- اذا اراد الباحث دراسة العاملين معا وتمكن من الحصول على ارانب متجانسة فى العمر و لكنها مختلفة فى الوزن
- قارن بين التصميمين السابقين عن طريق النموذج الاحصائى لكل منهما وايهما اكثر دقة ولماذا

السؤال الثالث : (20 درجة)

1- عرف التجربة العاملية مع ذكر مميزاتها ..... (5 درجة)
2- التكرار المتخفى وأهميته ..... (5 درجة)
3- التباين المشترك للتجربة ..... (5 درجة)

4- إذا كان لديك البيانات التالية ..... (5 درجات)

Treat.	R_1	R_2	R_3	R_4	Total
A_0B_0	9	10	13	8	40
A_0B_1	10	13	13	16	52
A_1B_0	11	12	10	11	44
A_1B_1	16	17	12	19	64
Total	46	52	48	54	200

حلل التجربة احصائيا

انتهت الاسئلة
بالتوفيق والنجاح

T Values

d.f / p	8	9	12	15	16
0.05	2.31	2.26	2.18	2.13	2.12
0.01	3.36	3.25	3.05	2.95	2.92

$F_{0.05}(4,12)=3.26$ $F_{0.01}(4,12)=5.41$

$F_{0.05}(1,9)=5.12$ $F_{0.01}(1,9)=10.56$

$F_{0.05}(3,9)=3.86$ $F_{0.01}(3,9)=6.99$

الامتحان النظرى
العام الجامعي 2018/2017

القسم الذي يقدم المقرر: **المحاصيل** الزمن: **ساعتين**

اسم المادة وكودها: **تصميم تجارب 316 ز**

لجنة الممتحنين: د. محمد عبد العزيز عبد الحليم سيد

د. الحسين حماده عبد العظيم

أجب على جميع الأسئلة التالية :

السؤال الأول : (20 درجة)

أ. لديك عينة تم سحبها بطريقة عشوائية من احد المجتمعات وكانت كالتالى:

15	12	12	13	11	10	10	12	14	11

1. ما هى قيمة المتوسط الحسابى والوسيط لهذه العينة ..... (2 درجة)
2. احسب قيمة التباين لهذه العينة..... (2 درجة)
3. هل تنتمى هذة العينة لمجتمع المتوسط الحسابى له يساوى 16..... (2 درجة)
4. اذا سحبت عينة اخرى من هذا المجتمع وكان تباينها = 1 وعدد افرادها =10 اى العينتين يكون اكثر دقة ولماذا؟ ..... (2 درجة)
5. احسب حدود الثقة لهذا المجتمع باستخدام العينة الاكثر دقة عند مستوى 1% .. (2 درجة)

ب. اجرى احد الباحثين تجربة معملية على عينتين من الفئران وحصل على النتائج التاليه

$\overline{X}_1 = 10$ $n_1 = 9$ $S_{\overline{X}_1} = 1$

$\sum X_2 = 144$ $S_2 = 2$ $d.f = 16$ للتجربة

اختبر المعنوية بين العينتين السابقتين..... **(10 درجات)**

السؤال الثانى : (20 درجة)

A. اراد باحث عمل تجربه لدراسة تأثير استخدام هرمون نمو معين (A) **بتركيزين** وايضا دراسة اثر الحرارة (B) **بمستويين** على ارانب معملية و قرر عمل 4 مكررات لكل معاملة

1. ما هو عدد الوحدات التجريبية اللازمة لهذه التجربة
2. صمم هذه التجربة فى الحالات الاتيه:

- اذا اراد الباحث دراسة كل عامل على حده وحصل على ارانب متجانسة

Part (2) (25 Marks)

A. Answer <u>two only</u> of the following questions. Use well labeled diagrams where appropriate. **(10 Marks)**

1. Explain the 3-hydroxypropionate bicycle.
2. Illustrate the fatty acid and lipid synthesis
3. Discuss the steps of dark reactions of photosynthesis process by microbe.

B. Write short notes on: (answer <u>two only</u>) **(6 Marks)**
Use well labeled diagrams where appropriate.

1. Reductive acetyl coA pathway.
2. Anoxygenic photosynthesis.
3. Purine.

C. Put a mark (√) in front of the correct statement and a mark (X) in front of the wrong statement with <u>error correction</u>: (answer <u>six only</u>) (9 Marks)

1. The end products of noncyclic photophosphorylation are CO_2 and H_2. ( )
2. Purple sulfur bacteria produce oxygen as a product of photosynthesis. ( )
3. The reaction of protein synthesis from amino acids is considering ( ) a catabolic reaction.
4. Glutamine is considered as nitrogen donor and used for purine ( ) nucleotides، amino sugars biosynthesis.
5. The part of ATP contains the most energy is pentose sugar. ( )
6. Synthesis of ATP from inosine 5'-monophosphate requires ATP ( ) as an energy source.
7. Anabolism removes water by a process called phosphorylation ( )

With best wishes
Dr. Shymaa Ryhan

الامتحان النظرى
العام الجامعي 2018/2017

القسم الذي يقدم المقرر: **المحاصيل** الزمن: **ساعتين**

اسم المادة وكودها: **تصميم تجارب 316 ز**

لجنة الممتحنين: د. محمد عبد العزيز عبد الحليم سيد

د. الحسين حماده عبد العظيم

أجب على جميع الأسئلة التالية :

السؤال الأول : (20 درجة)

أ. لديك عينة تم سحبها بطريقة عشوائية من احد المجتمعات وكانت كالتالى:

15	12	12	13	11	10	10	12	14	11

1. ما هى قيمة المتوسط الحسابى والوسيط لهذه العينة ..... (2 درجة)
2. احسب قيمة التباين لهذه العينة..... (2 درجة)
3. هل تنتمى هذة العينة لمجتمع المتوسط الحسابى له يساوى 16..... (2 درجة)
4. اذا سحبت عينة اخرى من هذا المجتمع وكان تباينها = 1 وعدد افرادها =10 اى العينتين يكون اكثر دقة ولماذا؟ ..... (2 درجة)
5. احسب حدود الثقة لهذا المجتمع باستخدام العينة الاكثر دقة عند مستوى 1% .. (2 درجة)

ب. اجرى احد الباحثين تجربة معملية على عينتين من الفئران وحصل على النتائج التاليه

$\overline{X}_1 = 10$ $n_1 = 9$ $S_{\overline{X}_1} = 1$

$\sum X_2 = 144$ $S_2 = 2$ $d.f = 16$ للتجربة

اختبر المعنوية بين العينتين السابقتين..... **(10 درجات)**

السؤال الثانى : (20 درجة)

A. اراد باحث عمل تجربه لدراسة تأثير استخدام هرمون نمو معين (A) **بتركيزين** وايضا دراسة اثر الحرارة (B) **بمستويين** على ارانب معملية و قرر عمل 4 مكررات لكل معاملة

1. ما هو عدد الوحدات التجريبية اللازمة لهذه التجربة
2. صمم هذه التجربة فى الحالات الاتيه:

- اذا اراد الباحث دراسة كل عامل على حده وحصل على ارانب متجانسة

Assiut University
Faculty of Science
Botany&Microbiology Dept.
Code: 392 B

Final exam of: Microbial Metabolism
Year: 2017/2018
Time: 2 hour
Total marks: 50 marks

Part (1) (25 marks)

(A) Write on three only of the following: (15 marks)

1- Citric acid cycle using labeled diagram

2- Calculate the total energy which will be produced from break down of palmatic acid (C_{16})

3- Oxidative Phosphorylation by equations

4- Catabolism of protein in microbial cells in details

(B) Answer with (X) or (√) and correct the wrong: (10 marks)

1- Catabolic reactions transfer energy from complex molecules to NAD ( )

2- Non-carbohydrates which function as sole carbon source, they must be ( ) convert to glucose by a process called Gluconeogensis.

3- Anaerobic respiration is different than respiration because it does not involve the ( ) Krebs cycle or an electron transport chain.

4- An electron transport chain is a series of compounds that transfer ( ) electrons from electron donors to electron acceptors via hydrogenation reactions

5- Thymine is broken down into β-aminoisobutyrate which can be ( ) further broken down into intermediates eventually leading into the glycolysis

Dr/ Maysa M. A. Ali

Continue

Assiut University Academic Programs: Microbiology and Chem. & Microbiology
Faculty of Science Studying Year : 2017/ 2018
Department: Botany & Microbiology Allowable Time : Two hours
Course Code: 396B Course Title: Industrial microbiology
Total Degree: 50 marks Forth& Third levels, Second semester

Final Term Exam
Part I: 25 Marks, One hour

---

1. Give an account on only four of the following: (16 marks, 4 for each)

a) Types and characters of raw materials can be used for industrial fermentation.
b) Fermentation strategy for Baker yeast production.
c) The factors affecting ethanol fermentation.
d) Down-stream processes in vinegar production.
e) Glycerol production using osmophilic yeasts.

2- What are the main advantages and / or disadvantages of using only three of the following? (9 marks, 3 for each)

a) Application of biotechnology in industries.
b) Ethanol as an alternative motor fuel.
c) Mechanical anti-foam in vinegar production.
d) *Saccharomyces cerevisiae* for Baker yeast production.

WITH MY BEST WISHES
Prof. Dr.: A. A. Zohri

من فضلك: الجزء الثانى فى ورقة مستقلة

Assiut University

Faculty of Science, Botany and Microbiology Department

Academic Program: Microbiology, Chemistry and Microbiology
Course Code: 396 B
Course Title: Industrial Microbiology

Studying Year: 2017-2018
Exam: 2nd Term - Final Exam. May 2018

Industrial Microbiology

(Time allowable: 60 min; 25 marks)

Answer the following questions.

1- Give an account to the classification of antibiotics according to their mode of action and producer-organisms. (5 marks)

2- Answer Two questions only from the following (10 marks for each one)

A- Discuss the importance of *Aspergillus niger* strains in the industrial fermentation with special reference to the process conditions that control these fermentation.

B- Explain the microbial side chain degradation reactions of steroids.

C- "Actinomycetes play an important role in the microbiological fermentation" Explain with special reference to the different types of fermentation.

Good Luck

Assuit University
Faculty of Science
Botany & Microbiology
Department

Industrial Chemistry Students
Final exam 13-05- 2018
Subject : Fermentation Industries
(314 B)

Q1: Discuss each of the following: (15 Marks)

a. GRAS microorganisms.

b. Antibiotics.

c. The fermentation conditions.

Q2: Give an account on the following: (15 Marks)

a. The structure and producing microorganisms of cephalosporin C, tetracycline and vitamin C.

b. The mechanism of action each of nystatin, chloramphenicol and griseofulvin.

Q3: Show with equations the biosynthetic pathways of the following: (20 Marks)

a. Penicillin G. Discuss the role of the embedded enzymes.

b. Ethanol, gluconic acid and glutaric acid. Mention the applied microorganisms and uses of each product.

Best wishes

Prof. Dr. Ahmed Lotfy El-Sayed

Second question: Write brief note for **6 ONLY** of the following **(3 marks each)..... (18 marks).**

1. The most diagnostic characters of Nymphaeaceae, numerate 3 of Egyptian plants belonging to this family.
2. The Karyotype.
3. Cyathium structure of Euphorbiaceae (with drawing).
4. Sporoderm stratification.
5. Habit, leaves and fruits of Bombacaceae
6. Floret composition of Poaceae (with drawing).
7. Chromosome number

Third question: Write brief note for **6 ONLY** of the following **(2 marks each)..... (12 marks).**

1. Seeds and ovary of Lythraceae and Asclepiadaceae.
2. Anthocyanidins and Betacyanins.
3. Leaves and gynoecium of Acanthaceae and Casuarinaceae.
4. Pollinia.
5. Stamens and the perianth of Magnoliaceae and Amaranthaceae.
6. Polyads.
7. Inflorescences and androecium of Boraginaceae and Orobanchaceae.

Prof. Dr. A. Fayed

Assiut University - Faculty of Science - Botany Department

Final Examination (2017 – 2018) **Time allowed: 2 hours**

Taxonomy of Flowering Plants (THIRD LEVEL) - (332 ن)

ANSWER THE FOLLOWING QUESTIONS (50 degrees):

First question: Complete 8 ONLY of the following sentences with suitable words (2.5 mark each) .....(20 marks).

1. Semantides are the.....: ..... is a primary semantide, ... a secondary semantide, and .....are tertiary semantides.

2. The seeds of Tamaricaceae are ....., while of Bombacaceae are .....

3. According to the shape of the pollen apertures in surface view, the following 3 types could be distinguished: **a**.....,
b....., **c**.....

4. The wild native plants representing the family Liliaceae in Egypt are ....., ... and .....

5. There are probably three main reasons for the recent rapid growth of chemotaxonomy:
a .....
b .....
c .....

6. The fruits of Iridaceae are ....., while of Arecaceae are ..... or .....

7. The technique of serology depending on .....

8. Within family Asclepiadaceae, five stamens are fused to forming a single structure known as the .....

9. The wild native plants representing the family Asclepiadaceae in Egypt are ..... and .....

10. The inflorescence of Salicaceae is .....

بقيـــة الأسئلـــة علـــ الصفحـــة التاليـــة »»»»»»»»»»»»

Department of Botany and Microbiology Faculty of Science Assiut University		Third level - 2017/2018 Final Examination of Microbial Enzymes (394 B) Second Semester – 2 hours

Answer 4 only of the following questions (50 marks)

1-Give an account for each of the following (12.5 marks)

a-The history and definition of enzymes.

b- Nanoparticles in enzymes activity.

2-Explain each of the following with drawing (12.5 marks)

a-How can the cell regulate enzyme activity by AMP and byproducts.

b-Hypotheses of enzyme–substrate mechanisms.

3-Compare in table between each of the following (12.5 marks)

a- Inhibitors on bases of Lineweaver-Burk plot, with drawing.

b-Oxidoreductases used in industry on bases of microorganisms and application.

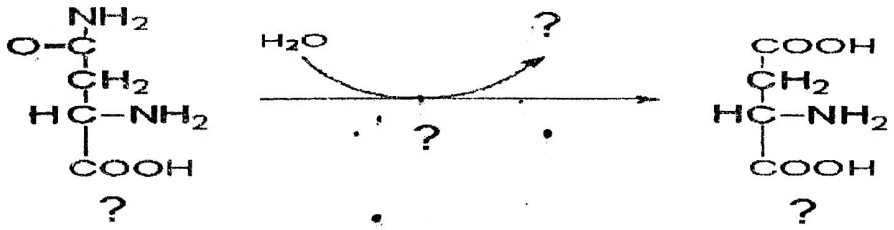
4-Write on each of the following with drawing (12.5 marks)

a-Enzymes properties.

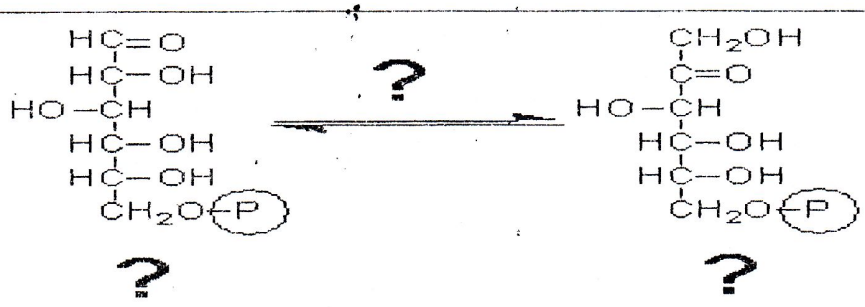
b-Application of enzymes in diagnoses of diseases.

5-Illustrate the four EC digits and complete the following (12.5 marks)

a- EC 3.5.1.1



b- EC 5.3.1.9



Good luck *Prof. Dr. Hassan A. H. Hasaan*

Assiut University **Faculty of Science** **Botany & Microbiology Department**		**Host parasite relationship** **Course No. 366 (B)** **Second Semester: 2017-2018**
Final Examination for The Third Level		
Time allowed: 2 hours		

Answer the following Questions----------(50 mark)

1- **Discuss the following Question (Obligate)----------(15 mark)**

a- Inoculums sources, arrival of inoculums and secondary inoculums (give an example)
b- Mode of infection
c- Harmful effect of pathogenicity

2- **Compare between Five Only of the following----------(25 mark)**

a- Seedling infection and Root- hair infection
b- Injuries and Lesions infection
c- Dispersal of plant pathogens by Insects and Air
d- Dormant spores and other structures of Soil borne and Seed borne fungi
e- Effect of the pathogen on Wild collateral and Alternate hosts
f- Deposition of Gums and formation of Tyloses

3- **Give account on Only Two of the following----------(10 mark)**

a- Formation of Abscission layer by the plant as a defense mechanism
b- Effect of the pathogen on the Absorption of water by plant roots
c- Effect of the pathogen on Growth of the host

Good Luck

Prof \ Khayria Mohammed abdel-Gawad

Assiut University
Faculty of Science
Botany & Microbiology Department
Second Semester 2017-2018
May - 2018

Final Exam: Third Level
Course Code: B334
Course Title: Flora of Egypt
Allowable Time: 2 hours
Total Degree: 50 Marks

Answer the following Questions

Q1. Write short note on 4 only of the following: 20 Marks

1- Identification and uses of the Herbarium.
2- Endemism and its subcategories.
3- Ranking and position in Botanical Nomenclature.
4- Position of Egypt in the world floristic zones.
5- Phytogeographical characteristics of Eastern desert in Egypt.

Q2. Compare between 4 only of the following: 20 Marks

1- Holotype and Lectotype.
2- Autonym and Tautonym.
3- Diagnostic and Synoptic Dichotomous botanical keys.
4- Photographs and Illustrations as comparison methods for plant identification.
5- Sinaitic and Deltaic sectors of Mediterranean coastal belt.

Q3. Discuss 2 only of the following sentences: 10 Marks

1- Chamaephytes are one of plant life forms in Egypt (Give Examples).
2- Vegetation units in Mareotis sector.
3- Plant life in Red Sea coastal plain.

With My Best Wishes ..... Dr. Ahmed Faried

Question no(3): Describe with drawing three only of the following (15 marks)

1. Types of steles in pteridophyta.
2. Development stages of antheridia in *Anthoceros.*
3. Morphology and anatomy of *Sphagnum* leaf.
4. Development stages of archegonia in *Riccia.*

Question no(4): Compare in table between two only of the following (10 marks)

1. Differences between gymnosperm and angiosperm plants.
2. Sporophyte structure of *Funaria* and *Polytrichum* plants.
3. Differences between elaters of bryophytes and pteridophytes.

Best Wishes

Dr- Ghada Abd-Elmonsef

Assiut university Faculty of Science Botany & Microbiology department		
Bryophytes, Pteridophytes and Gymnosperm (Code: 312 B)		
For Under Graduate Students (3^{rd} level)	**Second Semester 2017-2018**	**Time allowed :2 hours**

Answer the Following Questions (50 Marks)

Question no(1): In which plants could you find these structures put your answer in table (12 marks)

1	Pseudoelaters	4	Comal tuft	7	Periostomial teeth	10	Leptome
2	Ligule	5	Strobilus	8	Megaspores	11	Elaterophore
3	Synangia	6	Pollen grains	9	Elaters with stripes	12	Sours

Question no(2): Put true √ or false × in front of each sentence and correct the wrong one (13 marks)

1. In pteridophyta life cycle, gametophyte plant is the dominant life form ( )
2. Archegonia developed with basipetal succession in *Marchantia* archegoniophore ( )
3. Young antheridia of *Anthoceros* are green then turn to orange in maturation ( )
4. Gametophytic plant is diploid while sporophytic plant is haploid ( )
5. Monoecious means; male and female reproductive structures bears in the same plant ( )
6. *Psilotum* thallus contains mucilage cavities filled with *Nostoc* colonies ( )
7. Protostele means pith is absent and the stele is situated in the center ( )
8. Genus *Selaginella* divided into sub-genera; *Homoeophyllum* and *Heterophyllum* ( )
9. *Adiantum* stem characterized by formation of nods and internodes ( )
10. *Equisetum* prothallus is leafy and heart-shaped ( )
11. *Pinus* is commonly known as club mosses due to their moss like appearance ( )
12. *Lycopodium* is a sporophytic plant reproduces sexually by forming heterospores ( )
13. Gametophyte of *Psilotum* propagates vegetatively by formation of gemma ( )

Look in the back

3. *Galactomyces geotrichum* belongs to:
   a. Pleosporaceae b. Microascaceae c. Dipodoascaceae d. Erysiphaceae

4. Stalked multicellular teleutospores are formed in:
   a. *Tilletia* b. *Uromyces* c. *Puccinia* d. *Phragmidium*

5. Which of the following species causes allergic bronchopulmonary disease:
   a. *Pseudoallescheria boydii* b. *Aspergillus flavus*
   c. *Claviceps purpurea* d. *Taphrina deformans*

6. Which of the following fungi belongs to earth balls
   a. *Astraeus* b. *Chetomium* c. *Geastrum* d. *Peziza*

7. Which of the following fungi is used in production of sake:
   a. *Emericella nidulans* b. *Aspergillus oryzae*
   c. *Penicillium citrinum* d. *Penicillium expansum*

8. One of the following fungi belongs to Endophytic Pyrenomycetes
   a. *Claviceps* b. *Acremonium* c. *Penicillium* d. *Sporothrix*

9. The anamorph of *Setosphaeria*
   a. *Cochliobolus* b. *Cladosporium* c. *Exserohilum* d. *Alternaria*

10. Which of the following families is characterized by dark colored conidia or hyphae or both:
    a. Eurotiaceae b. Moniliaceae c. Pleosporaceae d. Nectriaceae

11. Which of the following statements matching with *Ceratocystis fimbriata*:
    a. It has synanamorph b. It causes cacao wilt
    c. It belongs to Microascales d. All of the above

12. Gastromycetes is characterized by:
    a. Heterobasidia inside stomach-like basidiocarp covered with peridium
    b. Holobasidia inside stomach-like basidiocarp not covered with peridium
    c. Holobasidia inside stomach-like cleistothecium covered with peridium
    d. Holobasidia inside stomach-like basidiocarp covered with peridium

13. The anamorph of *Eurotium*
    a. *Aspergillus glaucus* b. *Eurotium glaucus*
    c. *Neosartorya fischerii* d. *Penicillium citrinum*

14. Which of the following species gives the characteristic flavor for cheese
    a. *Penicillium camemberti* b. *Aspergillus flavus*
    c. *Aspergillus flavipes* d. *Penicillium italicum*

15. Conidia of *Aspergillus* are:
    a. Amerospores b. Helicospores c. Dictyospores d. Phragmospores

16. The teleomorph of *Trichoderma*
    a. *Fusarium* b. *Hypocrea* c. *Nectria* d. *Talaromyces*

Best wishes

Prof. Mohamed A. Abdel-Sater

Dr. Nemmat A. Hussein

Assiut University **Faculty of Science** **Botany & Microbiology Dept**		**جامعة أسيوط** **كلية العلوم** **قسم النبات والميكروبيولوجى**
Mycology2 (362B)	**Final exam (23 May 2018)**	**Time: 2 h.**
Microbiology & Chemistry/Microbiology		**3rd level students**

I. Give an account (with labeled diagram if possible) on 5 only of the following: **(15 Marks)**

1. The bases of generic separation within powdery mildews fungi
2. Saccardoan system
3. The most important features used to differentiate between *Penicillium* species
4. Macrocyclic life cycle of a heteroecious rust fungus
5. Hypogean fungi
6. Criteria used in identification of *Fusarium* species

II. Give one difference (with drawing if possible) between 10 only of the following: **(5 Marks)**

1. Holobasidium & Phragmobasidium
2. Uniserriate & Biserriate conidial heads
3. Discomycetes & Plectomycetes
4. Acropetal & Basipetal succession
5. Furcatum & Aspergilloides
6. Hyphomycetes & Coelomycetes
7. Flowering & seedling infections
8. Annelide & Phialide
9. Microcyclic & Macrocyclic conidiation
10. *Cordyceps & Claviceps*
11. *Tolyposporium ehrenbergii & Urocystis cepulae.*

III. Illustrate 10 only of the following with only labeled diagram: **(5 Marks)**

1. Clamp connection
2. Staurospore
3. Subgenus Biverticillium
4. Types of basidiocarps
5. Acervulus
6. Sexual stage of *Emericella*
7. *Cryptococcus neoformans*
8. Perithecium
9. *Botryodiplodia*
10. Teleutospore germination in smut fungi
11. Ascus formation in primitive Ascomycota

IV. Define and give example for 10 only of the following: **(10 Marks)**

1. Honey dews stage
2. Gymnothecium
3. Aflatoxicoses
4. Candidiasis
5. Aspergillosis
6. Synanamorph
7. Dimorphism
8. Conidioma
9. Entomopathogenic fungus
10. Water drop mechanism
11. Symbiotic fermentation

V. Choose the correct answer for 15 only of the following: **(15 Marks)**

1. Which of the following fungi is named red bread mold:
   a. *Neurospora crassa* b. *Eurotium rubrum*
   c. *Penicillium purpurogenum* d. *Penicillium marneffei*

2. Primary, secondary and tertiary types of mycelia are formed in:
   a. *Ustilago* b. *Agaricus* c. *Puccinia* d. All of the above

" انظر خلفه "

2. Complete and give a simple diagram to B, D and E .....(16 marks)

Disease	(A) Pathogen	(B) Dormant structure	(C) Occurrence of the dormant stages	(D) Primary inoculum	(E) Secondary inoculum
Apple scab	... (1) ...	... (2) ...	... (3) ...	... (4) ...	... (5) ...
Nectria canker	... (6) ...	... (7) ...	... (8) ...	... (9) ...	... (10) ...
Black rust of wheat	... (11) ...	... (12) ...	... (13) ...	... (14) ...	... (15)...
Ergot disease of cereals	... (16) ...	... (17) ...	... (18) ...	... (19) ...	... (20)...

3. Compare with drawings (only three) .....(9 marks)

a) Germination of spores in Families Ustilaginaceae and Tilletiaceae

b) *Leveillula* and *Uncinula* according to their teleomorph and anamorph.

c) Polycyclic and monocyclic plant diseases

d) Symptoms and nature of the pathogen in both black wart and late blight diseases of potato.

4. Illustrate with drawings <u>only three</u> of the following.....(15 marks)

a) The diagnostic symptoms and fungal structures associated with Dutch elm disease.

b) Symptoms and pathogens of wilt disease including the mechanisms of infection and survival

c) Disease cycle and control of the pathogen causing club root of Cruciferae.

d) Fungal genera causing downy mildew disease and their susceptible host.

..... **Good Luck** .....

Dr. Ismail R. Abdel-Rahim

Assiut University
Faculty of Science
Botany and Microbiology Department

Course Title: Plant pathogenic fungi
Course Code: 364 B
Final Exam: Third Level
Second Semester May 2018
Allowable Time: 2 hours
Total Degree: 50 Marks

Answer the following questions

1. Choose the correct answer ..... (10 marks)

1. Soft rot disease of bean is caused by .....

(a) *Aphanomyces euteiches* (b) *Uromyces fabae* (c) *Sclerotinia sclerotiorum*

2. .....is the genus of rust fungi that produce aecial stage lacking peridium

(a) *Peridermium* (b) *Caeoma* (c) *Aecidium*

3. ..... is the process by which the pathogens establish contact and nutritional relationship with the susceptible host tissues.

(a) Invasion (b) Infection (c) Penetration

4. The causative agent of onion smut is .....

(a) *Urocystis cepulae* (b) *Cercospora beticola* (c) *Verticillium daliae*

5. ..... is a qualitative measurement of the ability of the pathogen to cause the disease.

(a) Pathogenicity (b) Disorder (c) Virulence

6. .....are the fungal pathogens that may infect, kill the host tissues and feed on the contents of dead cells.

(a) Biotrophs (b)Necrotrophs (c) Hemibiotrophs

7. *Botrytis cinerea* is the pathogen of ..... disease in many fruits and vegetables.

(a) gray mold (b)blue mold (c) black mold

8. .....diseases are constantly prevalent in a particular country or part of the earth.

(a) Epidemic (b)Endimic (c) Sporadic

9. In ..... disease, the pathogen produces mycelia that invade the area between the cuticle and the epidermis.

(a) white rust (b) black wart (c) apple scab

10. .....causes killing and collapse of seed tissue before emergence of seedling above soil.

(a) *Pythium oligandrum* (b) *Telletia caris* (c) *Phytophthora infestans*

.....look at the next page.....

Question no (2): Fill in the blanks with suitable words

(10 marks)

1. Endophytic algae are those algae live in .....
2. Aerial epiphytic algae found in .....
3. Productivity means.....
4. Aerial epilithic algae are .....
5. ..... , ... , ... among the factors affecting productivity of algae
6. Diatomite constitutes the cell wall material of.....and used in .....
7. In algal fungal symbiosis, the algae called .....while fungi termed as.....

Question no (3): Write short notes on <u>three only</u> from the following

(30 marks)

1. Economic importance of Algae
2. Discus how does algae interact with other microorganism in their habitats
3. Effect of macronutrient on the amount of organic carbon produced by algae in the aquatic ecosystem
4. Classified the algae according to their habitats

Good luck

Dr. Awatief F. hifney

Faculty of Science
Assiut university

Botany and Microbiology Department
Final exam. (2017-2018), Ecology of algae (374 B)
Time allowed: 2 hours

Answer the following questions

Question no (1): Write (Yes) or (No) in the front of each sentence from the following and correct the wrong one.

(10 marks)

1	Lithophytic algae are growing , dispersed in water and unattached to solid objects	( )
2	The algae concentrate on lake surface when only enough light are available	( )
3	Dinoflagellates enter the host cell through phagocytosis	( )
4	A reef coral is a symbiotic association between bacteria and mycobiont	( )
5	*Paramecium bursaria* cells harbor several hundred symbiotic *Chlorella* spp. in their cytoplasm	( )
6	*Anabaena* can be employed in the reclamation of alkaline user land	( )
7	Chlorellin is known to inhibit several species of bacteria and effective against other algae	( )
8	Both temperature and carbonate content increase when vigorous photosynthesis occurs in productive waters	( )
9	light transmitted directly to the aquatic environment influences the distribution of both organisms and heat in lake.	( )
10	The growth of algae, especially diatoms , spoil plaster, brick work and ships	( )
11	*Some sp of blue greens produce exotoxins and endotoxins can bring death of farm animals*	( )

V- Choose the correct answer. Put your answers in the TABLE: (10 marks)

1. ***Tuberculin test*** is an example of type.....hypersensitivity:
   a) I.
   b) II.
   c) III.
   d) IV.
2. Substance that has a non-specific antiviral activity.....:
   a) IL2.
   b) IL10.
   c) Oncofetal antigen.
   d) IFN.
3. Hybridoma cells are used for production of .....
   a) Complement.
   b) PEG
   c) Malignant plasma cells
   d) Monoclonal antibodies.
4. The role of IgA *is:* .....
   a) Detoxification of digoxin.
   b) Bioconversion of B cells to plasma cells.
   c) Act as antigen receptor on the surface of APC.
   d) Provide immunity on mucous surfaces.

5. Which of the following belong to innate immune system.....
   a) Negative selection
   b) T cytotoxic cells.
   c) Phagocytosis.
   d) B cells.
6. The cells that secrete IL-10 and TGF-B to suppress the auto-reactive cells are called.....
   a) TH17
   b) TH1
   c) Treg
   d) NK suppressor cells
7. The following is an example of type III hypersensitivity.....
   a) Anaphylactic shock
   b) Incompatible blood transfusion
   c) Arthus reaction
   d) None of the above.
8. C3 convertase consist of:
   a) C4aC3a
   b) C56789
   c) C4b2b
   d) None of the above.
9. Tc are activated by IL2 which is secreted by:
   a) Th2.
   b) NK cells.
   c) Th1.
   d) Macrophages.
10. ..... Is not an APC.
    a) B cells.
    b) Macrophage
    c) NK cells.
    d) DC.

1	2	3	4	5	6	7	8	9	10

IV- Answer the following questions:

1. Explain the mechanism and types of type I hypersensitivity reaction (3 marks)

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2. Mention 3 different uses of Monoclonal antibodies (3 marks)

a) .....

b) .....

c) .....

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3. Write down the different types of graft and the difference between each of these types. (2 marks)

a) .....

b) .....

c) .....

d) .....

4. Write down 3 different mechanisms by which Tc can kill the target cells (2 marks)

a) .....

b) .....

c) .....

III- Compare between each of the following: (2 marks each)

1.

	NK cells	Tc

2.

	Antigen	Super Antigen

3.

	B cells	T cells

4.

	Primary IR	Secondary IR

IV- Answer the following questions:

1. Explain the mechanism and types of type I hypersensitivity reaction (3 marks)

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2. Mention 3 different uses of Monoclonal antibodies (3 marks)

a) .....

b) .....

c) .....

.....

3. Write down the different types of graft and the difference between each of these types. (2 marks)

a) .....

b) .....

c) .....

d) .....

4. Write down 3 different mechanisms by which Tc can kill the target cells (2 marks)

a) .....

b) .....

c) .....

II-Define (2 marks each):

1-Hapten

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2-Adjuvant

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3-Magic bullet therapy

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4-Negative selection

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5-Epitope:

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Assiut University
Faculty of Medicine
Department of Microbiology and Immunology

Date: 10-5-2018
Total marks: 50 (5 pages)
Time: 2 hours

Immunity Exam for Science Students

I- Write 3 different functions for each of the following immune components:
(3 marks each)

1- Fc part of Immunoglobulin

1.....

2.....

3.....

2- CD4+ T cells

1.....

2.....

3.....

3- Complement system:

1.....

2.....

3.....

4- Macrophages

1.....

2.....

3.....

٢- فى جدول وضح عدد الاشكال المظهرية و الطرز الوراثية لصفه يحكمها ٣ اليلات مختلفة فى الحالات التالية: حالة سيادة تامة ، حالة سيادة مشتركة ، و حاله خليطة من السيادة التامة و المشتركة (كما فى مجاميع الدم)؟ (ثلاث درجات)

السؤال الثالث(١٥ درجة موزعه بالتساوى علي نقاط السؤال) . أجب فقط على ثلاث نقاط

١- قد تكون العشائر مختلفة في تكرارات الطرز الوراثية ولكن لها نفس التكرار الأليلي. فسر ذلك

٢- ما فرق بين معامل التربيه الداخلية F و معامل التربية العشائرى f ؟ و ما هو الاثر الضار للتربية الداخلية؟

٣- ما الفرق فى وصول العشيرة الى الاتزان فى حالة موقع جسمى واحد و موقعين جسمين مستقلين و موقع مرتبط بالجنس؟

٤- عرف التدفق الجينى؟ و كيف يحدث؟ و ما هى الاثار الوراثية المرتبطة به؟

٥- اذكر فقط الشروط الواجب توافرها لاتزان العشيرة؟

انتهت الاسئله....مع اطيب الامنيات بالتوفيق

	امتحـــان الفصل الدراســـــي الثانى للعـــــام الجامعـــي 2017-2018	

القسم الذي يقدم المقرر: الوراثة — كلية العلوم — الفرقة: المستوى الرابع

اسم المادة: (٢.ع ز) وراثة العشائر — الزمن: ساعتان

لجنة الممتحنين: أ.د/ جمال ابراهيم أحمد — د/ أحمد عاطف سلام

السؤال الاول: (٢٥ درجة موزعه بالتساوي على نقاط السؤال)

العشيرة	AA	Aa	aa	N
1	50	20	30	100
2	20	20	5	45
3	562	375	63	1000

١- اختبر مدى اتزان العشائر التالية وإذا لم تكن متزنة احسب تكرارات الاتزان

٢- اذا هاجرت ٤٠% من الافراد من **العشيرة الاولى** الى **العشيرة الثالثة**. ما عو تكرار الاليل المتنحى بعد هجرة و احسب التغير فى تكرار الاليل السائد بعد الهجرة

٣- **فى العشيرة الثالثة**: اذا كان الانتخاب ضد الافراد المنتحية بمعامل انتخاب 0.9 . ما هو تكرار الاليل المتنحى بعد **جيل واحد** من الانتخاب و احسب التغير فى الطرز الوراثية الاصيلة؟

٤- اذا كان معدل طفور الاليل A الى الاليل a يساوى 0.5×10^{-6}و معدل الطفور العكسى 0.25×10^{-7} فى **العشيرة الثانية**. احسب معدل التغير فى تكرار الاليل السائد بعد الطفرة؟.

٥- اى من تللك العشائر تعتبر مرباه داخليا؟

السؤال الثانى (١٠درجة درجات)

١- لسلسة الأليلات المتعددة للون فراء الأرانب كان إتجاه السيادة :

$C \rightarrow h \rightarrow a$

ألبينو هيمالايا ملون

في عشيرة عشوائية التزاوج ، كانت الأعداد المشاهدة على النحو التالي :

Colored	Himalayan	albino
300	180	100

احسب **الأعداد المتوقعة** من كل فئة من الفئات المظهرية . (٧ درجات)؟

أنظر خلفة

Part II

Answer all the following questions:

The first question: Write short notes about **four only** of the following: **(12 marks)**

1. *Salmonella* in foodborne infection
2. Control of microorganism in food by cleaning and saintation removal
3. The principles of Hazard Analysis Critical Control Points
4. Important Factors in Microbial Food Spoilage
5. General characteristics of food poisoning

The second question: **Compare between two only of the following:** **(5 marks)**

1. Vacuum packaging and gas flushing
2. Neurotoxin and enterotoxins
3. D, Z and F-values

The third question: **put (√) or (x) sign in front of each of the following, and then correct the wrong one:** **(8 marks)**

1. Fermentation by some microorganisms can lead to food preservation instead of food spoilage. ( )
2. Bacteria are more sensitive than most fungi to spices. ( )
3. Microorganisms can be eliminated from, or reduced by, ethylene oxide sterilization. ( )
4. Ultraviolet radiation is used to control populations of microorganisms on the surfaces of laboratory and food-handling equipment, but it does not penetrate food. ( )
5. All food-borne diseases are associated with poor clean practices. ( )
6. Those most susceptible to E. coli O157:H7 are the young. ( )
7. Baked potatoes served in aluminum foil can provide a unique environment for disease-causing microorganisms. ( )
8. Many microorganisms in fermented dairy products stabilize the bowel microflora, and some appear to have antimicrobial properties. ( )

Good luck

Dr./ Amal Danial

Faculty of Science Botany& Microbiology Department		كلية العلوم قسم النبات والميكروبيولوجي
Food Microbiology (498 B) Time: Two hours Total degree: 50 marks	Second semester exam - the academic year 2017/2018 Fourth Level Exam date: Tuesday, 22/05/2018	

Part I

(A) Write on only four of the following questions. (20 Marks)

1- The effect of hydrogen ion concentration on microbial growth in food

2- The importance of Viruses in food industry

3- The Benefit uses of yeast in food industry

4- Predominant microorganisms in soil and how to control them

5- Normal Microbiological quality of raw and pasteurized milk

(B) Answer with (X) or (√) only five: (5 marks)

1- H_2O_2 treated potable water should be used in processing, washing, sanitation, and as an ingredient. ( )

2- Spores of *Bacillus, Clostridium, Micrococcus, Sarcina,* molds and yeasts, can be predominantly present in animals. ( )

3- Fin-fish and crustaceans can have 1–10 million bacterial cells/g. ( )

4- Fecal Coliforms include species from *Escherichia, Enterobacter, Citrobacter* and *Klebsiella*. They are used as an index of sanitation ( )

5- *Pichia* species cause spoilage of food with high acid, salt and sugar Cause rancidity in butter and dairy products. ( )

6- Dextran is an EPS produced by *Leuconostoc mesenteroides* while growing in sucrose, is used as a stabilizer in ice cream and confectioneries. ( )

DR/ MAYSA M. A. ALI

باقى الأسئلة بالخلف

Part II: Bacterial Symbiosis

A. Answer the following questions. Use well labeled diagrams where appropriate. **(12 Marks)**

1. Explain the infection process of *Agrobacterium* and discuss the function of Ti plasmid.
2. Illustrate the relationship between *Azolla-Anabaena azollae* and mention uses of *Azolla.*
3. Discuss how *Riftia pachyptila* fed depending on their endosymbionts bacteria.

B. Write short notes on: (answer two only) **(6 Marks)**

1. The signals from the host plants to bacteria during rhizobia-legume interaction.
2. Nitrogenase enzyme (function and structure).
3. Synthetic nitrogen fertilizer.

C. Put a mark (√) in front of the correct statement and a mark (X) in front of the wrong statement with error correction: (answer seven only) **(7 Marks)**

1. Commensalism is a relationship between one species benefits and the other is harmed in the process. ( )
2. The relationship between human and normal intestinal bacteria is a parasitism. ( )
3. *Frankia* synthesizes Nod factors in order to activate a plant to allow development of an infection thread in legume plant. ( )
4. leghemoglobin is synthesized only by rhizobia to facilitate an anaerobic environment for nitrogen fixation process. ( )
5. *Rhizobium* spp. whose nodulation functions (*nif, fix*) are encoded on their chromosome. ( )
6. *Vibrio fischeri* is colonizing bacteria can produce light at the high or low population density. ( )
7. *Buchnera aphidicola* is the primary symbiont of the pea aphid. ( )
8. Secondary symbionts can be transmitted horizontally to new hosts. ( )

With best wishes

Dr. Shymaa Ryhan

Final- Term Exam
201٨

Botany & Microbiology Department | **Plant Tissue Culture (454 B)** Credit Hours | **Time: 2 Hours**

Q1) **Choose ten (10) correct answers**: ***(10Marks)***

1-The fastest way to a ripe tomato using tissue culture is by

a) Anther / pollen culture b) Plant organ culture
c) Protoplast culture d) Callus culture

2 - If you want to use a plant tissue culture as a chemical factory for vitamins, choose

a) Suspension cultures b) Callus cultures
c) Organ cultures d) Protoplast cultures

3- Haploid plants can be obtained from

a) Bud culture b) Leaf culture
b) Root culture d) Anther culture

4- In plant tissue culture, which of the following shows totipotency?

a) Meristem b) Sieve tube
c) Xylem vessel d) Collenchyma

5- Variation in *in-vitro* culture is called as

a) *In vitro* variation b) Mutation
c) Somaclonal variation d) All of these

6- Which of the following is best suited method for production of virus free plants

a) Embryo culture b) Meristem culture
c) Ovule culture d) Anther culture

7- A major application of embryo culture is in

a) Clonal propagation b) Production of embryoids
b) Overcoming hybrisation barriers d) Induction of somaclonal variations

8- Hormone pair required for a callus to differentiate are

a) Auxin and cytokinins b) Auxin and ethylene
c) Auxin and abscissic acid d) Cytokinins and gibberellins

9- The problem of necrosis and gradual senescence while performing tissue culture can be overcome by

a) Spraying auxins b) Spraying cytokinins
c) Suspension culture d) Subculture

10-Who is the father of tissue culture?

a) Bonner b) Haberlandt c) Laibach d) Gautheret

10- The common scab in beet caused by .....whereas actinomycosis caused by .....

11. Actinomycetes assemble fungi in ..... and bacteria in .....

12-Actinomycetes ..... and ..... causing human diseases.

13- *Frankia* live ..... or symbiotic with ..... plants.

Q2: **Identify <u>Six</u> only of the following:** (6 Marks)

A- Diazotrophs B- Biostimulant C-Siderophores D-Antibiotics

E-Quorum sensing F- N_2-fixation G-Hydrolytic enzymes

Q3: Write with drawing <u>TWO</u> only of the following: (8 Marks)

1- *Streptomyces* life cycle

2- Morphological structure of *Frankia*

3- Mechanism of action of Streptomycin

Q4: Write on <u>Four</u> only of the following: (16 Marks)

A- Classification of antibiotics according to their mode of action.

B- The increasing resistance of pathogenic organisms against antibiotics.

C- Functions of siderophores.

D- Characterization of PGP actinomycetes.

E- Role of actinomycetes in the environment.

Best wishes Dr. Naeima Yousef

Assiut University
Faculty of Science
Department of Botany & Microbiology
جامعة أسيوط
كلية العلوم
قسم النبات والميكروبيولوجى

Microbiology Students, Level 4 — Final Exam 2018

Actinomycetes (4ثB) — Time allowed: 2 hours

Answer the following questions: (50 Marks)

Q1. Complete 11 only of the following sentences: (20 Marks)

1- Actinomycetes secrete organic acids or ..... to solubilize Phosphate.

2- Actinomycetes classified into ..... classes and ..... orders.

3-The morphology of actinomycetes have two types of radial mycelia, ... and .....

4- The ..... have been implicated for both direct and indirect enhancement of plant growth.

5-Some actinomycetes can form complicated structures, such as spore, ... and ....

6-IAA produced in the dependent of .....

7- Actinomycetes is a phylum of Gram ..... bacteria with ..... G+C content.

8-Reproductive hyphae are called ..... mycelia.

9- Tetracycline is ..... spectrum antibiotic produced by .....and .....whereas neomycin produced by .....

باقى الأسئلة بالخلف

Faculty of Science Botany and Microbiology Department		كليه العلوم قسم النبات والميكروبيولوجي
Microbial Ecology (B494) Time: 2 hours 50 Marks		امتحان الفصل الدراسي الثاني العام الجامعي 2018/2017

Part I

A. Answer the following questions. (10 marks)

1. Nitrogen cycle.
2. Direct mechanisms of plant growth promoting rhizobacteria

B. Differentiate between: (Answer two only) (6 marks)

1. Producers, consumers and decomposers.
2. Microbiota and macrobiota (identification, examples and function).
3. Types of remediation (according to the site).

C. Put a mark (√) in front of the correct statement and a mark (X) in front of the wrong statement with error correction: (answer nine only) (9 marks)

1. CO_2 concentration and organic nutrient content decrease with the depth soil increase ( )
2. In worm areas, the release of nutrients into the soil is very quickly and fast than cooler areas ( )
3. Light is essential for all microorganisms present in soil ( )
4. Cation exchange capacity will increase as pH increases ( )
5. Atmospheric CO_2 is fixed into organic compounds by only plants. ( )
6. In assimilatory sulphate reduction, plants convert sulfur containing amino acid into sulfate. ( )
7. In natural soil, phosphorus in soil is available to plants in iron and calcium phosphates ( )
8. Xenobiotics are naturally-occurring compounds in the environment that are present in unnaturally high concentrations ( )
9. Air is a medium in which organism can grow ( )
10. Sulphate-reducing bacteria convert the sulfate to methane ( )

انظر خلفه

Faculty of Science Botany and Microbiology Department		كليه العلوم قسم النبات والميكروبيولوجي
Microbial Ecology (B494) Time: 2 hours 50 Marks		امتحان الفصل الدراسي الثاني العام الجامعي 2018/2017

Part I

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2. Direct mechanisms of plant growth promoting rhizobacteria

B. Differentiate between: (Answer <u>two</u> only) (6 marks)

1. Producers, consumers and decomposers.
2. Microbiota and macrobiota (identification, examples and function).
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1. CO_2 concentration and organic nutrient content decrease with the depth soil increase ( )
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انظر خلفه