
	<p align="center">Second semester Final exam. (2016-2017) Bryophytes, Pteridophytes and Gymnosperms (Code : 312 B)</p>		
<p align="center">Botany and Microbiology Department</p>	<p align="center">For Under Graduate students (3rd level) Date: 31/5/2017</p>	<p align="center">Time allowed 2 hours</p>	<p align="center">Assiut University</p>

Answer the following questions (with drawing)..... 50 marks

I. Describe in details three only of the following..... (3×6 = 18 marks)

1. *Anthoceros* has connecting links with the Chlorophyceae, liverworts, mosses and some Pteridophytes.
2. Internal structure of *Selaginella*, *Psilotum* and *Lycopodium* stems with a special reference to their stele types.
3. *Funaria* and *Polytrichum* capsule.
4. Development and structure of *Riccia* antheridium and archegonium.

II. Shortly explain four only of the following (4×4 = 16 marks)

1. Changes occur in *Marchantia* archegoniophore after fertilization.
2. Gametophyte morphology of different genera belonging to sub-order Achrogynae.
3. Morphology and anatomy of *Sphagnum* leaves.
4. Structure of male and female cones of *Pinus*.
5. Development and dehiscent of *Pellia* sporophyte.

III. Define seven only of the following (7 marks)

- | | |
|---------------------------|----------------------------|
| 1. Perichaetial leaves | 2. Gradate sorus |
| 3. Flaogelliform branches | 4. Protandrous gametophyte |
| 5. Exosporic gametophyte | 6. Innovation branches |
| 7. Aposporic reproduction | 8. Spermatogenesis |

IV. Give reason for three only of the following..... (3×3 = 9 marks)

1. The mid-rib of *Polytrichum* leaves has the main role in photosynthesis.
2. *Selaginella* exhibits a significant approach towards seed habit.
3. Bryophytes are considered as the amphibians of the plant kingdom.
4. *Psilotum* considered as a transitional phase between Filicopsida and Rhyniopsida.

Best wishes

Prof. Dr. Taha Ramadan

Professor of Plant Ecology
Botany and Microbiology Department

Dr. Ahmed Amro

Lecturer in Botany and Microbiology Department



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 : (15 marks)

1	Calcium is a component of chlorophyll and an absolute requirement element for pigmented all algal groups	()
2	Agar-Agar is a dried or gel -like nitrogenous extract of Phaeophycean algae	()
3	Phytoplankton are primary producers of organic matter in aquatic habitats	()
4	Phycobilliprotein and other cellular protein degraded in P-deprived cell of many algal cell	()
5	<i>Cephalerus virescens</i> grown in many economic plants eg. Citrus fruits, avocads and tea and known as red rust	()
6	<i>Paramecium</i> has a mutualistic endosymbiotic relationship with <i>Chlorella</i> sp	()
7	Parasitic is the term for a mutually beneficial association that occurs between two different species.	()
8	Golden Jellyfish get their color from the symbiotic algae that live within their tissues and provide them with their sustenance.	()
9	Algae live free floating in the water is called halophytic algae	()
10	Algae live in parasitic relationship with sea anemones and Jellyfish	()
11	<i>Algae live in direct association with embryos inside salamander egg capsules</i>	()

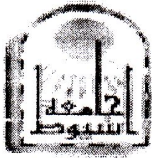
12	The algae are found in the snow mountain peaks termed as soil algae	()
13	When vigorous photosynthesis occurs in productive waters. Carbon dioxide levels and pH decrease	()
14	Eutrophication is induced by the discharge of phosphate-containing detergents, or sewage, into an aquatic system.	()
15	Iodine uptake and accumulation in marine algae are positively related to temperature	()

Question no (2): Fill in the blanks with suitable words (10 marks)

1. Endozoic algae are those algae live in
2. Halophytic algae are algae found in
3. The algal forms occurring on the surface of soil are called
4. Aerial epilithic algae are... ..
5. Phytoplanktonic algae are those algae.....
6. Photic zone is
7. Parasitism and Mutualism means
8. Alginates are the salts of alginic acid found in the cell wall of the
9. The secretion of and by blue-green algae can caused death of farm animals and fish.

Question no (3): Discuss two only of the following questions (25) marks.

- 1: Algal vertebrate and invertebrate animal symbiosis
- 2: Factors affecting algal productivity (Discuss three factors only)
- 3: Commercial and medicinal uses of algae and harmful aspect of algae.

Assiut University Faculty of Science Botany & Microbiology Department		Host parasite relationship Second Semester 2016 - 2017 Course No.366 (B)
Examination For The Third Level		
Time allowed : 2 hours		

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

1-Compare between Five Only Of the following: --- (25 mark)

- A-Primary and secondary inoculums
 - B-The appressorium and haustorium
 - C-Infection of root- hairs and stomata by the pathogen
 - D-Survival of plant pathogens as soil borne and seed borne fungi
 - E- Pathogens of high and low competition
 - F-Deposition of Gums and formation of Tyloses
-

2- Discuss the Following Question (Obligate) -----15 Mark

- A- Wilt disease----- 5 marks
 - B- Enzymes secreted by plant pathogens -----10 marks
-

3- Explain TWO Only Of The Following ----- 10 marks

- A- Direct dispersal of the plant pathogens
 - B- Effect of plant pathogens on translocation of water by xylem vessels
 - C- Pre-existing biochemical defence
-

Good Luck

Prof. Khayria Mohammed Abdel- Gawad



Assiut University
Level Three
25-5-2017
Two Hours

Faculty of Science
2nd Term
No. 396 N
50 marks



Botany & Microbiology Department
Microbiology and Chemistry & Microbiology
Industrial Microbiology
Final examination

Industrial Microbiology

Answer FIVE ONLY FIVE QUESTIONS from the following [10 marks for each one]:-

1. Define each of the following:-

- a) Propagation.
- b) Metabioses.
- c) Fermentation.
- d) Secondary screening.

2. Write on:-

- a) The characteristics important of microbes used in the industrial microbiology.
- b) Selection of raw materials used in fermentation.

3. Discuss the important and microbial bioproduction of: Δ^1 -dehydro-cortisone.

4. Explain the processes condition of that control bioproduction of penicillin G.

5. Describe the cultural and the processes condition that control production of ethanol from molasses.

6. Write on the general characteristics of yeast strain used in production of fresh bakers yeast.

With All My Best Wishes and Good Luck

Prof. S S El Maraghy



Assiut University
Third & Fourth Levels
Microbial 1st metabolism
Two Hours

Faculty of Science
Microbiology
No. 392
50 marks



Botany & Microbiology Department
2nd Term
1-6-2017
Final examination

PART ONE: Fungal Primary Metabolism [25 marks]

I. Compare between ONLY THREE of the following [5 marks]:-

1. Different kinds of microbial respirations (in table) [3 marks].
2. Glutamine and asparagine [2 marks].
3. Glycogenesis and gluconogenesis [2 marks].

II- Write short notes about ONLY TWO of the following [5 marks]:-

1. Different glycolysis pathways in microbial cells (Count only).
2. Mixed fermentations.
3. Different types of microbial anaerobic respirations with three examples.

III- How you obtained ONLY FIVE of the following metabolites from glucose [5 marks]:-

1. Ethanol
2. Urea
3. Lactic acids
4. Carotenoids
5. Chitin and chitosan
6. α -Ketoglutarate

IV. Identify the following figures and complete the missed numbers [10 marks]:-

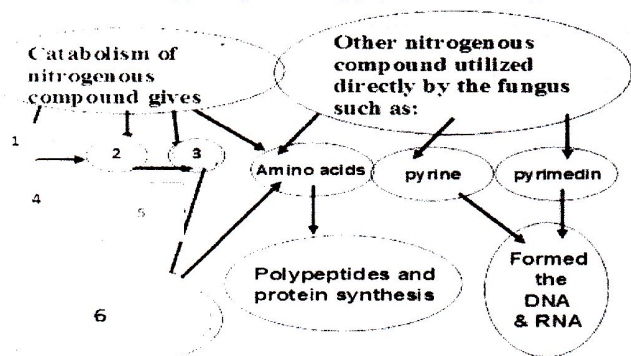


Figure 1:

- 1) all these forms
are to the living cells.
4) 5) 6)

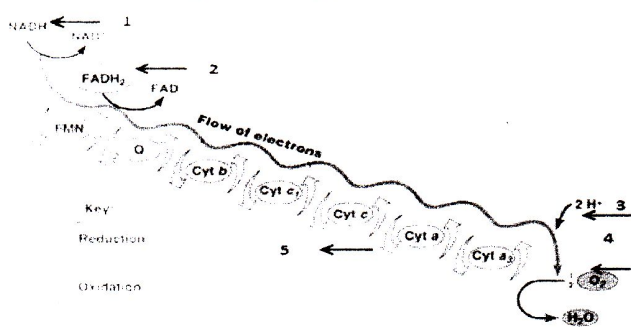


Figure 3:

- 1) 2) 3)
4) 5)

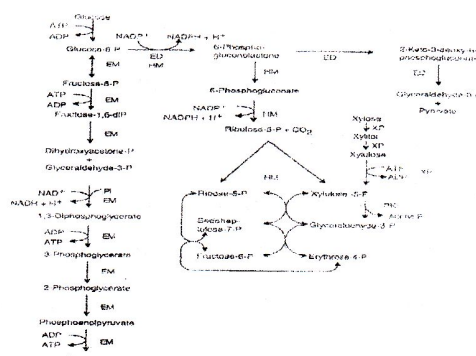


Figure 2:

- 1)EM 2)ED 3)HM
4)PK 5)XP

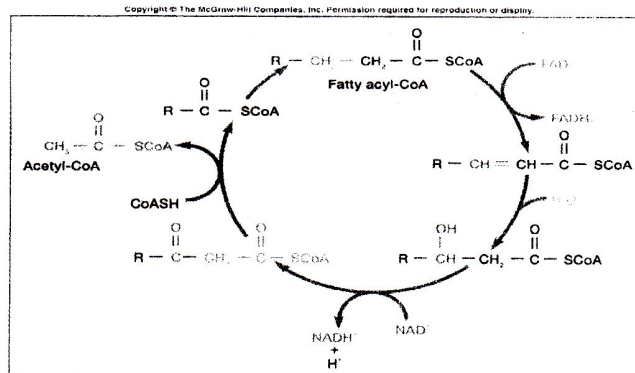


Figure 4:



Assiut University
Third & Fourth Levels
Microbial 1st metabolism
Two Hours

Faculty of Science
Microbiology
No. 392
50 marks



Botany & Microbiology Department
2nd Term
1-6-2017
Final examination

PART TWO: Bacterial Primary Metabolism [25 marks]

I- Answer with (✓) or (X) and correct the (false) statements in the following [10 marks]:-


- 1- Hydroxylamine reductase catalyze the conversion of nitrate to ammonia in fungal cells ()
- 2- Fungi belong to chemolithotrophic because the organic matter is the source of energy ()
- 3- Reduced forms of carbon such as carbohydrates and alcohols carry a great potential chemical energy stored in their bonds. ()
- 4- Nitrogenase is inactivated when oxygen reacts with the iron component of the proteins. ()
- 5- *Azospirillum* penetrate the root hair and multiply to form the infection thread during invasion stage of root nodule formation. ()
- 6- Nitrification involves the oxidation of the amino acids to nitrate ions by *Nitrobacterium*. ()
- 7- In eukaryotic microbes, pigments are integrated into cytoplasmic membrane while in prokaryotic they located in special membrane called thylakoid. ()
- 8- The main product in DE novo pathway is UMP (uridine monophosphate). ()
- 9- Carotenoid is an antioxidant pigment prevent photo-oxidation. ()
- 10- Antenna pigment function as massive antenna complexes. ()

II. Discuss the THREE ONLY of the following [9 marks]:-

1. Salvage pathways for synthesis of pyrimidine.
2. Mechanism of nodule formation by rhizobia.
3. Different features of an oxygenic photosynthetic bacterial species.
4. Classify the microbes based on carbon and energy sources requirement.

III. Compare between TWO ONLY of the following [6 marks]:-

- 1- *Nostoc* and *Chlorobium* photosynthetic mechanism.
- 2- Sulphur metabolism in bacteria and fungi.
- 3- Nitrogen assimilation and mineralization.

Department of Botany and Microbiology		Third level	- 2016/2017
Faculty of Science		Final Examination of Microbial Enzymes (394 B)	
Assiut University		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 classification of enzymes based on International Enzymes Commission.
- b-Illustrate on the reaction, the four digits of EC 2.1.1.1.

2- Describe each of the following (12.5 marks)

- a- How can the cell regulate enzyme activity by allosteric site.
- b-Application of isomerases in industry.

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

- a-The enzymes localization and activity in cytoplasm and mitochondria.
- b-Cofactors, coenzymes and prosthetic groups.

4-Explain each of the following (12.5 marks)


- a-Non-competitive Inhibitors on bases of Lineweaver-Burk plot.
- b-Transfer of the amylase gene into a plasmid of bacteria.

5-Write on each of the following (12.5 marks)

- a-Enzymes properties.
- b-How nanotechnology enabled enhancement of enzyme activity and thermostability.

Good luck

Prof. Dr. Hassan A. H. Hasaan

Faculty of Science Botany Department	بسم الله الرحمن الرحيم 	كلية العلوم قسم النبات
Time allowed : 3 Hours 342 B	Second Term Examination 2016- 2017 <i>Phytosociology</i>	

Answer the following questions

I- Write in detail on **TWO ONLY** of the following: .. (35.0 marks).

- 1- The phytosociological tables.
- 2- Frequency diagram as a test for homogeneity in the plant communities.
- 3- Fidelity and characteristic species.

II- Write short notes on **THREE ONLY** (35.0 marks).

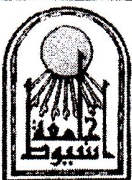
- 1- Factors affecting the number of species in the plant groups.
- 2- Presence and constancy .
- 3- Stratification.
- 4- Plant cover (area occupied , dominance)

III -Answer **FOUR ONLY** of the following :

Compare between : (30.0 marks).

- 1- Abundance and richness.
- 2- Association and Sociability.
- 3- Presence and Frequency.
- 4- Denuded and clip quadrates .
- 5- Plant cover and area occupied by plants.

GOOD LUCK
Prof. Dr. F.M.Salama

Assiut University Faculty of Science Botany & Microbiology Dept		جامعة أسيوط كلية العلوم قسم النبات والميكروبيولوجي
Plant pathogenic fungi (364B)	Final exam 18 May 2017	Time: 2 hours
Microbiology & Chemistry/Microbiology		3 rd level students

Answer the Following Questions (25 Marks)

I. Give a short account on 2 of the following

(6 Marks)

1. Postharvest disease
2. Symptoms of damping off disease
3. Control of club root disease

II. Write briefly with diagram on 3 of the following

(6 Marks)

1. Life cycle of *Phytophthora infestans*
2. The difference between *Peronospora*, *Plasmopara* and *Bremia*
3. Disease cycle of *Synchytrium endobioticum*
4. Asexual stage of the causal agents of white blister, late blight, peach leaf curl and club root

III. Give the name of disease and the host for 5 only of the following fungi (5 Marks)

1. *Penicillium italicum*
2. *Bremia lactucae*
3. *Taphrina deformans*
4. *Pythium debaryanum*
5. *Aspergillus niger*
6. *Albugo candida*

IV. Write the scientific term for 6 only of the following

(3 Marks)

1. The pathogen which completes many disease cycles in one year
2. A structure formed in *Pythium* before germination and infection
3. Auto resistance of infection
4. Large sized outgrowths formed on attacked part of the host
5. White powdery mass of sporangia and sporangiophores
6. Degree of pathogenicity in a qualitative sense
7. Structure in *Plasmodiophora*, responsible for appearing symptoms

V. Choose the correct answer for 10 only of the following

(5 Marks)

1. Bordeaux mixture is used for protection against:
 - a. *Plasmopara viticola* on grapevine
 - b. *Uncinula nectar* on grapevine
 - c. *Podosphaera leucotricha* on apple
 - d. *Venturia inequalis* on apple
2. Spore balls are formed by:
 - a. *Phytophthora*
 - b. *Spongospora*
 - c. *Plasmodiophora*
 - d. *Albugo*
3. Choose the correct one:
 - a. Damping off, *Plasmopara*, grapevine
 - b. Club root, *Pythium*, cabbage
 - c. White blister, *Albugo*, cabbage
 - d. Downy mildew, *Erysiphe*, wheat
4. Death of tissue in infected plant is described as:
 - a. Curling
 - b. Necrosis
 - c. Hypotrophy
 - d. Hyperplasia
5. Downy mildew of cabbage is caused by:
 - a. *Sclerospora graminicola*
 - b. *Peronospora destructor*
 - c. *Peronospora parasitica*
 - d. *Pseudoperonospora cubensis*
6. A fungus which can grow on living host plant is called:
 - a. Obligate saprobe
 - b. Obligate parasite
 - c. Facultative parasite
 - d. Facultative saprobe
7. Which of the following gives wrong information about downy mildew:
 - a. Division: Oomycota
 - b. Order: Erysiphales
 - c. Family: Peronosporaceae
 - d. All of the above
8. Peach leaf curl disease is caused by a member of:
 - a. Zygomycota
 - b. Oomycota
 - c. Ascomycota
 - d. None of the above
9. With regard to nutrition, *Plasmodiophora* is:
 - a. Ectoparasite
 - b. Endoparasite
 - c. Saprobe
 - d. Endophyte
10. The symptom of soft rot mostly is found on:
 - a. Stem
 - b. Flower
 - c. Leaf
 - d. Fruit
11. Primary source of infection to downy mildew is
 - a. Soil
 - b. Air
 - c. Seed
 - d. All of the above
12. Sporangium on germination produce vesicle in:
 - a. *Phytophthora*
 - b. *Pythium*
 - c. *Rhizopus*
 - d. *Peronospora*

"والله اعلم"

With my best wishes

Dr. Nemmat A. Hussein



I- With drawing (if possible) compare between Four only of the following: (20 marks)

- 1- Teleutospores in Families: Pucciniaceae and Ustilaginaceae .
- 2- Subgenera of *Penicillium* and teleomorphs of *Aspergillus* groups.
- 3- Types of Basidiocarps and Ascocarps.
- 4- Spore formation in *Saccharomyces* and *Agaricus*.
- 5- Somatic structure in Basidiomycetes and Ascomycetes (Powdery mildews).

II- Answer by one word on 5 only of the following: (5 marks)

1	The fungal cells that remain arranged compactly and loose their individuality.	
2	Fungi that live on decaying leaves.	
3	The fungus that complete life cycle on two host plants.	
4	A group of fungi that produce naked asci on host plants.	
5	A few of Ascomycetes entirely developed and remained underground.	
6	A group of fungi that produce closed ascoma with scattered asci.	

III- With illustration only answer on 4 only of the following:- (10 marks)

- 1- Long life cycle in rust diseases.
2. Chlamydospores in *Fusarium*.
- 3- Two genera related to Family: Sphaeropsidaceae.
- 4- Soft myceloid appendages attached with ascocarps in Family: Erysiphaceae.
- 5- Flowering infection in smuts diseases.

IV-Choose the correct answer for 10 only of the following:

(10 marks)

- 1- Which of the following form Acervulus
 - a. *Trichurus*
 - b. *Pestalotia*
 - c. *Phoma*
- 2- Which of the following are divided into four cells by transverse septa
 - a. *Heterobasidium*
 - b. *Holobasidium*
 - c. *Phragmobasidium*
- 3- Which of the following fungi forms Gymnothecium
 - a. *Aspergillus*
 - b. *Talaromyces*
 - c. *Eupenicillium*
- 4- The ascus wall of *Tuber aestivum* is
 - a. Unitunicate
 - b. Bitunicate
 - c. Prototunicate
- 5- Which of the following fungi that its life cycle depends on the stage of the plant
 - a. *Taphrina*
 - b. *Uncinula*
 - c. *Claviceps*
- 6- A fungus used for production of Cyclosporine
 - a. *Cordyceps*
 - b. *Claviceps*
 - c. *Aspergillus oryzae*
- 7- Which of the following fungi forms two types of conidia
 - a. *Penicillium*
 - b. *Fusarium*
 - c. *Ulocladium*
- 8- Which of the following fungi forms Synnemata
 - a. *Botryodiplodia*
 - b. *Graphium*
 - c. *Geotrichum*
- 9- Which of the following fungi produces lovastatin?
 - a. *Aspergillus niger*
 - b. *Penicillium citrinum*
 - c. *Aspergillus terreus*
- 10- Which of the following fungi causes Aspergilloma
 - a. *Aspergillus fumigatus*
 - b. *Aspergillus oryzae*
 - c. *Aspergillus flavus*
- 11- Which of the following fungi forms conidia in acropetal succession
 - a. *Alternaria*
 - b. *Scopulariopsis*
 - c. *Aspergillus*

V- Give the teleomorphs for Five only of the following:

(5 marks)

- | | | |
|--------------------------|-----------------------|-----------------------|
| 1- <i>Scopulariopsis</i> | 2- <i>Stemphylium</i> | 3- <i>Trichoderma</i> |
| 4- <i>Exserohilum</i> | 5- <i>Fusarium</i> | 6- <i>Alternaria</i> |

Good luck

Prof. M. A. Abdel-Sater

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- T helper cells

1.
2.
3.

3- Immunoglobulins

1.
2.
3.

4- Complement system:

1.
2.
3.

II- Illustrate with diagram: (2 marks each)

a) The steps of activation of B-cells:

b) The steps of PHAGOCYTOSIS:

c) The steps of activation of T cytotoxic cells:

III- Compare between each of the following: (3 marks each)

1.

	IgM	IgG

2.

	Classical pathway of complement activation	Alternative pathway of complement activation

3.

	NK	T cytotoxic cells

4.

	Primary IR	Secondary IR

IV- Answer the following questions:

1. Explain the mechanism of the hypersensitivity reaction that is associated with IgE antibodies with examples (3 marks)

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

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 the different types of graft rejection (2 marks)

- a)
- b)
- c)
-

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

1. *Contact dermatitis* is an example of type.....hypersensitivity:
 - a) I.
 - b) II.
 - c) III.
 - d) IV.
2. Antigens that are present in fetus but reappear on tumor development is called.....:
 - a) Allograft.
 - b) Ordinary antigen.
 - c) Hapten.
 - d) Oncofetal antigen.
3. Monoclonal antibodies coupled to cytotoxic drugs and used in treatment of cancer are called.....
 - a) Hybridoma.
 - b) PEG
 - c) Carcino embryonic antigen
 - d) Magic bullet therapy.
4. The role of IgA is:
 - a) Bioconversion of B cells to plasma cells.
 - b) Act as antigen receptor on the surface of APC.
 - c) Detoxification of digoxin.
 - d) Provide immunity on mucous surfaces.
5. The process in which the self-reactive T-cells are destroyed in Thymus gland during embryonic life to prevent autoimmune diseases is called.....
 - a) Phagocytosis.
 - b) Negative selection
 - c) Opsonization.
 - d) None of the above.
6. The cells that secrete IL-10 and TGF-B to suppress the auto-reactive cells are called.....
 - a) TH17
 - b) Treg
 - c) TH1
 - d) NK suppressor cells
7. The following is an example of type III hypersensitivity.....
 - a) Anaphylactic shock
 - b) Arthus reaction
 - c) Incompatible blood transfusion
 - d) None of the above.
8. C3 convertase consist of:
 - a) C4aC2a
 - b) C4b2b
 - c) C56789
 - d) None of the above.
9. During the secondary immune response, the following antibodies could be detected:
 - a) IgM.
 - b) IgG.
 - c) IgA.
 - d) IgE.
10. Is not an APC.
 - a) B cells.
 - b) NK cells.
 - c) Macrophage
 - d) DC.

1	2	3	4	5	6	7	8	9	10