / Ne four energy level laser
- ii Excimer laser
- iii Proton transfer dye laser
- iv Solid state laser based on p-n junction.
- 4 Discuss each of the following:
 - (a) The technique of Raman spectroscopy showing energy level diagram, the spectral output and band assignment.
 - (b) The principal of MUCAP reagent operation
 - (c) $\Delta E_{S,T}$ in carbonyl and olefinic compounds
 - (d) Photodynamic therapy (PDT)
- 5 Explain the reason for each of the following:
 - (a) HClO₄ and not HCl is commonly used in adjusting pH of dye laser media.
 - (b) R6G-I solutions are strongly fluorescent in ethanol but non-fluorescent in chloroform.

END OF EXAM

EXAMINER: PROF. DR. EL-ZEINY MOUSA EBEID







TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY

EXAMINATION FOR CRDIT HOUR STUDENTS

COURSE TITLE: LASER CHEMISTRY

COURSE CODE: CH4113

DATE:30 DECEMBER, 2013

TERM: FIRST

TOTAL ASSESSMENT MARKS: 50

TIME:2 HOURS

Answer the following questions (10 marks each):

- 1- The synthesis of vinyl chloride from 1,2-dichloroethane is an important multibillion industrial process demonstrating the advantages of laser applications. Write the reaction scheme and mention the advantages of laser application in comparison with thermal applications.
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END OF EXAM

EXAMINER: PROF. DR. EL-ZEINY MOUSA EBEID