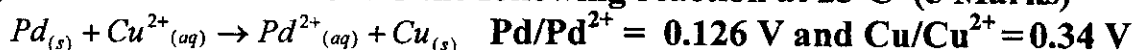
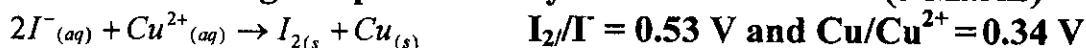
	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY			
	EXAMINATION FOR THIRD YEAR-STUDENTS - DUAL SPECIALIZATION			
COURSE TITLE:	electro chemistry		Course code CH345	
DATE: 28 - 12- 2017	DEC, 2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 50	TIME ALLOWED: 2 HOURS

Answer the following questions: (50 Marks)

1. a) Calculate K and ΔG for the following reaction at 25⁰C (5 Marks)



b) Does the reaction goes spontaneously (5 Marks)

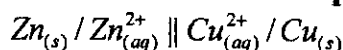


Illustrate your answer.

c) What is the electrode potential of zinc electrode in which the concentration of Zn²⁺ ions is 0.01 M ($E^0_{Zn^{2+}/Zn} = -0.76 \text{ V}$) (5 Marks)

2. a) Mention the basic principle of fuel cell and discuss the four types of fuel cells (10 Marks)

3) A galvanic cell can be represented by (10 Marks)



i) Draw a diagram for the cell, Illustrate the direction of flow of current, electron flow and ion flow .

ii) Clarify the sign of the cathode and anode .

iii) Predict the cathode reaction , the anode reaction and the net cell reaction

iv) What is the name of phase boundary represented as || and why it is present

4) Explain the followings with the aids of equations (15 Marks)

i) Lead acid storage battery

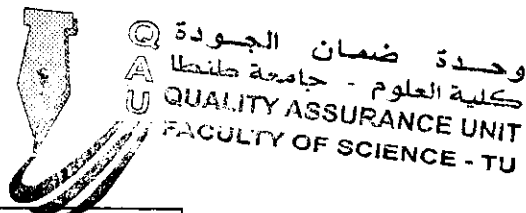
ii) metal-ion electrode

iii) Hydrogen electrode.

iv) Concentration cell

v) Nernst equation and its application

Good luck



EXAMINERS	PROF. DR. IBRAHIM SHIBL PROF. DR. YOUSSEF MOHARRAM
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Final Examination of Organic chemistry for 3th year students

All Double Major
Hetero Cyclic

Total 100 marks

1-) Answer by equations the following reactions

Each item 5 marks

- From phenol how can you prepare benzofuran .
- α - picoline is more acidic than β picoline . Give examples .
- Ring opening of piperidine ring . Show by mechanism .
- Knorr - pyrrole synthesis .
- Pyridine fails to undergo acylation or alkylation (explain)

2-)

Each item 5 marks (a,b,c,e)

- from Glycerol how can you prepare quinoline
- Trimerization of pyrrole
- how can you prepare 3-nitro furan
- write equations and identify the products A,B,C (name all the products)



- show the oxidation and reduction of thiophene . NaOH



3-)

Each item 5 marks(a,b,c,d)

- From o-nitrotoluene how to prepare Indole
- Draw the resonating structure of pyridine-1-oxide
- synthesis of tryptophan
- convert pyridine to 4-nitropyridine
- Arrange the following compounds according to basisty with explanation : 6marks
Triethylamine , pyrrole , pyridine and pepridine

With by best wishes

Handwritten signature

	TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY			
	SUMMER COURSE EXAMINATION FOR 3 rd LEVEL STUDENTS OF MICRO AND CHEM / MICRO			
	COURSE TITLE:	IMMUNOLOGY	COURSE CODE: MB3103	
DATE: 26	DEC., 2017	FRESH	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions:

Q1-Complete the following: (20 marks)

- a- Transplacental immunity is (5 marks)
- b- Antigenic determinant is (5 marks)
- c- The thymus is.....while spleen is..... (5 marks)
- d- Agglutinin is, while precipitinogen is (5 marks)

Q2-Give an account on the following: (40 marks)

- a- Cellular antigenic stimulation and its consequences. (20 marks)
- b- A comparison between B and T cells. (20 marks)

Q3-Explain only two of the following: (40 marks)


- a- Structure and properties of immunoglobulin types. (20 marks)
 - b- ELISA test. (20 marks)
 - c- Pregnancy test. (20 marks)
-

Best wishes

Examiner: Prof. Dr. Wagih El-Shouny

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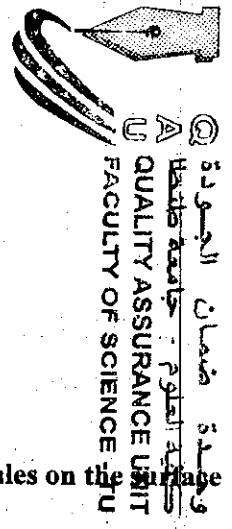
دوسرے کے لئے صورت میں - کیا - اس کے لئے

	TANTA UNIVERSITY, FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY			
	FINAL EXAM FOR LEVEL 3 DOUBLE MAJOR STUDENTS			
	COURSE	SURFACE CHEMISTRY AND CATALYSIS		CODE: CH 3143
DATE	DEC 31, 2017	TERM: FIRST	TOTAL ASSESSMENT MARKS: 50	TIME ALLOWED: 2 H

Please answer these questions

Question (1): Choose the correct answer of the followings (10 marks, 1 for each)

- 1) Which of the following best describes the movement of pollen grains in water?
a) diffusion b) photosynthesis c) Brownian motion d) distillation
- 2) As the concentration of surfactant increases to the critical micelle concentration, the molecules are collected into a structure called:
a) ball b) sphere of ions c) micelles d) dirt particle
- 3) Physical adsorption is directly proportional to the
a) pressure b) temperature c) volume d) concentration
- 4) Foam is a colloidal system in which gas bubbles are dispersed in
a) gas b) liquid c) solid d) none of these
- 5) The dispersion medium for the formation of fog is a liquid
a) True b) False
- 6) Which of the following statement is correct regarding chemical adsorption?
a) it is fast c) it is reversible
b) it forms multimolecular layers d) it has high heat of adsorption
- 7) The use of membranes for separating impurities from colloidal suspension is
a) sedimentation b) ultrasonic c) dialysis d) successive cooling
- 8) Among the Langmuir assumptions is an interaction between the adsorbed molecules on the surface
a) True b) False c) none of these
- 9) Aggregation methods for preparation of colloids involve
a) Ultrasonic waves b) solvent exchange c) mechanical dispersion d) Bredig's arc method
- 10) Adsorption is the a phenomenon in which a substance
a) remains close to other substance c) goes into the body of other substance
b) accumulate on the surface of other substance d) none of these



Question (2) Mark (✓) or (X) as appropriate (10 marks, 1 for each)

- 1) The sedimentation rate is affected by medium viscosity.
- 2) The BET adsorption equation includes the parameters P^0 and ΔH_L .
- 3) V_m is the volume of gas required for the surface to be fully occupied .
- 4) The CMC of surfactant solution is directly proportional to the chain length .
- 5) The surface coverage (θ) of a solid catalyst is equal to $(1+KP) / KP$.
- 6) The rod-like micelle is formed below the CMC.
- 7) The molar conductivity of surfactant solution increases with the concentration up to CMC.
- 8) The mean displacement of colloidal particles is inversely proportional to the diffusion coefficient.
- 9) The intercept of the relationship $1/V$ vs $1/P$ of Langmuir isotherm is $1/bV_m$
- 10) The tendency for particles to migrate from a region of high concentration to a region of low concentration is controlled by the translation diffusion rate.

باقی الاسئلة في الخلف

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UNIVERSITY OF TANTA, FACULTY OF SCIENCE DEPARTMENT OF BOTANY			
FINAL EXAMINATION FOR (SOPHOMERS) Third YEAR STUDENTS CHEM./ MICRO.			
COURSE TITLE: Cell Biology		COURSE CODE: B0 3117	
DATE: 4, 1, 2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions:

Question 1:

Write shortly on the following with labeled drawings if possible

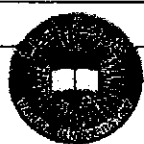
(30 marks)

- 1) Nuclear membranes.
- 2) Microbodies.
- 3) Mitochondria and respiration.
- 4) Functions of lysosomes.
- 5) Chromosome banding.
- 6) Solinoid.

Question 2:

Put (R) in front of right sentences and (W) in front of wrong ones with correction (15 mark)

- 1- Leucoplasts contain carotinoids. ()
- 2- Transcription is the production of DNA from RNA. ()
- 3- Deutroplasm is living contents of the cytoplasm. ()
- 4- The fibers of the three layers of secondary cell wall are parallel. ()
- 5- Granum has both chlorophyll a and b. ()
- 6- Lysosomes are formed by the Golgi apparatus. ()
- 7- Oxsomes are found in the mitochondria inner membrane. ()
- 8- Peripheral protein is free of lipids. ()
- 9- Peroxisomes are rich in catalase enzyme only. ()
- 10- Centrioles are characteristic of plant cells. ()



Course Title:	Physical Organic Chemistry	Course Code: CH3151
Jan. 2018	Term: First	Total Marks: 50 Marks
		Time allowed: 2 Hours

Answer the following questions :

1) On the bases of Hammett correlation, illustrate by mechanistic equations the following:

- a- The reaction pathway of m- and p- substituted benzaldehydes with semicarbazide at different **PHs** in ethanol and 25°C. (4 marks)
- b- Acetolysis of 3-aryl-2-butyl brosylate. (4 marks)
- c- The (LFER)_s break down (deviate from correlation) in part of some reactions of p- substituted derivatives. (Two examples) (4 marks)
- d- The hydrolysis of m- and p- substituted benzoyl chlorides. (4 marks)

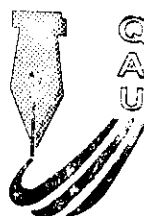
2) All the following statements are false, please illustrate the correct answer:

- a- The rate of S_N¹ hydrolysis of p- methoxy phenyl dimethyl carbonyl chloride is less than unity. (3 marks)
- b- The acetolysis of exo - norbornyl brosylate by N.G.P. gives racemic mixture through classical carbocation intermediate. (3 marks)
- c- In The N.G.P. by both sulphur and nitrogen, the isolated product is secondary alcohol in hydrolysis reactions. (3 marks)
- d- The reaction of m- and p- substituted styrene with Br₂ in CCL₄ is S_N¹ and ρ (+ve & -ve) values. (3 marks)

3) a- Write a brief summary on Hammett equation. (5 marks)

- b- Calculate the rate of saponification of both m-methyl ethylbenzoate and m-methoxy ethylbenzoate (Given that ρ=2.54, σ_{m-methyl}= -0.069 and σ_{m-methoxy}=0.12), then Comment on your answer. (5 marks)

Please Turn Ove



وحدة ضمان الجودة
كلية العلوم - جامعة طنطا
QUALITY ASSURANCE UNIT
FACULTY OF SCIENCE - TU



Tanta University - Faculty of Science - Chemistry Department
Final Exam in "Instrumental 2"
For **Third level** students (**Biochemistry + All Double Sections**)
Course Code: **CH 3149** - Total assessment marks: **100**
Date: **15/1/2018** - Time Allowed: **2h**

Question (1): (20 mark)

Compare between the following:

- A) Column diameters, stationary phase and moving phase in GC and HPLC.
- B) TLC and HPLC chromatography.
- C) Radial and ascending development techniques.
- D) Normal and Reverse phases chromatography.

Question (2): (20 mark)

Explain the following:

- A) Applications of ion exchange and gel chromatography in brief.
- B) Using of GC in identification and quantitative of components.

Question (3): (20 mark)

Write on (two only) the following:

- A) Draw schematic diagram with liable its parts of HPLC, then state the advantages and disadvantages of HPLC.
- B) Define "Selectivity factor", of ion exchange resins and explain the factors affecting on it.

Question (4): Chose the correct answer: (2 marks for each)

1) The basis of chromatography for separating components of a mixture is ..

- A) The differing movement of particles of different mass in an electric field.
- B) The interaction of the components with both stationary and mobile phases.
- C) The absorption of infrared radiation by the components.
- D) The deflection of charged particles in a magnetic field.

- B. will spend more time dissolved in the mobile phase than attached to the stationary phase.
- C. must have a high molecular mass.
- D. will move at a speed close to that of the solvent

10) What does the selectivity factor describe?

- A. The proportional difference in widths of two chromatographic peaks.
- B. The maximum number of different species which a column can separate simultaneously.
- C. The relative separation achieved between two species.
- D. None of the above.

11) Which is most correct, ion exchange is used to analyse:

- A. Inorganic ions.
- B. Organic ions.
- C. Metal ions.
- D. Most molecules that form ions.
- E. Cells and proteins and aminoacids.

12) Which of the following is not true about HPLC?

- A) There is no need to vaporize the samples,
- B) It requires high pressure for the separation of the species,
- C) It has high sensitivity
- D) It is performed in columns

13) A new youth drink contains sugar, salt, alcohol and vitamin C. A gas chromatogram could be used to determine the ...

- A. alcohol and sugar content only.
- B. alcohol content only.
- C. alcohol, sugar and vitamin C content only.
- D. concentration of all ingredients in the drink.



14) An eluotropic series

- A. Ranks column packing material by their relative abilities to retain solutes on the column,
- B. Is a measure of the solvent adsorption energy,
- C. Ranks solvents by their relative abilities to displace solutes from a given adsorbent,
- D. none of the above

15) HPLC methods include:

- A. liquid/liquid (partition) chromatography,
- C. ion exchange and size exclusion chromatography,
- B. liquid/solid (adsorption) chromatography,
- D. all of the above.

2
Wagih El-Shouny

	TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY				
	FINAL EXAMINATION FOR 3RD LEVEL STUDENTS OF SECTIONS: SPECIAL MICROBIOLOGY & MICROBIOLOGY-CHEMISTRY				
COURSE TITLE:	MEDICAL MICROBIOLOGY		COURSE CODE: MB3107		
DATE: 8	JAN., 2018	FRESH	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS	

I-Medical Bacteriology

- 1- Give an account on only two of the following: (25 marks)
- a. The types of staphylococcal toxins.
 - b. Virulence factors of *Pseudomonas aeruginosa*.
 - c. Types and symptoms of leprosy.
- 2- Discuss Only two of the following: (25 marks)
- a) Rheumatic fever and peptic ulcer.
 - b) *E. coli* diarrhoea.
 - c) Types of anthrax and tetanus toxins.

II-Medical Mycology

- 3- Complete the following: (20 marks)
- A- Superficial mycosis like:
1- 2- 3- 4-
 - B- The asexual fruiting bodies in class deuteromycetes are:
1- 2- 3- 4-
 - C- Dimorphic fungi like:
1- 2- 3- 4-
 - D- Symptoms of coccidioidomycosis are:
1- 2- 3- and treated with:
1- 2- 3-
 - E- Order Agonomycetales has two genera like:
1- 2-
- 4- With labelled diagram , explain the following: (6 marks)
Families: tuberculariaceae and Dematiaceae.
- 5- Draw and discuss everything about these diseases: (24 marks)
Seborrhea, Tinea capitis and sporotrichosis (name of fungus, level of infections, symptoms and treatment).
- =====

Best Wishes

Examiners: Prof. Dr. Wagih El-Shouny

Prof. Dr. Suzan Al-Sawah