Assuit University
Faculty of Science
Botany & Microbiology
Department

Industrial Chemistry Students
Final exam 25-05-2019
Subject : Fermentation Industries
(314 B)

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

a. Linear and branched pathways in anaerobic fermentation.

b. Classification of antibiotics according to their biosynthesis.

c. The fermentation conditions.

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

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

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

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

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

B. Citric acid , gluconic acid and ethyl alcohol. Mention the applied microorganisms and uses of each product.

Best wishes

Prof. Dr. Ahmed Lotfy El-Sayed

Faculty of Science
Assiut university

Botany and Microbiology Department
Final term exam. (2018-2019), Ecology of algae (374 B)
Time allowed: 2hours

Question no (1): Write (Yes) or (No) in the front of each sentence from the following and correct the wrong one. (15 marks)

1	Extracts of certain algae kill strains of *Mycobacterium* and exhibit antiviral activity.	( )
2	Terrestrial algae are found upon or inside the surface of the earth	( )
3	*Iodine extracted from the red alga Chondrus crispus*	( )
4	Symbiotic algae are primary producers of organic matter in aquatic habitats.	( )
5	Diatoms need a low range of PFD for growth and photosynthetic process	( )
6	Edaphophytes improve the aeration of swamp soils and fix atmospheric nitrogen.	( )
7	Agar- Agar is highly porous therefore is ideally suited as a filter for oils and for clearing solvents	( )
8	Dinoflagellates in fresh water provide the primary food for fish and other aquatic animals	( )
9	Manure produced from algae helps in soil binding, promoting good crumb formation	( )
10	*Trentepohliaceae*, penetrates into the stomata of tropical plants as a semi parasitic algae	( )
11	Algae live in parasitic association with embryos inside salamander egg capsules.	( )
12	In the relationship between sea anemones and algae , the algae benefit by gaining food .	( )
13	Sapophytes are those algae grown on other plants and bigger algal members	( )
14	The growth of algae, especially blue green algae, spoil plaster, brick work and ships.	( )
15	Estuaries among the most productive natural habitats in the world.	( )

Question no (2): Fill in the blanks with suitable words (15 marks)

1. Aerial epiphytic algae are those algae live on.....
2. Net primary production of algae can be measured by monitor ....., ...

   ..... , ...
3. Both of .....and .....increase when vigorous photosynthesis occurs in productive waters
4. The photic zone or euphotic zone means.....
5. *Cephaleurous* infections on tea and coffee plants called .....Disease
6. Alginates are found in the cell wall of the .....while ..... Extracted from red alga *Chondrus crispus*

Question no (3) Discuss in detail <u>Three only</u> from the following point (20 marks)

1. **Agricultural and medicinal uses of algae**
2. **Factor affecting the dissolved oxygen in the aquatic environment**
3. **Effect of macro elements on productivity of algae**
4. **Invertebrate symbiotic relationship with algae**

Good luck

Prof. Awatief F. Hifney

Assiut University

Faculty of Science

Botany& Microbiology Department

Second Semester May, 2019

The time allowed: 2 hours

Total marks: 50 Marks

Course Code: 364 B

Answer the following questions

I. Give a short account on *only 5* of the following (15 marks)

1. Symptoms of peach leaf curl disease.
2. Control of postharvest decays of fresh fruits and vegetables.
3. Types of conidiophores of powdery mildew fungi.
4. Symptoms of Dutch elm disease.
5. Disease management of powdery scab.
6. Symptoms of damping off & seedling blight.

II. Give the causal agent for *only 10* of the following (10 marks)

1. Soft rot of fruits and vegetables.
2. Downy mildew of grape and lettuce.
3. White rust of Crucifers.
4. Late blight of potato
5. Sugarcane smut.
6. Powdery scab.
7. Rust on garlic.
8. Loose smut of wheat.
9. Ergot disease.
10. Powdery mildew of strawberry.
11. Club root of Crucifers.
12. Black warts of potatoes.

III. Write on the disease cycle for *4 only* of the following (12 marks)

1. Powdery mildew fungi.
2. *Plasmodiophora brassicae.*
3. *Pythium.*
4. *Claviceps purpurea.*
5. *Phytophthora infestans.*

.....انظر خلف الصفحة بقية الأسئلة.....

IV. Put (√) or (x) and correct the false sentences: (8 marks)

1. Infection by *Ustilago nuda* occurs through barley ovary wall and move towards the embryo.
2. The teliospores of *Cronartium ribicola* are stalked.
3. Basidiomycetes are characterized by a septate mycelium.
4. Ergot bodies found beside the grain in the heads of cereals and grasses just prior to harvest.
5. Dutch elm disease results in the blockage of the water-conducting tissue within the tree.
6. Powdery mildews are most severe in cold weather.
7. The germ tube of *Venturia inaequalis* can directly penetrate the plant's waxy cuticle.
8. The swollen parts in plants infected by *Albugo candida* are full of oospores.

V. Differentiate between: (Answer 2 only) (5 marks)

1. Symptoms in potato tubers infected by *Spongospora subterranean* either by *Synchytrium endobioticum.*

2. Sexual and asexual stages of *Albugo portulacae.*

3. Uredinomycetes and Ustilagomycetes.

With My Best Wishes
Dr. Nivien Allam

Department of Botany and Microbiology Faculty of Science Assiut University		Microbiology (Third level) - 2018/2019 Final Examination of Microbial Enzymes (394 B) Second Semester – 2 hours

Answer the following questions (50 marks)

1-Explain **2 only** of the following: (12 marks)

a-Classification of cofactors.

b-Application of hydrolases enzymes in manufactured materials.

c-Microorganisms producing applied enzymes.

2-Compare in **Table** between **2 only** of the following with drawing: (12 marks)

a- Lock & Key hypothesis and induced fit hypothesis.

b-AMP and ATP regulation of phosphofructo-kinase in cell pathway.

c-Non-competitive and un-competitive Inhibitors.

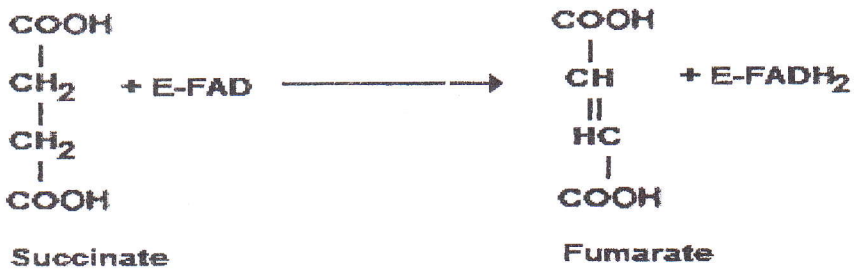
3-Give **2 examples** for reactions of each of the following: (12 marks)

a- Lyases enzymes.

b- Ligases enzymes.

4-Complete **the first EC digits** and illustrate them with writing the enzyme name of the following: (14 marks)

a- EC --- ?.3.5.1



Succinate Fumarate

b- EC --- ?.3.1.1

Dihydroxyacetone phosphate — Glyceraldehyde 3-phosphate

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

Assiut University
Faculty of Science
Botany Department
Jun. 2019

Course code: 434B
Course: Flora of Egypt
2nd Semester – Final Exam
Time: 2 Hours
Marks: 50

No. of questions: 4 | No. of Pages: 3

Answer the questions 1, 2, 3 & 4

Question No. 1 هذا السؤال اجباري **(12.5 marks)** **(0.5 mark each)**

Choose the correct answer, put your answer in a table: -

1. **He founded the Royal Geographical Society in Cairo; he was the first chairman.**
   (a) Forsskal (b) Delile (c) Boisser (d) Schweinfurth
2. **Plants are called special names according to international principles set out in a folder**
   (a) NPCI (b) ICBN (c) ICNCP (d) none of the preceding
3. **The duplicate specimens of the holotype is called as .....**
   (a) lectotypes (b) isotypes (c) holotypes (d) neotypes
4. **Among the largest botanical gardens in the world is ..... garden**
   (a) Kew (b) Cairo (c) American (d) all the preceding
5. **Which of the following library knowledges is the biggest? -**
   (a) monograph b) revision (c) abstract (d) report
6. **Hansen (1920) divided the phytogeographical regions of the world according to .....**
   (a) latitude (b) altitude (c) elevation (d) all the preceding
7. **In his division to globe, Good included all northern temperate areas in ..... kingdom**
   (a) boreal (b) antarctic (c) palaeotropic (d) new tropical
8. **The desert present North of wadi Tumilat is known as: -**
   (a) libyan (b) isthmic (c) N. arabic (d) S. arabic
9. **The great canal branched from Assiut barrage (Khazan Assiut) is .....**
   (a) Ibrahimia (b) Mahmoudia (c) Foadia (d) all the preceding
10. **Among the palm street trees planted in Assiut is .....**
    (a) *Erythrina indica* (b) *Thuja orientalis* (c) *Shinus molle* (d) *Oreodoxa regia*
11. **The street trees of *Casuarina equisetifolia* is characterized by ..... leaves**
    (a) pinnate (b) palmate (c) scaly (d) long green
12. **The Scientific name of the *Citrus* trees named Bortogallo is .....**
    (a) *C. aurantium* (b) *C. myrtifolia* (c) *C. paradisi* (d) *C. amara*
13. **The single trunk palm with ovoid, 3-angled, thick fibrous brownish fruits is .....**
    (a) *Phonix dactylifera* (b) *Hyphaene thebaica* (c) *Cocos nucifera* (d) *Annona squamosa*
14. **Punicaceae fruit tree, with leathery skinned pink to rich red fruits**
    (a) *Mangifera indica* (b) *Carica paoaya* (c) *Punica granatum* (d) *Opuntia ficus-indica*
15. **Cultivated as a vegetable that eaten its inflorescence fresh or after cooking: -**
    (a) *Hibiscus esculentus* (b) *Cynara cardunculus* (c) *Corchorus olitorius* (d) *Solanum melongena*
16. **Employed for scenting bathwater as a memory of Ajub who got cured from a skin-disease**
    (a) *Ambrosia maritima* (b) *Plucea dioscoridis* (c) *Matricaria chamomilla* (d) *Centaurea calcitrapa*
17. **Known as black mustard weed and characterized by cruciferous yellow petals**
    (a) *Medicago hispida* (b) *Brassica nigra* (c) *Melilotus indica* (d) *Avena fatua*
18. **A Scrophulariaceae weed parasites on root system of sugar-cane.**
    (a) *Malva parviflora* (b) *Orobanche minor* (c) *Striga hermonthica* (d) *Hibiscus trionum*
19. **A cruciferous weed with long narrow cylindrical silique which stays green when ripe.**
    (a) *Solanum nigrum* (b) *Orobanche minor* (c) *Solanum nigrum* (d) *Sisymbrium irio*
20. **The deserts of Turkistan, Tibet and Mongolia is of the ..... deserts**
    (a) Worm (b) Cold (c) Polar (d) Europ
21. **Wadi ..... is the only watercourse running from north to south in arabic desert**
    (a) Qena (b) Tomilat (c) Arish (d) Hodien
22. **The most important spring present in Isthmic desert is ....., 90 km south of Arish**
    (a) Bir Abrag (b) Bir Qatter (c) Ain El-Gedirat (d) lake Bardawil
23. **Among desert plants and belonging to family Compositae is .....**
    (a) *Zilla spinosa* (b) *Echinops spinosus* (c) *Bassia muricata* (d) *Citrullus colocynthis*
24. **The bulbous plant with strap-shaped leaves growing in Mma. moving sand is .....**
    (a) *Hyoseris lucida* (b) *Ammophila arenaria* (c) *Pancratium maritimum* (d) *Orlaya maritime*
25. ***Mesembryanthemum crystalinum* is growing in barley fields and is belonging to .....**
    (a) Cistaceae (b) Aizoaceae (c) Cruciferae (d) Compositae

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ونؤكد: - لضمان تصحيح اجابتك دون أخطاء .... يجب وضع الاجابة في جدول

Question No. 2 هذا السؤال اجباري (12.5 marks) (0.5 mark each)

Put (√) beside the correct answer and put (X) beside the wrong answer:-

1	Delile printed a beautifully illustrated volume: "Florae Aegyptiacae allustratio".	
2	G. Tackholm wrote 7 books and published 2 volumes of "Flora of Egypt"	
3	If a species has more than one name, only one is valid and the others are types	
4	The correct name to Banger (البنجر) is *Brassica rapa* L.	
5	If the plant name becomes not suitable or disagreeable, epithet must regected	
6	Monograph is an exhaustive study of a taxonomic group (all data are integrated)	
7	Hansen divided the world into 4 phytogeographical regions according to latitude	
8	The systems of Good & Firbas divided the globe into six botanical kingdoms	
9	The arabic name (powder of afreet) of *Sterculia diversifolia* is due to bell-shaped flowers	
10	*Orobanche minor* is a cruciferous weed with long narrow cylindrical silique	
11	*Cycas revoluta* is one of the most primitive living seed palms (Sago palm)	
12	*Citrus* trees are evergreen with dot glanded Leaves and a berry, 8-15 celled	
13	The edible fruits of *Eriobotrya japonica* is shiny red coloured	
14	*Morus nigra* is characterized by aggregate fruits	
15	*Hordeum vulgare* cultivated in Egypt scince prehistoric times and Pharaons	
16	Libb abiad (اللب الأبيض) is obtained from *Cucurbita pepo* var. *typica*	
17	*Corchorus olitorius* cultivated as a vegetable that eaten its leaves after cooking	
18	*Lawsonia inermis* & *Ricinus communis* cultivated as a source of dyes	
19	*Chenopodium album* is a poisonous leguminous weed with pink flowers	
20	*Typha australis* is a semi-aquatic weeds with dense female sausage-shaped spike	
21	The most important spring present in Isthmic desert is Bir Qatter, 90 km south of Arish	
22	Gebel Helal and Gebel Yellek present in arabic desert	
23	Among desert plants is *Launaea nudicaulis* which belonging to family Boraginaceae	
24	*Citrullus colocynthis* is a desert plant belonging to family Cucurbitaceae	
25	*Ammophila arenaria* is an excellent sand-binder growing in moving sand of Mma.	

Question No. 3 هذا السؤال اجباري (5 marks)

Enumerate 1 botanical name & its importance belonging to the following families:

Anacardiaceae, Brassicaceae, Caesalpiniaceae, Liniaceae, Anacardiaceae & Scrophulariaceae.

Family	Botanical names	Importance
Anacardiaceae		
Brassicaceae		
Caesalpiniaceae		
Liniaceae		
Anacardiaceae		
Scrophulariaceae		

Question No. 4 (20 marks) (4 marks each)

Write short notes on <u>4 (four)</u> only of the following: - (أجب عن 4 أسئلة فقط)

a. Herbarium and its important jobs.
b. Sources and methods of plant identification
c. phytogeographical regions of Egypt and its divisions
d. Mariut region and enumerate 5 plants growing in different habitats
e. Oasis and enumerate 5 plants belonging to different families growing in it

Best Wishes
Prof. Momen Zaren

Assiut University Faculty of Science Botany & Microbiology Dept.		جامعة أسيوط كلية العلوم قسم النبات والميكروبيولوجى
Mycology (2) (362B)	**Final exam (15th June 2019)**	**Time: 2 hours**
Microbiology & Chemistry/Microbiology Students		**3rd level students**

Answer the following questions (with labeled diagram if possible)

I. Give a short account on 5 only of the following: **(15 Marks)**

1. Classification of Pezizomycotina.
2. Economic importance of yeasts.
3. Different spores in life cycle of *Puccinia graminis* formed on wheat plant.
4. How can genera of powdery mildews be differentiated?
5. Conidia are produced within different structures? Discuss this statement with examples.
6. Flowering and seedling infections.
7. Medicinal importance of ergot.

II. Give one difference between 10 only of the following: **(10 Marks)**

1. Stilbellaceae & Tuberculariaceae.
2. *Trichoderma* & *Hypocrea*.
3. Teleomorph & anamorph.
4. *Aspergillus terreus* & *Aspergillus niger*.
5. Microcyclic & Macrocyclic conidiation.
6. Mycorrhizae & lichens.
7. Ascomycota & Basidiomycota.
8. *Saccharomyces* & *Candida*.
9. Homothallic & Heterothallic.
10. Perithecium & Apothecium.
11. Gametangial contact & gametangial copulation.

III. Write the name of the fungus (answer only 10), its order and class, that contains the following structures (put your answer in table): **(10 Marks)**

1. Heterobasidium	2. Arthrospore	3. Star Shape Basidioma	4. Dictyospore
5. Microconidia	6. Annellide	7. Acropetal Succession	8. Amerospore
9. Synanamorph	10. Budding	11. Clamp Connection	12. Phragmospore.

IV. Give the scientific term for 5 only of the following: **(5 Marks)**

1. The Division of fungi with septate hyphae and sexual spores contained in sac.
2. The structure responsible for producing conidia.
3. The most important feature of Gastromycetes.
4. The stage of *Claviceps* that responsible for toxin production and pathogenicity.
5. A fungus completes its life cycle on two different hosts is called.
6. Fungi that can live at low temperatures.

" بقية الأسئلة فى الصفحة القادمة "

V. Choose the correct answer for 10 only of the following: **(10 Marks)**

1. All edible fungi belong to Division: Basidiomycota:
   a. True b. False
2. Aflatoxins are a serious problem because:
   a. They are produced by the most common fungus, *Aspergillus niger*
   b. They are carcinogenic c. They cause nephrotoxicosis d. None of the above
3. Fungi belong to Deuteromycetes are:
   a. lacking teleomorph b. lacking anamorph c. lacking dimorph d. producing ascospores
4. In Basidiomycota, dikaryon mycelium means that each cell has
   a. single haploid nucleus b. single diploid nucleus
   c. two haploid nuclei d. two diploid nuclei
5. Which of the following fungi produces citric acid
   a. *A. niger* b. *A. ochraceus* c. *A. fumigatus* d. none of the above
6. Rust and smut fungi are similar because both lack basidiomata
   a. True b. False
7. The majority of fungi
   a. reproduce by ascospores b. get their nutrients from living organisms
   c. are filamentous d. live on dead organic maters
8. Which of the following spore is haploid uninucleate
   a. Basidiospore b. Teleutospore c. Aeciospore d. Uredospore
9. Ascomata may be present or absent in the Ascomycota
   a. True b. False
10. Which of the following fungi used in manufacture of cheese
    a. *P. chrysogenum* b. *P. camemberti* c. *P. marnefii* d. *P. expansum*
11. *Pseudoallescheria boydii* belongs to Order
    a. Eurotiales b. Microascales c. Hypocreales d. Dipodoascaceae
12. Mycelia are septate in both
    a. Basidiomycetes and Oomycetes b. Zygomycetes and Ascomycetes
    c. Oomycetes and Zygomycetes d. Basidiomycetes and Ascomycetes

" انتهت الأسئلة "

Best wishes

Prof. Mohamed A. Abdel-Sater ***Dr. Nemmat A. Hussein***

Assiut university Faculty of Science Botany & Microbiology department		
Bryophytes, Pteridophytes and Gymnosperm (Code: 312 B)		
For Under Graduate Students (3^{rd} level)	**Second Semester 2018-2019**	**Time allowed :2 hours**

Answer the Following Questions (50 Marks)

Question no(1): Complete the following sentence and put your answer only in table (20 marks, one for each space)

1. In alternation of generation, the ..... alternate with ..... in the plant life.
2. ..... means the plant bears both male and female reproductive structures.
3. *Riccia* spore wall made of three layers: ....., ... and .....
4. *Marchantia* capsule contains ..... which helps in the spore dispersal by its hygroscopic nature.
5. Capsule of ..... dehiscent with four values.
6. Unlike *Marchantia,* ..... has no stomata or air-chambers in the thallus.
7. In .....young antheridia are green while the mature ones turn to bright orange or reddish.
8. Gametophyte plant of *Sphagnum* consists of two stages: ..... and .....
9. .....means the antheridia mature before the archegonia.
10. Sporangia groups in trilocular form called .....
11. According to the type of sporangia, *Selaginella* called .....and *Lycopodium* called .....
12. When *Equisetum* spores are moist, elaters are ..... and when it dry elaters become .....
13. Prothallus of ..... is leafy and heart-shape.
14. The dominant life stage of *Pinus* is the ..... plant.

Look in the back

Question no(2): Compare in table between three only of the following without drawing. **(18 marks, 6 for each)**

1. *Homoeophyllum* and *Heterophyllum* sub-genera of *Selaginella.*
2. Internal structure of *Riccia* and *Marchantia* gametophyte.
3. Differentiation between micro- and megasporangium.
4. Male and female cone of *Pinus*.

Question no(3): Answer with drawing only (two of the following) **(12 marks, 6 for each)**

1. Types of steles in pteridophyta.
2. Development stages of archegonium in *Anthoceros.*
3. Antheridium and archegonium in bryophytes.

With My Best Wishes

Dr- Ghada Abd-Elmonsef Mahmoud

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

Final exam of: Microbial Metabolism
Year: 2018/2019
Time: 2 hour
Total marks: 50 marks

Part (1) (25 marks)

(A) Write on each of the following: (16 marks)

1- Lactic acid fermentation in fungi

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

3- β-Oxidation of fatty acid

4- What enters and comes out of the electron transport chain?

(B) Answer with (X) or (√) each of the following: (5 marks)

1- Carnitine carries long-chain activate fatty acid on mitochondrial membrane ( )

2- During anaerobic respiration final e-acceptor is O_2 ( )

3- During transamination reaction removes the amino group as an ammonium ion occurs ( )

4- For each acetyl group that enters the citric acid cycle, three molecules ( )
of NADH and one molecule of $FADH_2$ are produced.

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

(C) Choose the correct answer each of the following: (4 marks)

1- .....results in synthesis of cell molecules and structures forms bonds, requires input of energy (ATP)

(anabolism – catabolism – fermentation – respiration)

2- The process of converting chemical energy of glucose into the chemical bonds of ATP is called?

(energy – glycolysis – conversation - cellular respiration)

3- Detoxifies ammonium ions from amino acid take place during .....

(oxidative deamination – fermentation - nitrogen fixation –urea cycle)

4- With respect to the element carbon, respiration is a(n) .....reaction.

(dehydration synthesis – digestion – oxidation – reduction)

Dr/ Maysa M. A. Ali

Continue

Part II (25 Marks)

A. Write short notes on <u>five only</u> of the following:
Use well labeled diagrams where appropriate. **(15 Marks)**

1. noncyclic photophosphorylation.
2. Ribulose bisphosphate carboxyl<u>ase</u>.
3. Carbon monoxide dehydrogenase/ acetyl-CoA synthase.
4. Glyoxylate
5. Light reaction
6. A nucleoside

B. Answer <u>two only</u> of the following questions. Use well labeled diagrams where appropriate.

(10 Marks)

1. Illustrate synthesis of non-essential amino acid.
2. Discuss the steps of pyrimidines synthesis.
3. Explain the difference between the catabolic and anabolic reactions.

With best wishes

Dr. Mysa Mohamod *Dr. Shymaa Ryhan*

Assiut University
Faculty of Science
Botany & Microbiology Department
Second Semester 2018-2019

Final Exam: Third Level
Course Code: B332
Course Title: Taxonomy of Flowering Plants
Allowable Time: 2 hours

ANSWER THE FOLLOWING QUESTIONS ...(50 Marks)

First question: Complete the following sentences with suitable words (2 marks each) .....(20 marks).

1. The most frequently variations among chromosome number being based upon the phenomenon of ..... which is known to arise either by.....
2. Number of stamens in Magnoliaceae are ....., while in Casuarinaceae are .....
3. Within Acanthaceae: there are ..... stamens attached to the ....., and sometimes with one or more .....
4. The leaves of Bombacaceae are: ..... , while of Orobanchaceae are.....
5. Some taxonomic information can be gained from the study of the mechanism of meiosis itself. For example .....
6. The leaves and bark of the *Salix* tree have been mentioned in ancient texts from Egypt as a remedy for ..... and .....
7. The fruits of Nymphaeaceae are ....., which dehiscing by ....., and the seeds have an .....
8. The technique of serology depending on.....
9. Betacyanins and betaxanthins have been found in.....
10. Two special cases of pollen apertures are known, these are:

    a. ..... b. .....

بقيـــة الأسئلـــة علـــى الصفحـــة التاليـــة

Second question: Give an account of 5 ONLY of the following (3 marks each)..... (15 marks).

1. The differences between the pollinia structure of Cynanchoideae and Secamonoideae.
2. The most diagnostic characters of Amaranthaceae, mention to the economic and medicinal uses of their plants.
3. Habit, leaves, fruits and seeds of Asclepiadaceae.
4. Polarity and symmetry of pollen grains.
5. Morphology and taxonomy of Angiosperms.
6. Floret composition in Poaceae.

Third question: Discuss 5 ONLY of the following (3 marks each)..... (15 marks).

1. Formation of pollen grains (spores).
2. *Lawsonia inermis* is one of the most popular ornamental shrubs in Egypt, it is belonging to family Lythraceae, write the most economic and medicinal importance of this plant.
3. Distribution, leaves and flower structure of Tamaricaceae.
4. Sporoderm.
5. The karyotype.
6. Cyathium structure of Euphorbiaceae.

.....

With My Best Wishes

Prof. Dr. A. Fayed

Assiut University — Forth & Third levels, Second Semester
Faculty of Science — Studying Year : 2018/ 2019
Department: Botany & Microbiology — Allowable Time : Two hours
Course Code 396B, — Course Title: Industrial microbiology
Academic Programs: Microbiology and Chem. & Microbiology
Total Degree: 50 marks

Final Term Exam, Part I: 25 marks, 60 min

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1. Give an account on only three of the following: (15 marks, 5 for each)
   a) Different application of industrial microbiology.
   b) Fermentation conditions and strategy for Baker yeast production.
   c) Preparation of raw material for ethanol fermentation.
   d) Down-stream processes in industrial vinegar production.

2- What are the main advantages of the following?
(10 marks, 2 for each)
   a) Using osmophilic yeast for glycerol bio-production.
   b) Aeration in the first stage of ethanol fermentation.
   c) Using industrial biotechnology for production of some chemicals.
   d) Instant active dry yeast as Baker yeast.
   e) Using *Saccharomyces cerevisae* for production of single cell protein.

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

Final Term Exam, Part II: 25 marks, 60 min

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1. Write on dehydrogenation, dihydroxylation and simple side chain degradation without ring D cleavage of steroids by microorganisms (5 marks)

2- Answer only two from the following: (20 marks, 10 for each)

a) Give an account on β-lactam antibiotics and penicillin properties.
b) Explain the production of citric acid by surface culture method.
c) Discuss the important and bio-production microbiologically of Δ^1 –dehydrocortisone.

WITH MY BEST WISHES
Prof. Dr.: S. S. El-Maraghy

امتحان الفصل الدراسي الثاني
للعام الجامعي 2019/2018

القسم الذي يقدم المقرر: المحاصيل الفرقة: المستوى الثالث والرابع - كلية العلوم

اسم المادة وكودها: تصميم التجارب (316 ز) الزمن: ساعتان
لجنة الممتحنين: أ.د. عادل محمد محمود ، د. محمد بدري محمد علي
المراجع الداخلي: أ.د. عزت السيد سليمان مهدي

الامتحان في صفحتين (50 درجة)

السؤال الأول: اختر الإجابة الصحيحة من بين الأقواس **(10 درجات)**

1-إذا كانت p-value =0.0321 فأي من النظريات التالية يكون صحيحًا *(درجتان)*

(أ)	(ب)	(جـ)	(د)
$\mu_1 = \mu_2 = \mu_3$ or $\mu_1 = \mu_2 \neq \mu_3$	$\mu_1 = \mu_2 = \mu_3$ or $\mu_1 \neq \mu_2 = \mu_3$	$\mu_1 = \mu_2 = \mu_3$	$\mu_1 \neq \mu_2 = \mu_3$ or $\mu_1 = \mu_2 \neq \mu_3$ or $\mu_1 \neq \mu_2 \neq \mu_3$

2-النموذج الإحصائي لتجربة عاملية مكونة عاملين في تصميم CRD هو *(درجتان)*

(أ)	(ب)	(جـ)	(د)
$X_{ij} = \mu + \alpha_i + \varepsilon_{ij}$	$X_{ij} = \mu + \alpha_i + \beta_j + \varepsilon_{ij}$	$X_{ijk} = \mu + \alpha_i + \beta_j + \alpha\beta_{ij} + \varepsilon_{ijk}$	$X_{ijk} = \mu + \alpha_k + \beta_i + \gamma_j + \varepsilon_{ijk}$

3-إذا كان معامل الارتباط (r) = 0.8949 فإن حوالي .....من الاختلافات في أحد العوامل يمكن أن تفسر بالعامل الآخر. *(درجتان)*

(أ)	(ب)	(جـ)	(د)
%70	%75	%80	%85

4-إذا كانت قيمة معامل الارتباط (r) = 0.75 وكانت هذه القيمة معنوية، فأي من القيم الجدولية (critical value $_{0.05}$) التالية يكون صحيحا؟ *(درجتان)*

(أ)	(ب)	(جـ)	(د)
0.57	0.79	0.85	0.90

5- إذا كان لديك عاملين (A, B) ولكل منهما مستويين وكان a_1b_1=20, a_1b_2=40, a_2b_1=50, a_2b_2=12، فإن: *(درجتان)*

(أ)	(ب)	(جـ)	(د)
Main effect(A) =1	Main effect (B) =9	Interaction effect (A×B)= 29	Interaction effect (A×B)=0

باقي الأسئلة في الخلف

امتحان الفصل الدراسي الثاني
للعام الجامعي 2019/2018

القسم الذي يقدم المقرر: المحاصيل الفرقة: المستوى الثالث والرابع - كلية العلوم

اسم المادة وكودها: تصميم التجارب (316 ز) الزمن: ساعتان
لجنة الممتحنين: أ.د. عادل محمد محمود ، د. محمد بدري محمد علي
المراجع الداخلي: أ.د. عزت السيد سليمان مهدي

السؤال الثاني: إذا كانت قيمة معامل الإرتباط (r) = 0.75، وكان تباين المتغير المستقل (variance of independent variable) =9، وتباين المتغير الغير مستقل (variance of dependent variable) =16، وكان متوسط كِلا المتغيرين متساويًا $(\bar{x} = \bar{y} = 4)$ فما هي معادلة خط الانحدار؟ **(10 درجات)**

السؤال الثالث: الجدول التالي يوضح أعداد المرضى بالالتهاب الرئوي الذين تلقوا اللقاح المضاد والذين لم يتلقوا اللقاح المضاد. فهل هناك علاقة بين الإصابة بالالتهاب الرئوي وتلقي اللقاح؟ (القيمة الجدولية $\text{Chi-squared}_{0.05}=5.99$) **(10 درجات)**

	No vaccinated	Vaccinated
Sick with pneumococcal pneumonia	23	5
Sick with non-pneumococcal pneumonia	8	10
Stayed healthy	61	77

السؤال الرابع: أكمل جدول الـ ANOVA التالي: **(10 درجات)**

Source	SS	DF	MS	F
A	40	1	.....	8
B	80	1	.....	16
A × B	20	.....	.....	4
Error	10	.....	5	

السؤال الخامس: قارن في جدول بين تصميمات CRD, RCBD, Latin square design من حيث مصادر الاختلاف – درجات الحرية – متى يتم استخدام كل تصميم – النموذج الإحصائي **(10 درجات)**

انتهت الأسئلة -مع أطيب الامنيات بالتوفيق

Assiut University Faculty of Science Botany & Microbiology Department	Final Exam (a) Host Parasite Relationship ٥٣٦٦ Time allowed: 2 hours

Question No. 1. Describe the type of host range for each of the following pathogens (4 marks)

Phytophthora infestance: .....

Plasmopara viticola:.....

Fusarium oxysporum f. sp. vasinfectum :.....

Pythium debaryanum :.....

Question No.2. When fungal mycelium and spores are present on the affected area of diseased plants, how can you determine whether the observed fungus is a pathogen or a saprophyte? (4 marks)

- .....
- .....
- .....
- .....

Question No.3. (10 marks). Which symptoms of the following are due to Appearance of Visible Pathogen (AVP) or due to internal Disorder (ID) in the host plants:

Chlorosis ( ) / Wilts ( ) / Smuts ( ) / Powdery mildews ( ) / Galls ( ) / Leaf curl ( ) / Blight ( ) / Damping off ( ) / Apple scab ( ) / Soft rot ( ).

Question No.4.Writ the suggestions that have been proposed to explain why germ tube enter the host or how they find the natural openings. (4 marks)

- .....
- .....
- .....
- .....

Question No.5. Give the scientific expression of the following sentences. (4 marks)

a) The survival of pathogen in wild host within the same family. ( )
b) The time that necessary between inoculation and appearance of Symptoms. ( )
c) The type of dispersal by the rain drops that falling with force on fungal propagules into small droplets and enable them to be carried to long distances by air ( )
d) It is the spreading of the pathogen through the host. ( )

Question No.6. Write (Yes) or (No) in front of each of the following sentences (4 marks):

a) Like water, air is a habitat of fungi.
b) All animate diseases are transmissible.
c) Penetration through injuries and wounds caused by insects is suitable for necrotrophs fungal pathogen.
d) The propagules that initiate the infection are called primary inoculum

Question No.7. Explain the following sentences (6 marks):

a) The infection of rice seedling plants with *Fusarium moniliform* may cause the foolish seedling disease.

b) Some fungal pathogens are host specific.

c) Fungal pathogens can cause an imbalance in the hormonal system of the plant.

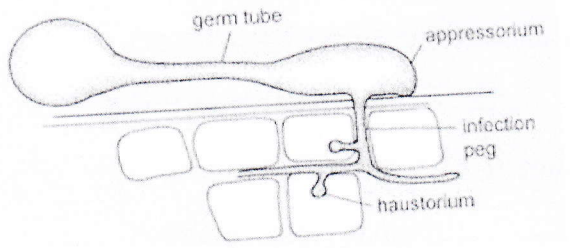
Question No.8. Write short note on Two Only of the following (4 marks):

a) How pathogen can affect absorption of the water.
b) The factors needed for successful infection.
c) Groups of enzymes necessary for the fungal pathogen to penetrate cutinized epidermis.
d) Special requirements for spore germination in some fungal pathogens.

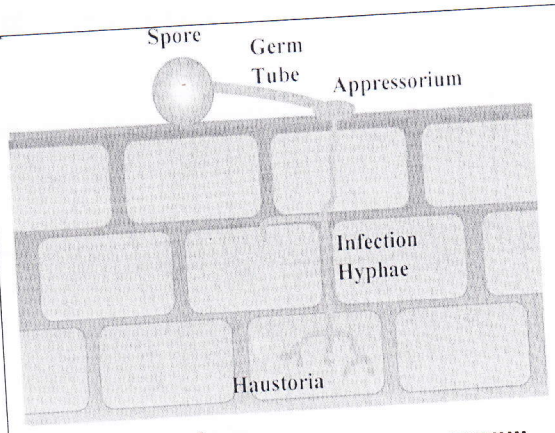
Question No.9 (2 marks): Arrange the following events as occur exactly in pathogenisis:

Invasion - Establishment of Infection - Survival in the absence of the host- Inoculation - Dissemination of the pathogen - Penetration - Growth and reproduction of the pathogen - Establishment of Infection.

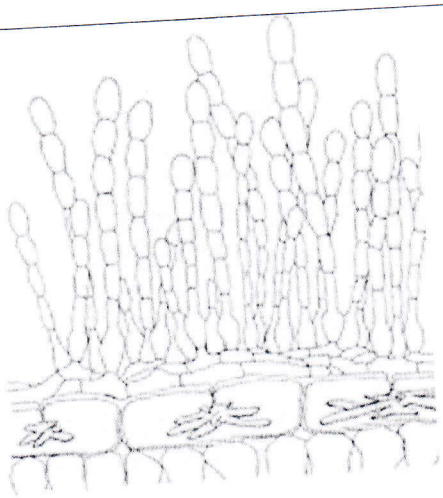
Question No.10 (8 marks) Using the following images complete the sentences for each one:



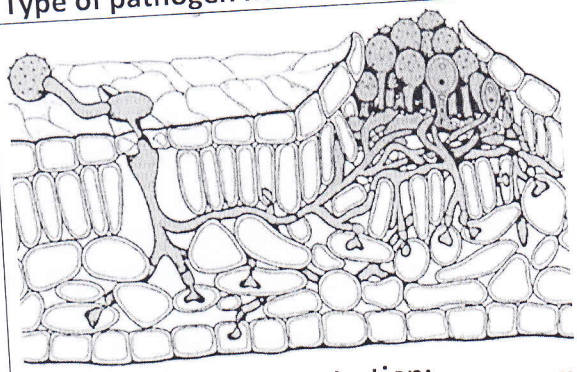
Type of pathogen penetration: .....
Type of pathogen nutrition: .....



Type of invasion: .....
Type of pathogen nutrition:.....



Type of pathogen invasion:.....
Type of pathogen nutrition: .....



Type of pathogen penetration: .....
Type of pathogen invasion:.....

GOOD LUCK

Prof. A. Y. Abdel-Malek

Assiut University
Faculty of Science
Botany and Microbiology
Department

جامعة أسيوط
كلية العلـــوم
قسم النبـــات والميكروبيولوجى

Final Exam of Plant Biochemistry 352B, June 2019

Answer all the following questions (50 Marks)

I- Underline the correct answer (15 points), one point free:

1.	Acetyl CoA-SH is (a) produced during β-oxidation of fatty acids (b) a precursor of Isopentanyl pyrophosphate "IPP" (c) oxidized for energy generation in Krebs cycle (d) all the above.
2.	Manganese cluster (a) contains four manganese atoms (b) receives the four electrons from oxidizing two water molecules (c) donates electrons one by one to the D1 protein of PSII and then to the electron transport chain (d) all the above.
3.	Mevalonate is all the following but not (a) 5 carbon atoms (b) synthesized from acetyl Co A (c) a precursor of Geranylgeranyl pyrophosphate (d) all the above.
4.	Fatty acids are (a) polar - (b) non-polar (c) hydrophilic (d) b and c.
5.	ATP synthase is driven by (a) light energy (b) photosynthetic oxidation of water (c) proton motive force (d) none of the above.
6.	Alkaloids are all the following but not (a) plant derived (b) acidic (c) contain at least one nitrogen atom (d) exert pharmaceutical effect.
7.	Waxes, as lipids, are esters of fatty acids with (a) glycerol (b) higher alcohols than glycerol (c) phospholipids (d) glycolipids.
8.	(a) Photosynthetic oxidation of water (b) Glycolysis (c) Calvin cycle (d) b and c, are independent on light.
9.	Phytoalexins are plant defense secondary compounds with antimicrobial properties; they are characterized by the following except (a) produced by plants after infection (b) induce short- hypersensitive stress response or long-term systemic acquired resistance "SAR" (c) induced by products of microbial origin (elicitors) or by stress treatment (cold, UV light) (d) exert hormonal effect.
10.	The formation of reduced nicotinamide adenine dinucleotide phosphate ($NADPH+H^+$) implies (a) cyclic - (b) non cyclic - (c) oxidative - (d) a and b photophosphorylation.
11.	(a) One (b) Two (c) Three (d) Four electrons release(s) per each oxygen molecule evolves in photosynthesis.

12.	Organisms lacking (a) phycoerythrin (b) chlorophyll b (c) carotenoids (d) chlorophyll a, cannot perform the photosynthetic activity.
13.	Nitrate and/or nitrogen reduction (a) needs energy (b) ends to ammonia (c) a key step to form amino acids (d) all of the above.
14.	Ferridoxin is the electron acceptor from (a) PSII (b) PSI (c) H_2O (d) PQ.
15.	α-oxidation cuts fatty acids by (a) one carbon at a time (b) two carbons at a time (c) three carbons at a time (d) four carbons at a time.
16.	Photosynthetic carbon fixation occurs in (a) C3 plants (b) C4 plants (c) CAM plants (d) all of them.

II- Answer ONLY THREE of the following reactions (5 Marks each):

a: Transformation of light energy into chemical energy
b: Biosynthesis of mevalonic acid
c: β-oxidation of fatty acids
d. C4 pathway

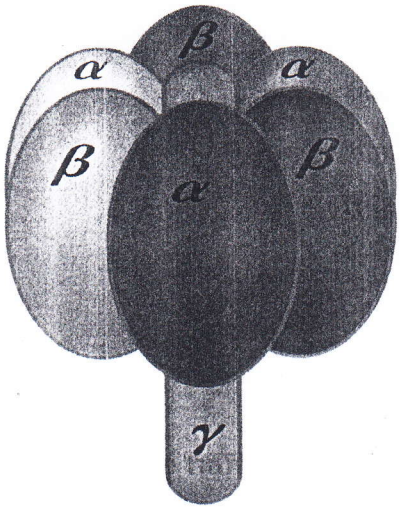
III- Put a ($\surd$) in front of the correct sentence or (X) in front of the wrong one, correct only the underlined word(s) if wrong (5 Marks, one free):

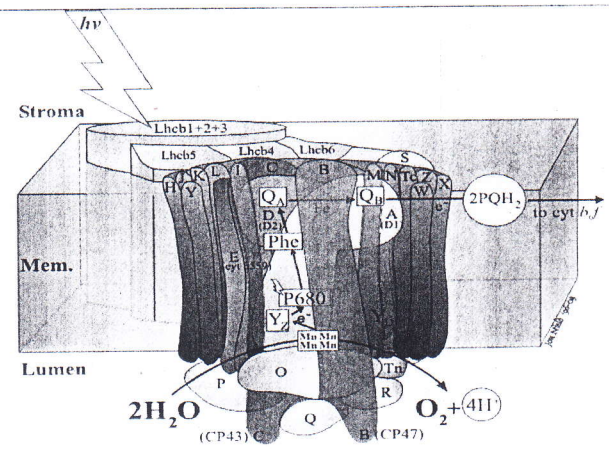
1	Terpenoids do not contain oxygen.	
2	Fatty acids in triglycerides should be heterogenous.	
3	Nitrate reduction to ammonia takes place on two steps, nitrite and ammonia.	
4	CAM pathway occurs in Crusslaceae and implies spatial separation of carbon fixation.	
5	A carotenoid molecule is composed of porphyrin ring, phytol tail and has a central magnesium ion.	
6	Pigments, natural or synthetic, should have conjugated bonds.	

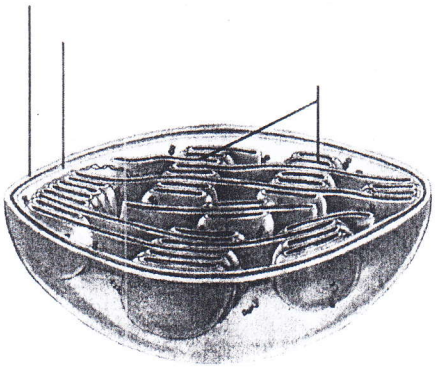
VI. Write down the scientific term best expresses the following information (1 Mark each, one point free):

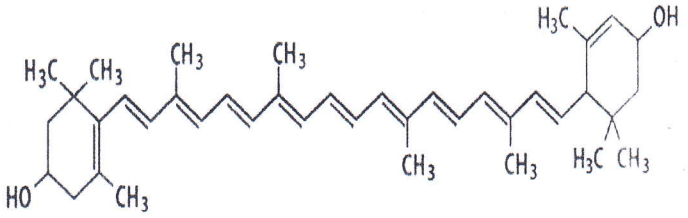
1	Alkaloids that decrease sweating, relaxes smooth muscles, produces saliva and has limited influence on CNS	
2	Nitrogen fixing bacteria infecting legume roots form....	
3	The stage of Calvin cycle that consumes most of the assimilatory power	
4	Triterpenes of hormonal effect	
5	Multiples of 5 carbon atoms give	
6	Synthesis of ATP	
7	A phenolic compound with acetyl group and acts as a phytohormone	
8	Diglycerides with a phosphoric acid moiety	
9	ATP and NADPH+H^+ are called	
10	The enzyme that synthesizes ATP	
11	Temporal separation of carbon fixation	

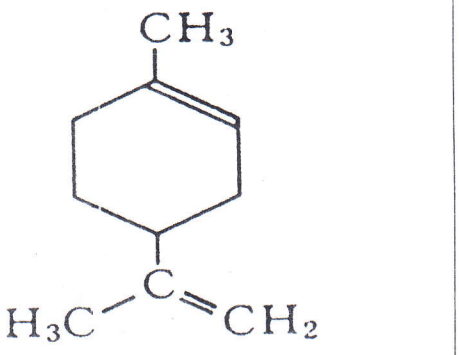
V. **Write down the names of the given figures (5 Marks, one free):**

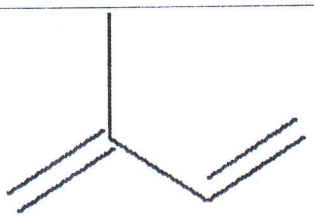












Best wishes,

2019

Prof. Dr. Refat Abdel-Basset