	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY			
	EXAMINATION FOR SENIOR (FOURTH YEAR) STUDENTS OF SPECIAL MICROBIOLOGY/CHEMISTRY AND MICROBIOLOGY			
COURSE TITLE:	YEASTS BIOLOGY	ACADEMIC YEAR: 2020-2021	COURSE CODE: MB 4101	
DATE:	6 JANUARY 2021 ONE PAGE EXAM.	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS.

I-Multiple choices (Circle the right answer); (20 Marks):

- Sporobolomyces is one of
a. basidiomycetous yeasts b. ascomycetous yeasts c. anamorphic yeasts d. bacteria
- Kloeckera yeast sp. form
a. bipolar annelloconidia b. multilateral conidia c. polar conidia d. arthroconidia
- All mating pheromones lead to a transient arrest of cell division in their target cell cycle in
a. late G1 phase b. G2 phase c. S-phase d. M-phase.
- Yip, Yep, YRp and YCp are
a. yeast plasmids b. fungi plasmids c. bacterial plasmids d. none of the previous
- Pichia as an ascosporogenous yeast that form ascospore shaped like
a. hat to saturn b. needle c. rod d. crescent

II- Put (✓) or (X) in front of each of the following sentences (20 Marks):

- Ascomycetous yeast Nematospores form 8 ascospores in two bundles
- Cryptococcus neoformans cause disease known as cryptococcosis
- M-factor of *Schizosaccharomyces pombe* is linear nonapeptide with S-farnesyl methyl cysteine as the carboxy-terminal amino acid.
- Diplobiontic yeasts lifecycle characterized by shortening of diploid stage, being confined to the zygote cell.
- The pheromone signal is transmitted from receptor via G protein.



III- Write on each of the following (40 Marks):

- Processing of a- and α -mating factors on *Saccharomyces cerevisiae*?
- Importance of Germ tube test as tentative test for *Candida albicans* identification?
- Yeast cell wall structure
- Consequences of mating pheromone effects to opposite mating yeast cell?

IV- Explain briefly (20 Marks):

- a-The life cycle of *Filobasidiella neoformans*? b- sci- ascospores formation conditions?
c-Yeast Genomic library construction? d- Yeast cell wall

Prof.Dr.Yehia A.-G.Mahmoud

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY				
	FOURTH YEAR (CHEMISTRY \ MICROBIOLOGY) FINAL EXAM.				
	COURSE TITLE:	Yeast biology			COURSE CODE: MB 4101
DATE: 6 January	2021	TOTAL ASSESSMENT MARKS:100	TERM: FIRST	Time allowed: 2 hours	

I-Choose one answer: 20 marks

1. Ascomycetous yeast from a sexual structure known as:
 - a. Ascus b-Basidium c-Blastospores d-All of them
2. Nitrate is not assimilated in species of
 - a. *Pichia* b-*Hansenula* c-*Saccharomyces* d-None of them
3. Yeast could not be occur
 - a. In Plants b- In Soils, water c-In Insects d-All of them
4. Media with malt extract preferred for growth of
 - a. *Rhodosporidium* b-*Leucosporidium* c-A&b d-*Filobasidiella*
5. Basidiomycetous yeast contain
 - a. Clampconnection b. Swollen basidia c. Swollen basidia and clamp connection .
- 6-Asci of *Debaromyces* with:
 - a. Protuberance b-Fimbria c-Slime layer d-capsule
7. Baker yeast namely
 - a. *Candida albicans* b-*Debaromyces* c-*Shizosaccharomyces* d-*Saccharomyces cerevisiae*
8. Anamorphic yeasts are:
 - a. Basidiomycetous b-Imperfect-yeast c-Ascomycetous yeast d-All of them
9. Blastoconidia formed in:
 - a. All yeasts b-Ascomycetous yeast c-Imperfect yeast d-Basidiomycetous
10. *Kluyveromyces* contain
 - a-Multipolar budding b- Bipolar budding c-a&b d- None of them

II- Discuss briefly the following: 25 marks

- 1- Define classification characters of Ascomycetous yeasts and *Hanseiaspora* species.
- 2- What is the standard description of *Filobasidiella neoformans* species withdrawing its life cycle

III- Illustrate the growth in yeasts 20 marks

IV - Complete the following: 20 marks

- 1-Fimbriae is.....
- 2- Cell wall of yeasts contain

see next page

3-The construction of Genomic gene libraries involve the following steps.....

4-Clamp connections is found in yeasts.

5-*Rhodotorula* is characterized by.....

V - Mark true or False

15 marks

1-Diploid stage in *Saccharomyces ludwigii* life cycle is short

True False

2- Morphological character is one of descriptive features for yeast classification.

True False

3- *Saccharomyces* used as model system for molecular genetic research

True False

4- All yeast species cause Candidiasis diseases.



True False

5- *Cryptococcus* is one of most pathogenic yeast species because of absence of capsule.

True False

Best wishes :

Prof. Dr. Eman Abd El-Zaher

	TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY			
	FINAL EXAMINATION FOR THE FOURTH YEAR (SPECIAL MICROBIOLOGY)			
X	COURSE TITLE	MICROBIOLOGY OF SOIL	COURSE CODE: MB4103	
DATE: 9/01/2021	JAN. 2021	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS	

Answer the following question

First question: Using Schematic diagram only, explain the following 25 marks

- a. Pattern of Distribution of microorganisms in soil.
- b. The importance of soil microorganisms to P availability.
- c. Seasonal microbial activity
- d. Microbial biomass with the soil depth

Second question: Write on the following (25 marks)

- a. Methods for measuring the food web.
- b. Assimilation and release of phosphorus, nitrogen, oxygen .
- c. Explain the influence of soil pH on quantitative and qualitative composition of soil microbes
- d. Properties of healthy food web.
- e. Suitable environment for mycorrhiza formation

Third question: Select the correct answer (25 marks)

1. Which of the following fungi can improve the uptake of phosphorus by plant?

- | | |
|------------------------------------|-----------------------------|
| a. <i>Saccharomyces cerevisiae</i> | b. VA Mycorrhiza |
| c. <i>Candida torulopsis</i> | d. <i>Aspergillus niger</i> |

2. The diagnostic enzyme for nitrogen-fixing organisms is

- | | | | |
|----------------|----------------------|--------------------|------------------|
| a. nitrogenase | b. nitrate reductase | c. nitrate oxidase | d. none of these |
|----------------|----------------------|--------------------|------------------|

3. Denitrification is

- a. reduction of nitrate (NO₃⁻) to nitrogen gas
- b. reduction of nitrate to organic nitrogen compounds
- c. both (a) and (b)
- d. changing of atmospheric nitrogen (N₂) to nitrogen compounds

4. Which is the main source of biofertiliser?



- | | | | |
|------------------|-------------|------------------|------------------|
| a. Cyanobacteria | b. Bacillus | c. Streptococcus | d. None of these |
|------------------|-------------|------------------|------------------|

5. The conversion of molecular nitrogen into ammonia is known as

- | | | | |
|------------------|--------------------|----------------------|-------------------|
| a. nitrification | b. denitrification | c. nitrogen fixation | d. ammonification |
|------------------|--------------------|----------------------|-------------------|

6. The groups of bacteria which have the ability to fix nitrogen from air to soil are

- | | | | |
|--------------|------------------|---------------------|------------------|
| a. symbiotic | b. non symbiotic | c. both (a) and (b) | d. none of these |
|--------------|------------------|---------------------|------------------|

	TANTA UNIVERSITY FACULTY OF SCIENCE BOTANY DEPARTMENT		
	Examination / FOR STUDENTS OF LEVEL FOUR OF CHEMISTRY / MICROBIOLOGY		
Course Title:	Microbial toxins		Course Code: MB4113
22/ 2/ 2021	Term: FIRST	Total assessment marks: 50	Time Allowed: 2 hours

Answer the following questions:

First question:

[20 Degrees, each4]

Write briefly on the following:

- 1- Ergotism .
- 2- Occurrence of aflatoxins.
- 3- Gyromitrin toxin.
- 4- Stability of Ochratoxin in food .
- 5- Mechanism of aflatoxin action.

Second question:

[15 Degrees]

1- Complete the following questions: (10 Degrees, each 2)

- 1- Gyromitrin produced by -----
- 2- The most important Ochratoxins in food is -----
- 3- Clinical signs of aflatoxicosis in animals include ---,---,-----and-----.
- 4- -Orilianine toxin produce by----- .
- 5- Ergot alkaloid divided into -----and-----..

2-Effect of aflatoxin on health. (5 degrees)

Third questions:

[15 degrees]

Choose the correct answer of the following: (10 degrees, each 2)

1-2-Patulin is a toxic fungal metabolite produce by :

- a) *Penicillium* b) *Aspergillus* c) *Byssochlamys*
- d) All of these

2-Which of the following microorganisms produces Zearalonone?

- a) *Aspergillus* b) *Fusarium* c) both a and b

3- Which toxin can be the source of nephrotoxin?

- a) Aflatoxin b) Ochratoxin
- c) None of these

4- Molecular formula of Aflatoxin B1 is

a) $C_{17}H_{12}O_6$ b) $C_{17}H_{14}O_6$

c) $C_{17}H_{12}O_7$

5- Which of the following microorganisms produces Trichothecenes?

a) *Aspergillus* b) *Fusarium* c) both a and b

2- Degradation of aflatoxin by chemical treatment. (5 degrees)

With my best Wishes

Examiner: Prof.Dr. Saida M. Amer



Tanta University - Faculty of Science - Botany Department



EXAMINATION FOR JUNIOR (4th YEAR MICROBIOLOGY)

Course Title	الكتابة العلمية والعروض		Course Code: MB 4109
Date	Jan 2021	Term: First	Total Assessment: 100 Marks
			Time Allowed: 2 Hr

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

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

مع تمنياتنا لكم بالتوفيق والسداد: لجنة الممتحنين (أ.د. كمال شلتوت)

	TANTA UNIVERSITY, FACULTY OF SCIENCE, BOTANY DEPARTMENT		
Final Examination for fourth level Students (Chemistry/ Microbiology)			
Course title:	MICROBIAL BIOREMEDIATION		Course Code: MB4107
DATE: 10, MAR. , 2021	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 outer earth shell in interacting subsystems is called
- 2- Biohydrometallurgy includes two of bacterial activity
..... And
- 3- The potentially degradable wastes needs residences time
(days).....to be degradable.
- 4- Rubber can be degraded by while polycarpolactone can
be degraded by
- 5- Parameters determining the level of pollution in waste water
....., and

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

(25 MARKS)

- 1- Addition of surfactants. (5 MARKS)
- 2- Degradation of polymers such as polyacrylamide. (5 MARKS)
- 3- Growth associated degradation of proteins. (5 MARKS)
- 4- Heavy metals bioremediation. (5 MARKS)
- 5- Beneficial effects of probiotics in aquaculture. (5 MARKS)
- 6- Two types of Xenobiotic compounds. (5 MARKS)

See next page

تابع الأسئلة في الخلف

Q3: Compare between of the following:
1- Methods used in solid waste treatment.

(10 MARKS)
(10 MARKS)

Q4: Explain Only One of the following:

(5 MARKS)

1- Reed bed biofilter.

(5 MARKS)

2- Biodegradation of xenobiotics.



(5 MARKS)

=====

Best wishes

Examiner

Dr. Maha Mahmoud Azab.

	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: 2021
Juniors (Level: 4 – Semester: 1)		24 Mars 2021

(1) Writ short notes (not more than 5 lines) about how to biologically control the pruning wound pathogen; *Eutypa armeniaca*. (10 marks)

(2) Give the definition of 4 only of the following: (20 marks)

1. Predator.
2. Antibiotic.
3. parasitoid.
4. Exclusion.
5. Shelf life

(3) Put \checkmark or X and correct the false: (30 marks)

1. Crown gall diseases are bacterial diseases caused by *Agrobacterium*.
2. Mechanism of *Ampelomyces* in attacking blight fungi is antibiosis and parasitism.
3. Bt bacteria has the power to control insects with alkaline pH in the gut.
4. Classical biological control usually done by government authorities.
5. BCAs can be combined with biofertilizers.
6. Chitosan is a toxic polymer of alpha-1,4-glucoseamine produced from cuticle.
7. *Trichoderma* species are common in air and foliar ecosystems.
8. Half of all predators are Coleopterans
9. The mycofungicide Plant Shield[®] is comprises from spores of *Chaetomium*.
10. *Trichoderma harzianum* strain T-22 was produced by protoplast fusion between *T. harzianum* T-95 and T-12.
11. The association between two or more species where both derive benefits is called antagonism.
12. In hyperparasitism, pathogen is indirectly attacked by metabolites of BCA.
13. An effective BCA is genetically stable.
14. AQ10 biofungicide contains conidia of *Trichoderma*.
15. BCA multiply easily in the soil.

(4) Complete the sentence:

(16 marks)

1. *Agrobacterium radiobacter* strain K84 produces an antibiotic called..... that active against strains of *A. tumefaciens* that carry a specific type of Ti plasmid which encodes for the production of the opine
2. In some soils, disease does not occur in susceptible host plants even though theis present or is introduced into the soil. Such soils are said to be.....
3. Types of interactions contributing to biological control:‘.....‘.....‘.....‘.....and.....
4. The fungus.....the cause of pre-harvest berry rot, is an example of..... It was controlled by the saprophytic fungus.....
5. solid formulation of BCAs can lead to undesirable side effects such as and decreased

(5) Choose the right answer for each sentence:

(24 marks)

- 1)can penetrate the insect cuticle directly:
1. Bacteria 2. Viruses 3. Nematode 4. Fungi
- 2) Interaction between organisms for nutrients:
1. Antagonism 2. Competition 3. Parasitism 4. Predation
- 3)is any disease producing microorganism:
1. Parasitoid 2. Predator 3. BCA 4. Pathogen
- 4) The BCA of *Verticillium dahliae* is:
1. *T. harzianum* 2. *A. radiobacter* 3. *Pythium oligandrum* 4. *C. olëophila*
- 5) The interaction in which one organism infect another causing disease:
1. Antagonism 2. Mutualism 3. Predation 4. Parasitism.
- 6) Control of *S. rolfsii* by *Serratia marcescens* is mediated by:
1. Chitinase 2. Dehydrogenase 3. Cellulase 4. Glucanase

مع أطيب التمنيات بالتوفيق

ا.د. سماح الديبكي