
	TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY			
	FINAL EXAM FOR THE FOURTH YEAR STUDENTS (SPECIAL BOTANY)			
	COURSE TITLE	PLANT MOLECULAR SYSTEMATIC	COURSE CODE: BO 4107	
	DEC, 2017	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HRS	

**Answer the followings:**

**1)- Define the followings: (20 marks)**

- 1-Phylogeny and Topology
- 2-Endosymbiotic theory
- 3- Homoplasmy and Heteroplasmy
- 4- Rooted and unrooted phylogenetic
- 5- Lysis

**2)- Complete the followings: (20 marks)**

- 1) - Characteristic of taxonomic character.....,.....and.....
- 2)-The result of a molecular phylogenetic analysis is expressed in.....
- 3)-The components of taxonomy .....and.....
- 4) - Molecular taxonomy uses.....to determine.....
- 5)-Application of phylogenetic.....and.....
- 6) - Nuclear shape of chromosomes is.....while in plastid is.....
- 7) - Plastid DNA regions includes ..... , ..... , and .....
- 8)-Nodes in phylogenetic trees are called .....which are represented by .....

**3)- Write on the followings: (20 marks)**

- 1) - Morphology in relation to taxonomy
- 2) - Role of Whittaker and Theophrastus in the classification
- 3) - Stages of Phylogenetic analysis
- 4) - philosophies of building phylogenetic trees:

**4)- Give reasons for: (20marks)**

- 1-Uses of scientific name
- 2- Different point mutations that have been identified in mtDNA
- 3- Identification have different way
- 4-All species share common ancestors

**5) put (✓) or (X)with Correction if possible (20 marks)**

- 1-Aristotle , first one to propose a system of classification ( )
- 2- Woese, 1987 was the first one discovered the Endosymbiosis ( )
- 3- Length of a branch in a cladogram reflects the number of ancestor events ( )
- 4- Mitochondrial genome contains 73 genes, and encodes 22 types of rRNA ( )
- 5- The cladistic method was first described in 1962 by Walter ( )
- 6-Distances between DNA sequences are more complicated to calculate. ( )
- 7-Zoologist Willi Zimmerman 1940s began to change the phylogeny by an emphasis on geographic variances ( )
- 8- Phylogenetic often makes use of numerical data ( )
- 9- Mitochondrial DNA is considering maternal and paternal inheritance ( )





وحسب ضمان الجودة  
كلية العلوم - جامعة طنطا  
QUALITY ASSURANCE UNIT  
FACULTY OF SCIENCE - T

Best wishes

Examiner committee:

Prof. Dr. Ashraf Haider

Dr. Marwa Hamoud

	Tanta University Faculty of Science Botany Department	
Theoretical exam.	Assessment = 100 marks.	Time allowed: 2 hours.
Course Title: Biocontrol of plant diseases.		Course code: MB4141.
Special Botany program.		Academic year: 2017/2018.
Juniors (Level: 4 – Semester: 1)		30/12/2017

(1) Illustrate an example of biological control of pruning wounds. (10 marks)


(2) Put  $\checkmark$  or X and correct the false: (24 marks)

1. Protoplast fusion between *T. harzianum* strain T-75 and T-12 produce T-22 strain.
2. Preventing the entrance of pathogen to uninfected place called eradication.
3. Adult parasitoids are free living.
4. Strip harvesting hay alfalfa is an example of augmentation biological control.
5. *Chaetomium* is used as BCA against powdery mildews.
6. The time between the last pesticide application and harvest called re-entry intervals.
7. Trichodex is a myco-fungicide used in controlling *Phytophthora* and *Botrytis*.
8. Chitosan is a non-toxic polymer produced from lignin.
9. Entomopathogenic fungi have epizootic effect on insect population more than viruses.
10. Mobile predators such as jumping spiders have good vision.
11. Using of BCA causing toxicity to plant.
12. Biological control is less effective than chemical fungicides.

(3) Complete the sentence: (36 marks)

1. *Trichoderma* species have been very successfully used as myco-fungicides because they are 1..... to 10.....
2. The direct interaction between BCAs and pathogens involve physical contact and synthesis of.....,.....as well as.....while indirect interaction involve.....and.....
3. The aim of a formulation process is to obtain a product with a significant .....of at least.....
4. Fruits and vegetables are subject to attack from pathogens during.....,.....and.....
5. There are five types of parasitoids according to the stage of the host they attack. These types are 1.....2.....3.....4.....5.....
6. Ketomium, is a broad spectrum.....formulated in the form of.....and produced from the fungus.....
7. The fungal BCA should be.....,.....,.....and.....

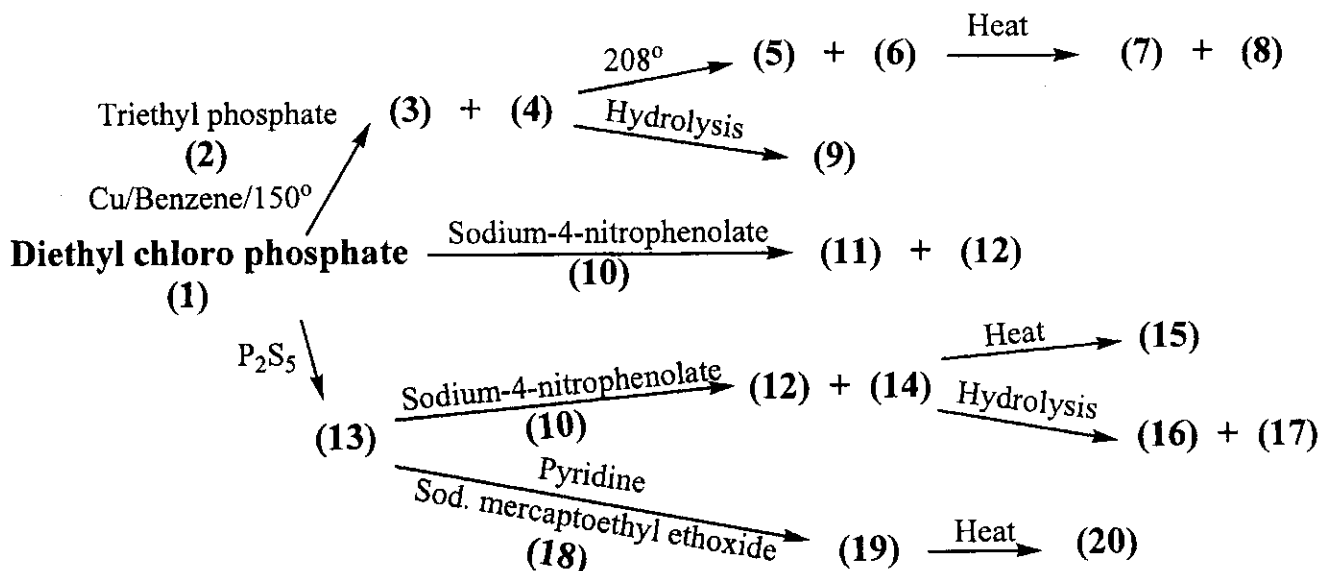
C. W. S.

	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):**

- Metabolism of carbofuran.
- 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):**

- Nornicotin
- Ethylchlorobenzilate
- Chlordan
- Bis-(p-chlorophenoxy) methane
- Sodium fluosilicate

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

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

**V) Carryout the following conversions (10 Marks):**



- DDT to 1,1-bis(4-chlorophenyl)ethene
- Acetylene to aldrin
- Mercuric bromide to alkyl mercuric hydroxide
- Ethanol to methoxychlor
- 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, DEPARTMENT OF BOTANY			
	FINAL EXAMINATION (JANUARY 2018) FOR THE FOURTH YEAR STUDENTS (SPECIAL BOTANY AND CHEMISTRY/BOTANY)			
COURSE TITLE	GENETIC ENGINEERING		COURSE CODE: BO4103	
DATE: JANUARY, 2018		TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS	

**Answer the following questions:**

- 1) Write briefly on only three of the followings (30 marks)
  - a) Biolistic Gun technique for gene delivery.
  - b) Problems encountered with gene expression in prokaryotes.
  - c) Basic steps to produce transgenic plants.
  - d) Types of cloning vectors.
  
- 2) Compare between only four of the followings: (20 marks)
  - a) Insertion and replacement cloning
  - b) Prokaryotic and Eukaryotic expression vectors
  - c) Selectable markers and reporter genes with examples.
  - d) Electroporation and Microinjection
  - e) Cosmids and plasmids.
  
- 3) Give reasons for: (20 marks)
  - a) *Agrobacterium*-mediated system can't be used for transformation of monocotyledonous plants.
  - b) Genomic clones can't be expressed in prokaryotic expression vectors.
  - c) Use of Gold metal and Helium gas in Biolistic Gun.
  - d) Chemical methods are not commonly used for gene transfer.
  
- 4) Complete the followings: (10 marks)
  - a) Different types of promoters are: .....
  - b) Features of cloning plasmids are: .....
  
- 5) With labeled drawings only illustrate the followings: (20 marks)
  - a) *Ti*-plasmid.
  - b) Typical eukaryotic expression vector.

*Best wishes*

Examiner committee:  
 Prof. Dr. Ashraf Haider  
 Prof. Dr. Hanan Ibraheem

Question 5. Define each of the following (16 Marks; 2 each):  
1. NADH<sub>2</sub>, 2. Substrate level phosphorylation, 3. Glyoxysomes, 4. Enthalpy, 5. First law of thermodynamics, 6. Gibbs, 7. Gluconeogenesis, 8. Oil body.

1. In oxidative phosphorylation, for each pair of electrons passed along the electron transport chain from NADH+H caused the formation of .....  
2. Butyryl-ACP + malonyl-ACP produces a compound containing ..... carbons.  
3. The first committed step in fatty acids biosynthesis is the synthesis of ..... from ..... and ..... by the enzyme .....  
4. Fatty acyl CO<sub>A</sub> synthase is present in organelles called ..... and this enzyme converts ..... into ..... which is the initial substrate for a process called .....  
5. In thylakoid membrane, the proton motive force is initiated depending on ..... while in inner mitochondrial membrane, it depends on ..... and .....  
6. Adenine nucleotide translocator transports ..... into mitochondria in exchange for .....  
7. H<sup>+</sup> of respiratory chain are pumped from ..... to ..... which produces a force called ..... used for the synthesis of ..... molecules by a protein called ..... and this process is called .....

Question 4. Complete the following statements (42 Marks; 2 each):

1. Glyoxalate cycle, 2. β-oxidation, 3. Citric acid cycle  
4. oxidative reactions of pentose phosphate pathway

Question 3. What is the mechanism of (20 Marks; 5 each):


1. Metabolizing lipids into sucrose in oily seeds, 2. Exergonic reactions, 3. glycolysis

Question 2. What is the importance of (12 Marks; 4 each):

1. Number of fatty acids in one molecule of triglyceride is: 4, 3, 1, 2.  
2. Number of turns to synthesize one molecule of fatty acid (C<sub>22</sub>) is: 10, 7, 2, 4.  
3. Number of double bonds of inolenic acid 18:3 is: 18, 0, 2, 3.  
4. COOH of a fatty acid molecule originates from: Acetyl CO<sub>A</sub>, malonyl CO<sub>A</sub>, ACP.  
5. In fermentation, glucose is oxidized: incompletely, completely, maximally, fully.

Question 1. Choose the right answer (10 Marks; 2 each):

Answer the following questions

	DATE: 11-1-18	TERM: FIRST	TOTAL MARKS: 100	TIME ALLOWED: 2H
	COURSE TITLE: BIOENERGETICS		COURSE CODE: B04101	
EXAMINATION FOR SENIORS (FOURTH YEAR) STUDENTS OF BIOLOGY-SPECIAL BOTANY DEPARTMENT OF BOTANY FACULTY OF SCIENCE TANTA UNIVERSITY				

Best wishes  
Prof. Fatma Elshini

1. NADH<sub>2</sub>, 2. Substrate level phosphorylation, 3. Glyoxysomes, 4. Enthalpy, 5. First law of thermodynamics, 6. Gibbs, 7. Gluconeogenesis, 8. Oil body.

**Question 5. Define each of the following (16 Marks; 2 each):**

1. In oxidative phosphorylation, for each pair of electrons passed along the electron transport chain from NADH+H caused the formation of .....  
2. Butyryl-ACP + malonyl-ACP produces a compound containing ..... carbons.  
3. The first committed step in fatty acids biosynthesis is the synthesis of ..... from ..... and ..... by the enzyme .....
4. Fatty acyl CO<sub>A</sub> synthase is present in organelles called ..... and this enzyme converts ..... into ..... which is the initial substrate for a process called .....
5. In thylakoid membrane, the proton motive force is initiated depending on ..... while in inner mitochondrial membrane, it depends on .....  
6. Adenine nucleotide translocator transports ..... into mitochondria in exchange for .....
7. H<sup>+</sup> of respiratory chain are pumped from ... to ... which produces a force called... used for the synthesis of ..... molecules by a protein called ..... and this process is called .....

**Question 4. Complete the following statements (42 Marks; 2 each):**

1. Glyoxalate cycle, 2. β-oxidation, 3. Citric acid cycle
4. oxidative reactions of pentose phosphate pathway

**Question 3. What is the mechanism of (20 Marks; 5 each):**


1. Metabolizing lipids into sucrose in oily seeds, 2. Exergonic reactions, 3. glycolysis

**Question 2. What is the importance of (12 Marks; 4 each):**


1. Number of fatty acids in one molecule of triglyceride is: 4, 3, 1, 2.
2. Number of turns to synthesize one molecule of fatty acid (C22) is: 10, 7, 2, 4.
3. Number of double bonds of linolenic acid 18:3 is: 18, 0, 2, 3.
4. COOH of a fatty acid molecule originates from: Acetyl CO<sub>A</sub>, malonyl CO<sub>A</sub>, ACP.
5. In fermentation, glucose is oxidized: incompletely, completely, maximally, fully.

**Question 1. Choose the right answer (10 Marks; 2 each):**

**Answer the following questions**

	DATE: 11-1-18	TERM: FIRST	TOTAL MARKS: 100	TIME ALLOWED: 2H
	COURSE TITLE: BIOENERGETICS COURSE CODE: BO4101		EXAMINATION FOR SENIORS (FOURTH YEAR) STUDENTS OF BIOLOGY-SPECIAL BOTANY DEPARTMENT OF BOTANY FACULTY OF SCIENCE TANTA UNIVERSITY	

(2)

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY			
	EXAMINATION FOR (SENIORS) STUDENTS OF SPECIAL BOTANY AND ZOOLOGY SECTIONS			
COURSE TITLE:	BIOCHEMISTRY 1		COURSE CODE: 4173 <i>ch</i>	
DATE: 15.1.18	JANUARY, 2017	FIRST TERM EXAM	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Answer the following questions:

**I- A-Explain each of the following:-**

**(40 marks)**

- i-pyruvate dehydrogenase catalyzes oxidative decarboxylation of pyruvate*
- ii-- Isomerases are a general class of enzymes that convert a molecule from one isomer to another..*
- iii-Flavin nucleotides involved in redox reactions of C-C Bonds.*
- iv-Transamination mechanism*
- v-Reaction sequence for the biosynthesis of pantothenic acid*

**II- Give an account of the following by biochemical equations**

**(40 marks)**

- i Glycogenesis is the process of glycogen synthesis, in which glucose molecules are added to chains of glycogen for storage.*
- ii-Some enzymes are relatively specific*
- iii-FMN and FAD synthesis*
- iv- Biosynthesis of NAD<sup>+</sup> starts with nicotinic acid and PRP*
- v-Biotine acts as an enzyme-bound carrier of CO<sub>2</sub>*

**III- Choose the correct answer . Explain by equation**

**(20 marks)**

**i-TPP is synthesized by direct transfer of the pyrophosphate group from**

- a-phosphoric acid*
- b-pyrophosphate*
- c- ATP*

**ii-Trypsin and chymotrypsin exhibit :-**

- a- absolute specificity*
- b- relative specificity*
- c- stereo- specificity*

**iii-The first step in the glycolytic pathway**

- a- produces ATP*
- b-uses ADP as a substrate*
- c-produces glucose -6 -phosphate*

**iv- Lipolysis is the breakdown of lipids and involves hydrolysis of triglycerides**

**into**


- a-Diacyl glycerol and free fatty acid*
- b- mono acylglycerol and free fatty acids*
- c- glycerol and free fatty acids*

PROF.DR. AHMED SAAFAN



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



<b>Tanta University - Faculty of Science - Botany Department</b>				
<b>EXAMINATION FOR JUNIOR (4th YEAR BOTANY)</b>				
	Course Title	الكتابة العلمية والعروض		Course Code: BO 4113
Date	Jan 2018	Term: First	Total Assessment: 100 Marks (BO 4105)	Time Allowed: 2 Hours



(٤ درجات لكل نقطة: المجموع الكلي = ١٠٠ درجة)

- ١- أذكر أهم أنواع الكتابة العلمية؟
- ٢- ما المقصود بالكلمات المفتاحية، وما الهدف منها؟
- ٣- أذكر ثلاثة من أهم مميزات العنوان الجيد؟
- ٤- أذكر ثلاثة من أهم مميزات الملخص؟
- ٥- ما هو الهدف الأساسي من مقدمة أى نوع من الكتابة العلمية؟
- ٦- أذكر ثلاثة من أهم ما يجب مراعاته عند الشروع فى كتابة نتائج البحث أو الرسالة العلمية؟
- ٧- وضح كيف تعد المناقشة أصعب الأجزاء فى الكتابة العلمية؟
- ٨- ماهى أشهر الطرائق المستخدمة فى كتابة مراجع البحوث والرسائل العلمية؟
- ٩- ما الذى يجب أن تحتويه كلمة الشكر فى الكتابة العلمية؟
- ١٠- متى يجب، ومتى لا يجب كتابة تفاصيل الطرائق المستخدمة فى إعداد البحث العلمى؟
- ١١- متى يكون عرض نتيجة البحث العلمى كشكل أفضل من عرضها كجدول؟
- ١٢- أعط مثال للأخطاء الشائعة فى جداول الكتابة العلمية؟
- ١٣- أذكر ثلاثة مما يجب مراعاته عند إختيار الصور لوضعها فى البحث أو الكتاب العلمى؟
- ١٤- ما المقصود بمعجم المصطلحات، ومتى يجب كتابته؟
- ١٥- ترتب ورقة الخطأ والتصويب بعدة طرق، أذكر إحداها؟
- ١٦- أذكر أهم فوائد التفكير العلمى؟
- ١٧- ماهى الخطوات الأساسية للمنهج العلمى؟
- ١٨- أذكر مراحل الذاكرة الأربعة، مع التفريق بإيجاز بينها؟
- ١٩- وضح الفرق بين الطرق الشائعة لتذكر المادة العلمية أثناء العرض، مع تحديد أفضلها؟
- ٢٠- عرف التغذية الراجعة، وكيف يمكن التعامل معها بعد العرض؟
- ٢١- ما الذى تتوقعه فى غيبة التفكير العلمى؟
- ٢٢- ماهى الأسئلة التى يجب على الباحث الإجابة عليها بخصوص مشكلة البحث؟
- ٢٣- من أهم خصائص النظرية العلمية أنها قابلة للتكذيب، وضح ذلك؟
- ٢٤- ما الفرق بين مشكلة البحث العلمى والغرض منه؟
- ٢٥- قارن بين التفكير التجريدى والتفكير العينى؟

مع تمنياتنا لكم بالتوفيق والسداد: لجنة الممتحنين (أ.د. كمال شلتوت & د. شيماء عبد الحميد)





	<b>Tanta UNIVERSITY, Faculty of Science, Department of Botany</b>				
	<b>EXAMINATION FOR SENIORS STUDENTS OF CHEMISTRY/BOTANY</b>				
	<b>COURSE TITLE:</b>	<b>Bacteriology</b>		<b>COURSE CODE:</b> <b>MB4133</b>	
<b>DATE: 17-1-2018</b>	<b>JANUARY, 2018</b>	<b>TERM: FIRST</b>	<b>TOTAL ASSESSMENT MARKS:</b> <b>100</b>	<b>TIME ALLOWED:</b> <b>2HOURS</b>	

**Answer the following questions:**

**1-Complete the following: (20marks)**

- a- Pilli functions are .....
- b- Single specific origin of DNA replication in bacteria called...
- c- Cell mass detected by .....
- d- Synchronous cell culture used for .....
- e- Leading strand identified as.....

**2-Compare between cell wall structure of Gram+ve and Gram -ve bacteria (20 marks)**

**3- Discuss (20 marks)**

- a-Conjugation
- b-Bacterial movement

**4-Identify the following: (20 marks)**

chemostate, transformation, batch culture, duplication time

**5-Mention uses of bacteria as: (20 marks)**

- a-Biofertilizers
- b-Biocontrol of plant diseases

**Best wishes**

Examiners: Dr. Nanis G. Allam, Dr.Samya Shabana

TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT CHEMISTRY			
Final EXAMINATION for 4 <sup>th</sup> YEAR students of Botany and Microbiology			
COURSE TITLE:		Biopolymer Chemistry	
DATE:		DECEMBER 25 <sup>TH</sup> 2017	
TERM:		FIRST	
TOTAL ASSESSMENT MARKS:		60	
COURSE CODE:		CH4179	
TIME ALLOWED:		2 HOURS	

Answer the following questions:

- 1- Define biopolymers, Biodegradable polymers, homopolymers, copolymer, thermoplastics, Glass transition Temperature. 7 marks
- 2- Classification of polymers according to: 7 marks
  - a) Source of availability.
  - b) Monomer arrangement in copolymers.
- 3- Interfacial polymerization technique. 7 marks
- 4- Explain chain termination process in free radical addition. 7 marks  
polymerization.
- 5- A- describe the classification of biopolymers. 8 marks  
B- Various types of PLA.
- 6- Draw the chemical structure of the following biopolymers: 7 marks
  - i) Poly(hydroxy alkanolic acid)s
  - ii) Poly( Lactic acid)
  - iii) Poly( glycolic)
  - iv) Poly(Lactide-co glycolid) PLGA
  - v) Poly(butylene adipate) (PBA).
- 7- A) Role of suspending agent in suspension polymerization. 7 marks  
B) Disadvantages of emulsion polymerization.

مع تحيات لجنة الممتحنين

أ.د. احمد عكيلة

أ.د. الرفاعي قناوى