



Chemistry Department
Faculty of Science
Tanta University

Final Examination
for 2nd grade students
(Double Major Students)

December 2017, Fall semester

Course title:
Organic Chemistry 1
Course Code: CH2143
Exam time: 2 hours
Assessment Mark: 100 M

Answer ALL the following questions.

1- Convert the following (use chemical equations to describe your answer) (25 Marks, 5 marks each)

- From Benzene to Picric acid
- From Phenol to 2,4,6-trinitrotoluene
- From Toluene to n-propylbenzene
- From Aniline to meta-bromoaniline
- From Benzoic acid to para-methyl acetophenone

2- Write down about (use chemical equations to describe your answer) (25 Marks, 5 marks each)

- Kolbe-schmidt reaction
- Replacement of sulphonic group of benzenesulphonic acid by other groups (give three examples)
- Acylation mechanism of nitrobenzene
- Preparation of Diphenyl thiourea from aniline
- Mechanism of *para*-hydroxyazobenzene formation

3- Explain briefly the following:

(25 Marks)

- Differentiation between 1°, 2° and 3° aromatic amines
- The aromaticity of:-

(5 Marks)

- Furan
- Cyclopentadiene anion
- Cyclopropyl cation
- Benzene
- Anthracene

(15 Marks, 3 marks each)

c- The use of phenylmagnesium bromide to prepare aromatic alcohols (5 Marks)
(give three different examples)

4- Discuss the following:

(25 Marks)

- The mechanism of chlorination of phenol, showing why the hydroxyl group is *ortho*- and *para*- directing group.
- The synthetic route of the following:

(5 Marks)

(start from Benzene or Toluene)

(20 Marks, 5 marks each)


- Halazone
- Acetanilide
- ortho*-nitroaniline
- meta*-chlorobenzoic acid

انتهت الأسئلة
Good Luck

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

Examiners: Prof. Dr. Mohamed Berber and Prof. Dr. Abdelbasset Morsi

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بكالوريوس العلوم - كلية العلوم - جامعة طنطا

BOTANY DEPARTMENT - TANTA UNIVERSITY - FACULTY OF SCIENCE			
Final Examination / Second Year All Levels			
Course Title:	General Genetics	Course Code: BO2105	
30 Dec. 2017	Term: First	Total assessment marks: 150	Time Allowed: 2 hours

ANSWER THE FOLLOWING QUESTIONS

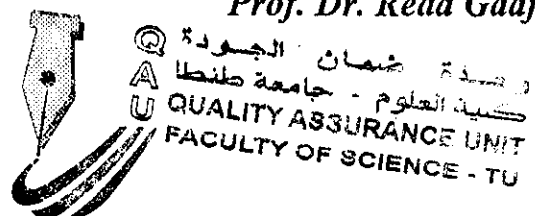
1. Discuss the role of genes present on somatic chromosomes in sex determination. (20 Marks)
2. How cumulative genes affect the degree of character expression. Explain with an example. (20 Marks)
3. Multiple alleles pattern of inheritance is exemplified in plants ... explain this statement. (20 Marks)
4. There are two types of chromosomal systems in sex determination in different organisms... discuss. (20 Marks)
5. Characters of sex-linked genes differ from characters carried on somatic chromosomes. Explain this statement. (20 Marks)
6. Write on the following: (50 Marks)
 - a. Two changes in chromosome numbers. (10 Marks)
 - b. Pseudoalleles. (10 Marks)
 - c. Significance of Meiosis. (10 Marks)
 - d. Mitotic cell cycle. (10 Marks)
 - e. Types of chromatin materials. (10 Marks)

Examiners:

With our best wishes

Prof. Dr. Adel Elshanshory

Prof. Dr. Reda Gaafar





TANTA UNIVERSITY FACULTY OF SCIENCE ZOOLOGY DEPARTMENT			
FINAL EXAM OF MAJOR ZOOLOGY, Chemistry / Zoology, Biophysics, BIOCHEMISTRY, CHEM/BIOCHEMISTRY Divisions			
COURSE TITLE:	Cell Biology and Genetics		COURSE CODE: ZO 2101
TERM: 1 ST SEMESTER	DATE OF EXAM: JAN, 2018	ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS

First Question: (75 marks)

Q1-a: What is different between four only of the following: 30 marks

1. Apoptosis and necrosis.
2. Atrophy and hypertrophy.
3. Histology and histopathology.
4. Hyperplasia and metaplasia.
4. Contrast and resolution.

Q1-b: Write on two only of the following: 15 marks

1. Causes of cell injury.
2. Importance's of apoptosis.
3. Biochemical and physiological responses to cell signaling.

Q1-C: Identifid only four of the following: 20 marks

1. Infarction
2. Depth of Field
3. Cell
4. Centrifugation
5. Oedema
4. Postmortem change

Q1-D: With full labeled drawing illustrate one only of the following: 10 marks

- 1) The morphology of apoptosis and necrosis.
- 2) Cell fractionation to separate the major organelles of the cells.

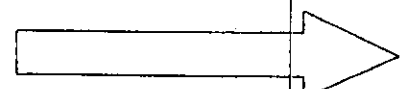
Second Question: (75 marks)

Q2-A: Explain the following briefly using illustrations when necessary (20 Marks):

1. Explain the differences between studying genetics in Biochemistry, Biophysics and Zoology branch of your specialties.
2. Explain the role of the three types of RNA during the formation of a protein.
3. What happens when the ability to repair damage caused by UV light is deficient in a family.
4. Explain briefly the early mechanisms by which how cells decide to start BER.

Q2-B. True (✓) or False (X) (if false, write the correct answer) (20 marks):

1. DNA exists only in nuclei, while RNA exists only in cytoplasm.
2. All DNA in eukaryotic cells comes from both parental and maternal origins.
3. The origin of replication exists at the beginning of each chromosome.
4. Splicing process in DNA repair starts due to activation by the UV light.
5. The mechanism of P-factor depends on hair pin.
6. Initiation of transcription in eukaryotes involves recognition of promoter by transcription factors.
7. Prokaryotic transcripts must not be processed to produce mature mRNAs.
8. The leading strand reading from 5' to 3' is the template strand.
9. Linker histone consists of about 146 bp of DNA wrapped in 1.67 left-handed superhelical turns around the histone octamer.
10. The genetic code is redundant: this means it has multiple codes amounting to the same amino acid.





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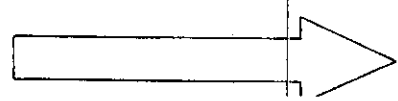
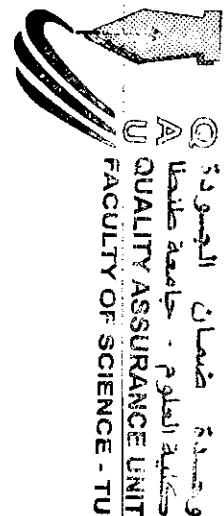
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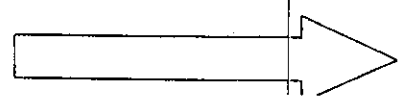
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وحدة ضمان الجودة
 Quality Assurance Unit
 Faculty of Science - TU





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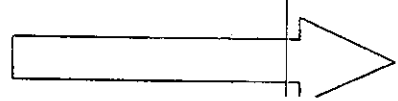
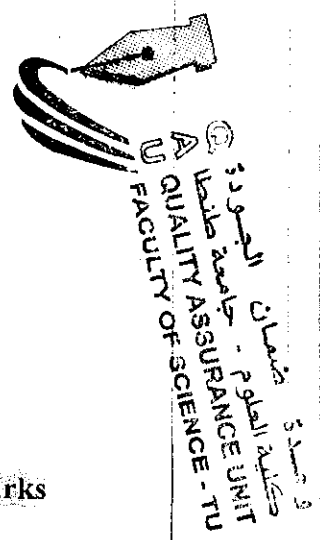
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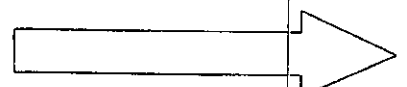
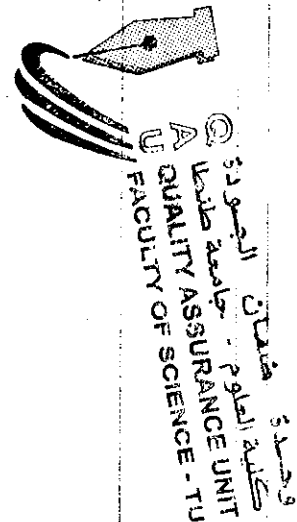
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 <p style="text-align: center;">TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY</p>			
EXAMINATION FOR SECOND YEAR STUDENTS			
COURSE TITLE:	PRINCIPLES OF ANALYTICAL CHEMISTRY		COURSE CODE: CH2105
DATE: 6-1-2018	TERM: FIRST TERM	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Question (I): State true (✓) or false (×) and give the reasons for your answer:

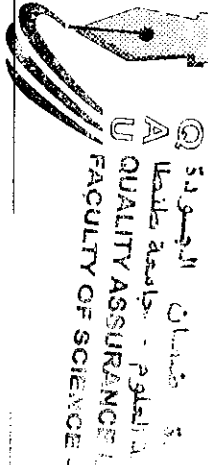
(45 Marks)

- 1) The acidic medium is the best one for the titration of sodium oxalate by potassium permanganate.
- 2) The titration of 0.1N sulfurous acid by sodium hydroxide is stepwise. ($K_1=1.2 \times 10^{-2}$, $K_2=5.6 \times 10^{-8}$)
- 3) EDTA can be called chelating agent.
- 4) The normal hydrogen electrode contains titanium sheet.
- 5) SCN^- ions can be determined satisfactory using Mohr's method.
- 6) The titration of 1 N carbonic acid can be titrated. ($K_1=4.2 \times 10^{-7}$, $K_2=4.8 \times 10^{-11}$)
- 7) The pH value in the titration of weak acid against weak base equals $\frac{1}{2} pK_w + \frac{1}{2} pK_a + \frac{1}{2} \log C_{salt}$
- 8) It is possible in Volhard's method to complete titration in presence of AgCl.
- 9) For writing the half cell equation, the reduced form can be written in the left hand.
- 10) Br^- and I^- ions can be determined by Volhard's method without any titration error.
- 11) $HCrO_4^-$ or $Cr_2O_7^{2-}$ ions can be used to detect the end point for the precipitation titration of Cl^- ions using Mohr's method.
- 12) Nernst equation can be applied for the half cell reaction, if the solutions concentration equals 1 N.
- 13) Each of Fe^{3+} and Ca^{2+} can be determined using EDTA titration.
- 14) Lewis acid can be defined as hydrogen acceptor.
- 15) Heating is necessary for Al^{3+} -EDTA titration.


Question (II): Choose the correct answer from each of the following and give the reasons:

(15 Marks)

- 1) Which of these metal ions can be masked using CN^- ions?
 - a) Mg^{2+}
 - b) Zn^{2+}
 - c) Ni^{2+}
- 2) Distinction between a weak acid or strong acid can be made through.....
 - a) Phenolphthalein indicators
 - b) universal indicator
 - c) methyl orange indicator
- 3) For Mercurimetric determination of cyanide,
 - a) Fe^{3+}
 - b) Hg^{++}
 - c) Hg^+ was used as indicator
- 4) Hydrogen acts as a reducing agent,.....
 - a) by taking oxygen
 - b) by giving electrons
 - c) by taking hydrogen
 - d) Both A and B



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	TANTA UNIVERSITY			
	FACULTY OF SCIENCE			
	DEPARTMENT OF CHEMISTRY			
Final Examination of for second year students (Double major)				
COURSE TITLE	Organic Chemistry 2		COURSE CODE: CH2111	
DATE:	JAN. 2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions: (Each question 25 marks)

1] Correct by equations each of the following:

- i) Ozonolysis followed by hydrolysis of isobutene gives acetaldehyde and formaldehyde.
- ii) Alkaline hydrolysis of 1,1-dichlorobutane and /or 2,2- dichlorobutane forms the same product.
- iii) Treatment of a mixture of benzaldehyde and formaldehyde with NaOH gives sodium benzoate and methyl alcohol.
- iv) Acetic anhydride formation is the reaction of silver acetate with ethylchloride.
- v) Secondary alcohol is formed from the reaction of Grignard reagent with formaldehyde.

2] A) Carry out the following conversions:

- i) Acetylene into 5-methyl-2-hexyne.
- ii) Acetone into Acetic acid.
- iii) Ethylene into tartaric acid.

B) Tow hydrocarbons of the M.F. C₆H₁₂ are treated separately with acidify KMnO₄, in one case, the products are butanone and acetic acid; in the other case, the products are 3-methylbutanoic acid, carbon dioxide and water. Write their structures by using equations.

3] A) Explain by equations, what is the action of:

- a- Aqueous KOH
- b- Ammonia

On each of the following compounds

- i) β- and γ -Chlorobutyric acid
- ii) Acetaldehyde
- iii) Ethylchloride
- iv) Ethylacetate

Please turn over

