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 TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY			
EXAMINATION FOR LEVEL FOUR STUDENTS (SEMESTER 1) OF CHEMISTRY/BIOCHEMISTRY, BOTANY, MICROBIOLOGY, ZOOLOGY, OR GEOLOGY			
Course Title:	BIOINORGANIC CHEMISTRY	Course Code: CH4159	
DATE	27/12/2017	TERM: First	Total assessment marks: 50
			Time Allowed: 2 HOUR

Answer the following questions with short notes

Question 1

Discuss each of the following: (15 marks)

- 1- Biosynthesis and secretion of iodine containing thyroid hormone.
- 2- Regulation of blood pH.
- 3- Role of parathyroid hormone (PTH) in Calcium regulation.

Question 2:

Determine the biological function of each of the following elements:

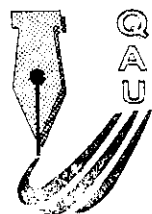
(10 marks)

- 1- Copper
- 2-Iodine
- 3-Calcium
- 4- Chlorine
- 5- Iron

Question 3:

Explain the following: (10 Marks)

- (A) Factors affecting on the protein-metal crystallizations
- (B) Factors affecting on metal toxicity
- (C) Factors affecting on stability of metalloproteins
- (D) The role of metal ions in enzymatic catalysis
- (F) Properties of metals to be used as radiodiagnostic tracer





	Tanta University Faculty of Science Department of Zoology Entomology Branch			
	Exam for senior students of Chemistry/Entomology			
	Course title:	Ecology of fresh water insects الأستلة في صفحتين		Course code: EN 4149
DATE:	January, 2018	Term: first	Total marks:100	Time allowed: 2 hours

Answer the following questions in your answer booklet:

Part I (48 marks)

1. Choose the correct answer from between the brackets (Total 15 Marks, each 1.5):


- 1.1. (Lotic – lentic) ecosystem are like rivers, streams and creeks.
- 1.2. The (littoral – limnetic – profundal) zone is open water where photosynthesis can occur.
- 1.3. Near the river (head – mouth – middle), the water becomes dark from all the sediments that picked up upstream.
- 1.4. Much care should be considered before impounding a river to create (swamps – estuary – factories).
- 1.5. Aquatic insect assays are used to study (pesticide effect – resistance - mode of action - all of these).
- 1.6. (Bogs –ponds – marshes) are shallow enough for light to penetrate the bottom enabling lots of plant growth.
- 1.7. (Lakes – Oceans) have several zones such as intertidal, pelagic, abyssal and benthic.
- 1.8. (Wetland – Marsh – Watershed) describes an area of land that contains a set of streams drains into a single river.
- 1.9. In the river (head – mouth), water has higher oxygen levels, and freshwater fish such as trout and heterotrophs can be found there.
- 1.10. The (intertidal rove beetle - shore bristletail) is a small predatory beetle that builds burrows in the sand

2. Fill in the blanks with the appropriate words (Total 18 Marks, each blank 1.5)

- 2.1. Zooplanktons are small or metazoans that feed on other phytoplanktons.
- 2.2. Chemical analysis gives.....information on the water quality.
- 2.3.are autotrophic prokaryotic or eukaryotic algae that live near the water surface where there is sufficient light to support
- 2.4. Nekton refers to the actively swimming aquatic organisms in a body of water, such asand
- 2.5. are coastal wetlands that occur in bays and estuaries across tropical and subtropical regions.
- 2.6. Estuaries are sometimes called habitats for many juvenile organisms, especially for fishes.
- 2.7. are shallow wetlands along rivers.
- 2.8. Vegetation and animals living in the littoral zone are food for other creatures such as, snakes, and
- 2.9. The profundal zone is chiefly inhabited by

3. Indicate if the statements are true or false with correction (Total 15 Marks, each 1.5):

- 3.1. Lakes may exist for short time in the year.
- 3.2. Freshwater swamps are the ideal habitat for many amphibians, such as the frogs and salamanders.
- 3.3. Measurements of the richness and diversity of aquatic insect species provide information about the chemical and physical characters of their environment.
- 3.4. Bar-built estuary occur when the rising seas invaded low-lying coastal river valleys.

	TANTA UNIVERSITY FACULTY OF SCIENCE CHEMISTRY DEPARTMENT		
	FINAL EXAM FOR SENIOR STUDENTS (DOUBLE MAJORS)		
	COURSE TITLE:	INDUSTRIAL CHEMISTRY (CH4155)	TIME ALLOWED:
DATE: JANUARY 01, 2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 50	2 HOURS

Question 1:

1) Compare between each pair of the followings: (9 Marks)

- Properties of diamond and graphite.
- Commodity and fine chemicals (with examples).
- SMR and POX.

2) Show with diagram only the extraction of sulfur. (2 Marks)

3) Write the uses of hypochlorous acid. (2 Marks)

Question 2:

1) Show only by equations: (8 Marks)

- Synthesis of diamond.
- Hydrogenation and oxidation steps for the manufacture of hydrogen peroxide.
- Ostwald process.
- Urea process for the synthesis of hydrazine.

2) Give reasons for the followings: (4 Marks)


- Addition of carbon and silica during the manufacture of white phosphorous.
- Addition of superheated water during the extraction of sulfur.

Question 3:

1) Give a brief account on the most common types of dyes with chemical structures of each kind. (4 Marks)

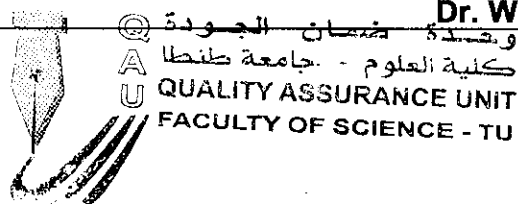
2) Compare in a short notes between: (4 Marks)


- Edible and inedible fats
- Saponification value and iodine number

Please turn over 

Examiners: Prof. Ahmed Elbarbary
Dr. Mohamed Sadek

**Prof. Nadia Elwakeel
Dr. Wael A. Amer**

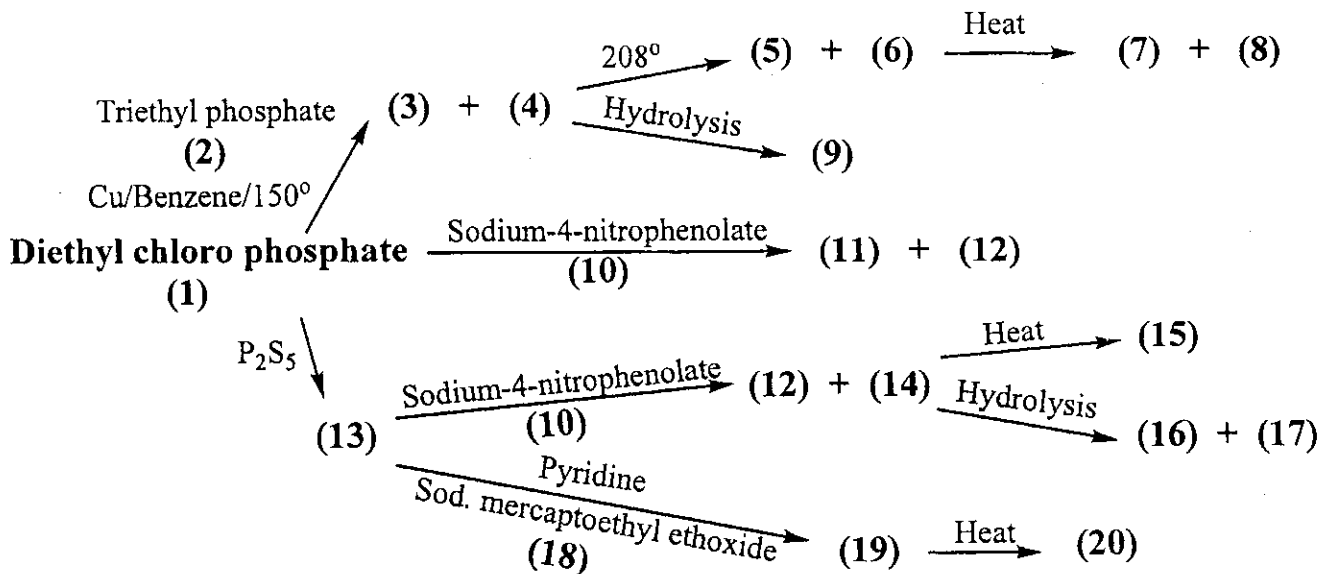


	Tanta University, Faculty of Science, Chemistry Department		
	Examination for Fourth Level (Credit Hours) Students		
Course Title	Chemistry of Pesticides	Course Code: CH4119	
Date:	3 January 2018	Total Assessment Marks: 50	Time Allowed: 2 hrs

I) Discuss each of the followings (10 Marks):

- a) Metabolism of carbofuran.
- b) Merits and demerits of organophosphorous compounds as pesticides.

II) Complete the following scheme and name all the products (10 Marks):



III) Write one method to prepare the following pesticides (10 Marks):

- a) Nornicotin
- b) Ethylchlorobenzilate
- c) Chlordan
- d) Bis-(p-chlorophenoxy) methane
- e) Sodium fluosilicate

IV) Complete the following chemical equations and name all the products (10 Marks):

- a) 4-Chlorobenzaldehyde + Nitroethane \rightarrow A $\xrightarrow{\text{Chlorobenzene}}$ B
- b) Trichloro acetaldehyde + Chlorobenzene $\xrightarrow{\text{c. H}_2\text{SO}_4}$ C $\xrightarrow{\text{Drastic nitration}}$ D
- c) DDT $\xrightarrow{\text{alc.KOH}}$ E $\xrightarrow{\text{Hydrolysis}}$ F
- d) DDT $\xrightarrow{\text{Zn dust/EtOH}}$ G $\xrightarrow{\text{alc.KOH/300}^\circ}$ H
- e) Carbaryl $\xrightarrow{\text{epoxidation}}$ I $\xrightarrow{\text{hydrolysis}}$ J

V) Carryout the following conversions (10 Marks):


- a) DDT to 1,1-bis(4-chlorophenyl)ethene
- b) Acetylene to aldrin
- c) Mercuric bromide to alkyl mercuric hydroxide
- d) Ethanol to methoxychlor
- e) Carbon disulfide to ferric dialkyl dithiocarbamate

With Best Wishes,

Dr. Mohamed Azaam

Dr. Atif El-Gharably

Prof. Dr. Ahmed El-Barbary


	TANTA UNIVERSITY FACULTY OF SCIENCE CHEMISTRY DEPARTMENT		
	FINAL EXAM FOR CRDIT HOUR STUDENTS		
	COURSE TITLE:	LASER CHEMISTRY (CH4113- DOUBLE)	TIME ALLOWED: 120 MINS 1-3
DATE: 11-1-2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 50	

Answer each of the following questions:

- 1- Complete each of the following: (2 marks for each).
 - (i) Laser characteristics:,,,,
 - (ii) Principle components of laser:,,,,
 - (iii) Intensity of coherent light $I = \dots\dots\dots$ and for incoherent light $I = \dots\dots\dots$
 - (iv) The advantages of proton transfer dye laser are:,,
 - (v) Pulsed lasers are used in and the main requirement for laser generation are
- 2- Give the reason for each of the following: (2 Marks for each).
 - (i) Keto compounds are good triplet sensitizers
 - (ii) HClO_4 is used to acidify the laser media instead of HCl
 - (iii) Emission spectrum of most compound occurs from S_1 state
 - (iv) Large Stokes shift is useful for laser generation from dyes
 - (v) Electronic absorption spectrum of benzophenone dispersed in polymethylmethacrylate extends from 320 to 750 nm
- 3- (a)-Suggest the excitation source and output laser emission from the following: (4 Marks).
 - (i) He – Ne laser
 - (ii) chemical lasers
 - (iii) CO_2 laser
 - (iv) dye lasers
 (b)- Explain what happens when a photon interacts with an atom (6 Marks)
- 4- Define or explain each of the following :(2.5 Marks for each).
 - (i) Advantages of excitation spectroscopy
 - (ii) Photodynamic therapy by singlet oxygen
 - (iii) Detection of Salmonella by MUCAP
 - (iv) Removal of H_2S by photons
- 5- Only draw and label each of the following: (2 Marks for each)
 - (i) Jablonski diagram for photophysics of molecular oxygen
 - (ii) Energy levels in excimer lasers
 - (iii) Energy levels in salicylamide as a proton transfer dye lasers
 - (iv) Energy diagram for flash photolysis operation
 - (v) Energy diagram of some possible processes in thermal lensing in detection of singlet oxygen

أ.د. الزيني عبيد

أ.د. سامي الدالي

	TANTA UNIVERSITY FACULTY OF SCIENCE CHEMISTRY DEPARTMENT		
	FINAL EXAM FOR CREDIT HOUR STUDENTS		
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DATE: 11-1-2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 50	

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TANTA UNIVERSITY - FACULTY OF SCIENCE - MATHEMATICS DEPARTMENT

EXAMINATION For 4TH LEVEL (CHM-ZOOLOGY/ENTOMOLGY)

COURSE TITLE: Biostatistics (ST4107)

TIME ALLOWED: 2 Hours

DATE: 14 January 2018

TERM: First

TOTAL ASSESSMENT MARKS: 50

Answer the following questions:

Q1: A national company owns a chain of laboratories at which routine chemical tests are carried out. A junior analyst is employed at one of these laboratories. In order to check his accuracy the senior analyst retested 6 samples chosen at random from amongst those analyzed by this junior. The results were as follows:

Sample	1	2	3	4	5	6
Senior	8.51	14.70	3.59	7.63	5.55	4.57
Junior	8.62	13.97	4.07	7.97	5.83	4.62

Test at 5% level of significance, whether there is a difference between the sets of results. (12 Mark)

Q2: A researcher believes that in recent years women have been getting taller. She knows that from many years ago the average height of young adult women living in her city was 63 inches. She randomly samples 8 young adult women currently residing in her city and measures their heights. The following data are obtained:

64	66	68	65	60	67	65	63
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Do you think that the researcher is correct in her believe? Use $\alpha = 0.05$. (12 Mark)

Q3: Consider the contingency table below of observed values in a sample of 50 individual. Test at $\alpha = 0.05$, is there a dependency between the gender and blood type (13 Mark)

	A	B	AB	O
Male	10	10	15	5
Female	15	5	5	35

Q4: Three detergents Tide, Oxi, Persil in the process of cleaning action on the basis of cleaning degree are compared and the following data are collected: Use $\alpha = 0.05$,

Tide	77	81	71	76	80
Oxi	72	58	74	66	70
Persil	76	85	82	80	77



Are the differences among the means of the three detergents significant? (13 Mark)

You may use:

$$F_{0.05,2,9} = 4.26, F_{0.05,7,11} = 3.01, F_{0.025,7,11} = 3.76, F_{0.025,12,8} = 4.20, t_{0.025,5} = 2.571, t_{0.05,7} = 1.895, \chi^2_{(0.05,2)} = 5.991, \chi^2_{(0.05,3)} = 7.81, F_{0.05,2,12} = 3.89, t_{0.05,5} = 2.015$$

WITH ALL MY BEST WISHES


DR. WAFAA ANWAR

EXAMINERS

DR. WAFAA ANWAR ABD EL-LATIF

PROF. MOHAMED MOHAMED EZZAT

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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY		
	FINAL EXAMINATION FOR (FOUR YEAR) STUDENTS OF CHEMISTRY- ENTOMOLOGY		
	COURSE TITLE:	Apiculture	COURSE CODE: EN 4155
DATE:	16 / 1/ 2018	TOTAL ASSESSMENT MARKS: 50	TIME ALLOWED: 2 HOURS


ملحوظة: الامتحان في صفتين

Part: A (Total Marks: 25)

- 1- Write a short notes on the history and races of honey bee.(5 marks)
- 2- Discuss the honey bee production (types and medical important). (5 marks)
- 3- Discuss in Brief the role of dances in communication through the honey bee colony.(5 marks)
- 4- Viral and bacterial diseases of honey bee.(5 marks)
- 5- Hypopharyngeal gland: development and function through Life span of worker honey bee.(5marks)

Section B (Total Marks: 25)

- 1) Put true for the correct statements and false for the wrong statements: (1 mark each: 10 marks total)
 - A. Field bees orient themselves with the sun and usually fly from early-morning to mid-afternoon. ()
 - B. The first equipment that beekeepers should consider purchasing is protective clothing. ()
 - C. Fermentation occurs when honey moisture levels exceed 20 %. ()

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF ZOOLOGY		
	FINAL EXAMINATION FOR (FOUR YEAR) STUDENTS OF CHEMISTRY- ENTOMOLOGY		
DATE:	16 / 1/ 2018	TOTAL ASSESSMENT MARKS: 50	COURSE CODE: EN 4155 TIME ALLOWED: 2 HOURS

ملحوظة: الامتحان في صفتين

Part: A (Total Marks: 25)

- 1- Write a short notes on the history and races of honey bee.(5 marks)
- 2- Discus the honey bee production (types and medical important). (5 marks)
- 3- Discus in Brief the role of dances in communication through the honey bee colony.(5 marks)
- 4- Viral and bacterial diseases of honey bee.(5 marks)
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