
	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY					
	FOURTH YEAR (CHEMISTRY \ MICROBIOLOGY) & (Special Microbiology) FINAL EXAM.					
	COURSE TITLE: Yeast biology		TOTAL ASSESSMENT MARKS: 100			COURSE CODE: MB 4101
DATE: 23/12/ 2017	TERM: FIRST	Time allowed: 2 hours				

Answer the following questions with drawing if possible:-

I- Discuss briefly the following: 30 Marks

- 1- Classification key of the Ascomycetes yeasts.
- 2- Cell wall components in yeasts.

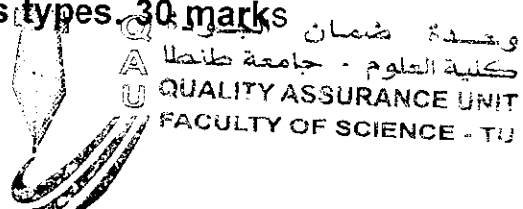
II- Choose one answer:



10 marks

- 1- Presence of *Carotenoid pigments* in yeast sp ,so it identified as:
 - a. *Filobasidiella* b. *Saccharomyces* c. *Rhodotorula*
- 2- Fimbriae are found in :
 - a. Ascomycetes yeasts b- Imperfect yeasts c. Hetero basidiomycetes yeasts d. Ascomycetes and Hetero basidiomycetes yeasts
- 3- The Ascogenous Yeasts had derived from:
 - a. Conidia b. Blastoconidia c. Pseudo hyphae d. Hyphal progenitor
- 4- Genomic libraries consist of:
 - a. Large number of *E.coli* clones, each of which bearing a particular recombinant plasmid.
 - b. Large number of *Saccharomyces cerevisiae* each of which bearing a particular recombinant plasmid.
 - c. Non of the above
- 5- *Hansenula* ascospores are :
 - a. globose shaped - b. globose to hat shaped -c. Saturne-shaped d. All of the above

See next page

III- Discuss the Yeasts growing cultures types 30 marks




	Tanta University Faculty of Science Botany Department	
Theoretical exam.	Assessment = 100 marks.	Time allowed: 2 hours.
Course Title = Antimicrobial Agents.		Course code = <u>MB 4105</u> .
Microbiology special program.		Academic year: 2017/2018.
Seniors (Level: 4 – Semester: 1)		الإختبار في ورقة واحدة. 30/12/2017.

Answer the following questions (with fully labeled diagram, if possible):	Mark
1- Explain the general principles of antimicrobial use.	10
2- Discuss the benefits and risks of antibiotic prophylaxis.	10
3- Gain knowledge about the drug-drug interactions of antifungal agents.	10
4- Write on the invention of modern antimicrobial drugs in brief.	10
5- Focus on the target sites of antimicrobial agents inside microbial cells.	10
6- Mention the different mechanisms of antifungal agents.	10
7- Write in brief on the fighting back against antibiotic resistance.	10
8- Summarize the adverse drug effects of antibiotics.	10
9- Explain in brief one of the various antimicrobial strategies, represented during your study.	20
Total marks of written exam: <u>100</u>	

Best wishes..... Examiner:	Dr.: Anwer S.M. El-Badry.
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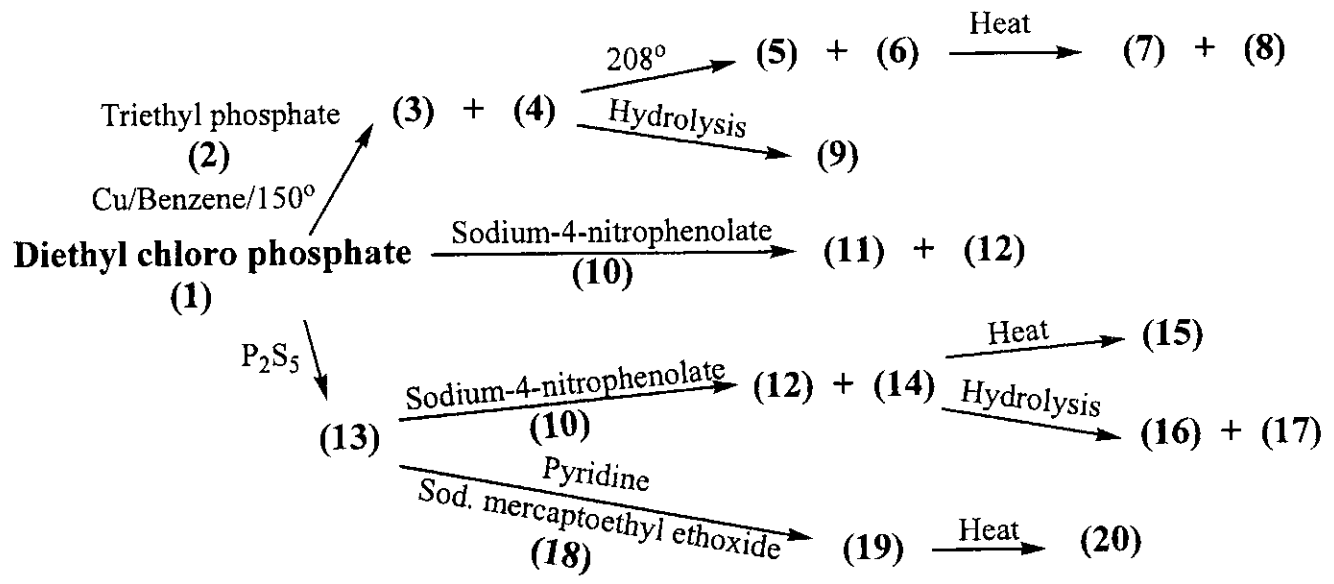
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	Tanta University, Faculty of Science, Chemistry Department		
	Examination for Fourth Level (Credit Hours) Students		
Course Title	Chemistry of Pesticides	Course Code: CH4119	
Date:	3 January 2018	Total Assessment Marks: 50	Time Allowed: 2 hrs

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 $\xrightarrow{\text{---c. H}_2\text{SO}_4\text{---}}$ 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 $\xrightarrow{\text{---alc.KOH/300}^\circ\text{---}}$ 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

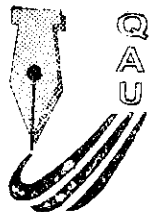
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	Tanta University - Faculty of Science - Botany Department			
	EXAMINATION FOR JUNIOR (4th YEAR MICROBIOLOGY)			
Course Title	الكتابة العلمية والعروض		Course Code: MB4109	
Date	Jan 2018	Term: First	Total Assessment: 100 Marks	Time Allowed: 2 Hr

(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 اختيار 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 & أ.د. أحمد شرف الدين)



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

Examination / FOR STUDENTS OF LEVEL FOUR OF CHEMISTRY / MICROBIOLOGY	
Course Title:	Microbial toxins
17/ 1/ 2018	Course Code: MB4113 Term: FIRST Total assessment marks: 50 Time Allowed: 2 hours

Answer the following questions:

First question:

[20 Marks, 4 each]

Write briefly on the following:

- 1- Stability of Ochratoxin in food . 2- Ergot toxins
- 3-Effect of patulin on health. 4- Degradation of aflatoxin by chemical treatment.
- 5- Factors favorizing aflatoxin production.

Second question:

[15 Marks, 3 each]

1- Complete the following questions:

- 1- Fumonisine toxin produced by -----
- 2- Aflatoxin -----is identified as a carcinogen.
- 3- Gyrometrine toxins produce by -----.
- 4- ----- is the most significant producer of patulin.
- 5- Orelanine toxin produce by -----..

Third questions:

[15 Marks, 3 each]

Choose the correct answer of the following:

- 1-Which of the following microorganisms produces Muscarine?
a) *Aspergillus* b) *Fusarium* c) *Clitocybe dealbata*.
- 2-Which toxin can be the source of nephrotoxin?
a) Aflatoxin b) Ochratoxin c)None of these
- 3- Amantins toxins are toxic fungal metabolite produce by :
a) *Amanita Phalloides* b) *Aspergillus* c) *Byssochlamys*
d) All of these
- 4- Citrinin is a mycotoxin originally isolated from
a) *Penicillium citrinum* b) *Aspergillus niveus*
c) *Monascus ruber* d) All of these
- 5- Molecular formula of aflatoxin B2 is
a) $C_{17}H_{12}O_6$ b) $C_{17}H_{14}O_6$ c) $C_{17}H_{12}O_7$

With my best Wishes

Examiner: Prof.Dr. Saida Amer

Answer the following questions

QUESTION 1:

- (i) Give an informal description of a pushdown automaton (PDA) that recognizes the language $A = \{a^i b^j c^k : i, j, k \geq 0 \text{ and } i = j \text{ or } i = k\}$. Is A DCFL? Why or why not?
- (ii) Convert the CFG $G = (V, \Sigma, R, S)$, where $R = \{S \rightarrow aTb \mid b, T \rightarrow Ta \mid \epsilon\}$, to an equivalent PDA.
- (iii) State the pumping lemma for context-free languages, and then use it to prove that the language $B = \{ww : w \in \{a, b\}^*\}$ is not context free.


QUESTION 2:

- (i) Define Turing machine (TM) and its acceptance. Design and formally describe a TM that decides the language consisting of all strings of 0s whose length is a power of 2. Give the run of this TM on the input strings 00 and 000000.
- (ii) Show that every multitape TM has an equivalent single-tape TM. What does this mean in respect of robustness?
- (iii) State with proof the connection between enumerators and Turing-recognizable languages.

QUESTION 3:

- (i) Show that the problems of testing whether a DFA does not accept any string and whether two DFAs recognize the same language are decidable.
- (ii) Show that the language $A_{TM} = \{\langle M, w \rangle : M \text{ is a TM and } M \text{ accepts } w\}$ is undecidable, but it is Turing-recognizable.
- (iii) Show that the complement of a decidable language is decidable, and then prove that a language is decidable if and only if both it and its complement are Turing-recognizable.



 1969	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY		
	THEORITICAL EXAMINATION FOR 4 TH YEAR STUDENTS OF CHEMISTRY/ MICROBIOLOGY		
	COURSE TITLE: PHYSIOLOGY OF ALGAE	COURSE CODE: BO 4123	
	DATE: JAN 2018	TERM: 1	TOTAL ASSESSMENT MARKS: 100
			TIME ALLOWED: 2H.

Question 1: Give short notes on the followings (40 marks)

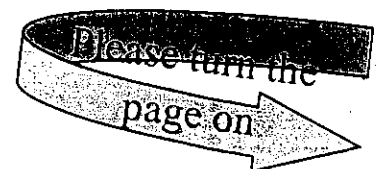
- 1- Batch algal cultures: definition, function, advantages and disadvantages.
- 2- Chemical structure of vitamin B₁₂ and its three analogous.
- 3- Photobioreactors for algae: uses, advantages and disadvantages.
- 4- Chemical structure of the chlorophyll molecule.
- 5- Photoassimilation of acetate by algae.
- 6- Nitrogenase enzyme composition and its role in nitrogen fixation process.
- 7- Photorespiration via glycolate pathway. What are the purposes of this process?
- 8- Carotenoids pigments and their role in photosynthesis process.



Question 2: Correct the underlined words on the followings (20 marks)

1. Continuous cultures are used for mass production process like biodiesel.
2. Stirring is used to maintain the pH of an algal culture while aeration supplies it with energy.
3. Salinity is a limiting factor in sea water algal cultures.
4. FAD and glutathione are needed for nitrogen fixation process.
5. In chemotrophy, light energy is converted into chemical energy of ATP and NADPH₂.
6. The chlorophyll is extracted using chloroform and then identified by weighing.
7. Cu and Si are inorganic macronutrients for algal growth.
8. Closed indoor algal cultures are easily exposed to contaminations.
9. The violaxanthin is the type of phycobiliproteins found in Rhodophyta.
10. Euglenophyta members are considered autotrophic algae while chlorophyta are auxotrophic.
11. The inflow medium is usually added according to the generation time in batch culture systems.
12. Inoculum age and size are factors affecting the phase of declining relative growth in algae.
13. Mixing and pH are factors affecting nitrogen fixation by algae.
14. Chlorophyll C is characterized by two spectra light bands in the blue region.

Question 3: Explain the following scientific terms (20 marks)

- 1- Mixotrophic and heterotrophic algae.
- 2- Thiamine requirement by algae.
- 3- Combined nitrogen affects nitrogen fixation by algae.
- 4- The turbidostat and chemostat algal cultures.
- 5- The oxytroph and haplotroph algae.



	TANTA UNIVERSITY, FACULTY OF SCIENCE, BOTANY DEPARTMENT		
Final Examination for fourth level Students (Chemistry/ Microbiology)			
Course title:	MICROBIAL BIOREMEDIATION		Course Code: MB4107
DATE: 6, JAN., 2018	TERM: FIRST	TOTAL ASSESSMENT MARKS: 50	Time Allowed: 2 hours

Answer the following questions:

Q1: Complete the following:

(10 MARKS)

(Each space with 1 MARKS)

- 1- The aim of Kyoto protocol (1997) is
- 2- The rotating disc digester has two main advantages and
- 3- The ideal percentage of carbon dioxide in the composition of the earth atmosphere is
- 4- Biohydrometallurgy includes two of bacterial activity
And
- 5- The process in which magnetic bacteria take up the magnetic material and then deposit the magnetite is called
- 6- The biodegradability of a compound depends on its,
..... and


Q2: Write short notes on Only Five of the following:

(25 MARKS)

- 1- Addition of microorganisms or (DNA). (5 MARKS)
- 2- Degradation of polymers such as polyurethane. (5 MARKS)
- 3- Growth associated degradation of carbohydrates. (5 MARKS)
- 4- Bacterial succession in the polluted environment. (5 MARKS)
- 5- Beneficial effects of probiotics. (5 MARKS)
- 6- Biodegradation of Xenobiotics. (5 MARKS)

See next page

تابع الأسئلة في الخلف

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT CHEMISTRY			ع
	Final EXAMINATION for 4 th YEAR students of Botany and Microbiology			
COURSE TITLE:	Biopolymer Chemistry		COURSE CODE: CH4179	
DATE:	DECEMBER 25 th 2017	TERM: FIRST	TOTAL ASSESSMENT MARKS: 50	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.



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مع تحيات لجنة الممتحنين

أ.د. احمد عكيلة

أ.د. الرفاعي قناوى