Department of Botany and Microbiology	**Microbiology Students (Third level)- 2014/2015**
Faculty of Science	**Final Examination of Physiology of fungi (363B)**
Assiut University	**Second Semester – 2 hours**

Answer the following questions (50 marks)

1- Give an account of 2 only of the following 10 marks

a-Phases of filamentous fungi growth and changes in culture medium.

b-Role of P and Mg in fungal nutrition.

c-Factors responsible changes in pH of medium and the methods of pH fixation during fungus growth.

2-Compare in table between 2 only of the following 10 marks

a-Chemical composition of Mastigomycotina and Zygomycotina cell walls.

b-Psychrophilic and thermophilic fungi.

c-Cultivation methods of fungi.

3- Describe 2 only of the following 15 marks

a-Utilization of carbon by fungi and and its role in general anabolism of cell.

b-Nitrogen nutrition and its role in aspartic acid formation in fungal cell.

c-Lipid components of cell and mycological oxidation of fatty acids.

4- Select the correct answer 15 marks

1	**Enolase enzyme catalyzed by**	Fe^{++}	Cu^{++}	Zn^{++}	Mn^{++}
2	**kinase enzyme catalyzed by**	Fe^{++}	Mg^{++}	Zn^{++}	Mn^{++}
3	**Dematiceae fungi cell wall contains**	Cellulose	Chitosan	Melanine	Xylomannose

باقى الاسئلة فى الخلف

4	**Glucosidic linkage in S-glucan is**	α (1-4)	β (1-4)	α (1-3)	β (1-3)
5	***Agaricus* cell wall contains**	Cellulose	Chitosan	R-glucan	Chitin
6	**Most fungi are**	Acidophilic	Weak acidophilic	Alkalophilic	Weak-alkalophilic
7	***Saccharomyces* cell wall contains**	Chitin	Chitosan	Glucan	Cellulose
8	**Sugar residue at autolysis growth**	Decreased	Increased	Constant	Not changed
9	**Submerged cultivation doesn't grow in**	Shaker apparatus	Fermentor apparatus	Continuous-Flow apparatus	Stand apparatus
10	**Preservation of fungi needs**	Soil	Oil	Gelatin	Any one of them
11	**Generation time in log phase**	Increased	Decreased	Constant	Any one of them
12	**Nitrogen residue at optimum growth**	Increased	Decreased	Constant	Not changed
13	**Reversible growth occurs with**	Minimum temp	Maximum temp	Minimum pH	Maximum pH
14	**The light affect on**	Cell wall	Nucleic acid	Pigment	All of them
15	**Parophilic fungi grow at**	High pressure	Low temp	High temp	High CO_2

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

Assiut University
Faculty of Science
Botany & Microbiology Department
Second Semester 2014-2015
5 - June - 2015

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 notes on 4 only of the following: (20 marks)

1- The southern part of Sinai.
2- General characteristics of Egyptian Western Desert.
3- Main principles of Plant Nomenclature.
4- Plant life in Gabel Elba region.
5- Identification and uses of the Herbarium.

Q2. Compare between 4 only of the following: (20 marks)

1- Holotype & Lectotype.
2- Palaeotropical & Neo-tropical geographical Kingdom.
3- Halophytes & Hydrophytes plant life forms (Give Examples).
4- Basionym & Autonym.
5- Linked & Nested dichotomous key.

Q3. Discuss 2 only of the following sentences: (10 marks)

1- Phanerophytes are one of plant life forms in Egypt (Give Examples).
2- Botanical gardens as method of plant identification.
3- Egyptian Eastern Desert was divided to three man parts.

End of the Exam
With My Best Wishes ..... Dr. Ahmed Faried

Department of Botany and Microbiology Faculty of Science Assiut University	Microbiology Students (Third level)- 2014/2015 Final Examination of Microbial Enzymes (394 B) Second Semester – 2 hours

Answer the following questions (50 marks)

1-Describe 2 only of the following with drawing 10 marks

a-Changes caused by enzymes in the reactants.

b-The noncompetitive inhibitors.

c-The induced fit hypothesis.

2-Write in table on each of the following 16 marks

a-Microorganisms producing each of the following:

-amylase, protease, lipase, invertase and DNA polymerase.

b-Enzymes used in manufactured each of the following:

-ethanol fuel, textiles, leathers, cheeses and juices.

3- Write on 2 only of the following 10 marks

a-Application of **protease** in medicine.

b-Effect of **extreme pH** on enzyme and substrate.

c-Classification of microbial enzymes?

4-Explain 2 only of the following 14 marks

(Explain the class and name of enzymes and structure of the reactions)

a-Aspartic acid ⟹ L-Asparagine ⟹ Aspartic acid

b-Succinic acid → Fumaric acid
Succinyl CoA

c- Pyruvic acid → acetyl CoA
acetaldehyde

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

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) 2015
Allowable Time: 2 hours
Total Degree: 50 Marks

Answer the following questions

1. 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
Ergot disease of cereals	... (1) ...	... (2) ...	... (3) ...	... (4) ...	... (5) ...
Black rust of wheat	... (6) ...	... (4) ...	... (8) ...	... (9) ...	... (10) ...
Dutch elm disease	... (11) ...	... (12) ...	... (13) ...	... (14) ...	... (15)...
Apple scab disease	... (16) ...	... (17) ...	... (18) ...	... (19) ...	... (20)...

2. Illustrate with drawings only two of the following.....(14 marks)

a) Disease cycle and control of the pathogen causing powdery scab of potato.
b) Symptoms, pathogens and control of damping off and seedling blight disease.
c) Symptoms, pathogen and control of peach leaf curl disease.

3. Discuss with diagrams only two of the following .....(14 marks)

a) Role of ascomata in identification of powdery mildew fungi
b) Types of aecia in rust fungi
c) Fungal genera causing downy mildew disease

4. Compare between only two of the following.....(6 marks)

a) Epidemic and Endemic diseases
b) Pathogenicity and Virulence
c) Germination of spores in Families Ustilaginaceae and Tilletiaceae

..... Good Luck .....

Dr. Ismail Ramadan Abdel-Rahim

Assiut University- Faculty of Science
Department of Botany & Microbiology

3rd level (Microbiology & Chemistry-Microbiology Students)

Host-parasite relationship (366 B) **Final ex.: 6/6/ 2015** **Time allowed: 2 h.**

I) Write briefly on 4 of the following: - **(16 marks)**

1- Direct dispersal of plant diseases.
2- Symptoms due to appearance of the visible pathogens.
3- Effect of the pathogen on host reproduction.
4- Plant pathogen growth regulators.
5- Natural openings as defense means in plant.

II) Answer one of the following:- **(13 marks)**

1- Many characters of the plant surface function as barriers to penetration by the pathogen. Discuss this sentence?
2- The pre-existing biochemical defense consists of the presence of group of subsatances in the host which retard the growth of the pathogen. Explain this statement?

III) Compare in table between 4 of the following:- **(16 marks)**

1- Effect of the pathogen on host respiration and photosynthesis.
2- Phenolic compounds and phytoalexins.
3- Symptoms associated with hyperplasia and hypoplasia.
4- Entry of the parasite through cutinized and non-cutinized plant surfaces.
5- Histological and cellular structures as post-infection structural defense.

V) Answer on 5 only of the following (only one word):- **(5 marks)**

1- A fungus growing upon plant, where no parasite or symbiotic relation is involved?
2- An organism that is usually saprophyte but under certain conditions may become parasite.
3- Spore germinating giving to germ tube which attached itself by special structure called…
4- A disease which may be the result of plugging the conducting vessels.
5- Rain drops falling on sori enable them to be carried to long distances by air.
6- Outgrowth of xylem parenchyma which obstruct passage of water.

Good Luck Professor M. A. Abdel-Sater

	Botany and Microbiology Department	Faculty of science Assiut university
	Final term exam	***Time allowed 2 hour,***
	Ecology of algae (374)	***2014-2015***

Answer the following questions.

Question no 1:

Fill in the blanks with suitable words: (15 marks)

1. ..... Is a collective term of all those chlorophyll bearing organism which are thalloid
2. In algae the cell wall made of pure or mixed .....
3. Lithophytic algae are those algae grown on .....
4. Algae found inside the body of aquatic animals called .....
5. Sapophytes are algal forms occurring on ....
6. Algal communities dependant directly upon rain water or high humidity called ....
7. Phytoplankton are those algae living .....
8. The term primary production (or productivity) refers to.....
9. The viruses infected blue green algae are known as .....
10. Algae found on the polar ice caps are termed as.....
11. Water in area where river meats the sea is referred as..... .....
12. Herbivory of microalgae by zooplankton is called.....
13. The surface mat of algae on water called .....
14. Algae live free –floating in the water is called.....
15. ..... Are those algae found in saline water containing high percentage of salts

Question no 2

Put (✓) or (✗) in the front of each sentences from the following and recorrect the wrong one (14 marks)

1. Protein turnover occur as cyanobacterial response to nitrogen deficiency
2. Caraginine was extracted from sea weeds of Phaeophyceae, especially from members of Laminariales.
3. The high growth of plankton may lead to death of fish either directly or indirectly

4. phosphorus is irreplaceable element in all living organism
5. Silicon is an absolute requirement element for diatoms
6. Spirulina can used as a food and considered as a key to freedom from hunger
7. Alginates are the salts of alginic acid found in the cell wall of the Euglenophyta
8. *Spirulina* is reported to produce lethal toxin
9. Copper sulphate is used as algicide.
10. Bluegreen algae increase nitrogen content of the soil and results in higher yields.
11. Bacteria may live endophytically within the cytoplasm of dinoflagellates
12. Bacteria sometimes be catastrophic to the algal blooms and can be used for the biological control.
13. Algal forms occuring on the surface of soil eg. Vaucheria , called Sapophytes
14. Bacillariophyta improve the aeration of swamp soils and fix atmospheric nitrogen.

Question no 3

Answer on three points only from the following (21 marks)

1. Discus how does the Macronutrient availability effect on the primary productivity of algae.
2. Write a short notes on economic importance of algae (commercial products)
3. Write short notes on algal parasitism and symbiosis with fungi
4. Mechanism of phytoplankton buoyancy.

Good luck , Prof Dr.: M. S. Adam

Dr: Awatief. F. Hifney

Assiut University
Faculty of Science
Botany & Microbiology Department
Second Semester 2014-2015

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 (0.5 mark for each space) .....(17 marks).

1. Closely related to betacyanins are ....., which are ..... pigments.
2. The Fruit of Bombacaceae is a ..... , containing ..... seeds often with .....
3. The Floret in Gramineae consists of ....., ... and .....
4. Meiosis in some ..... and ....., which have smaller chromosomes with unlocalized centromeres is considered to be .....
5. The ovary of Family Iridaceae is ....., comprising of ..... carpels and ..... locules with ..... placentation.
6. Monocotyledoneae and Dicotyledoneae differ in some features of pollen morphology as follows: **a** ....., **b**....., **c**.....
7. Within family Lythraceae, the fruit is a ....., the seeds are ..... with a ..... embryo and ..... endosperm.
8. Two types of spore can be recognized in Pteridophyta: **a** ....., **b** ....., the spores of some Pteridophyta are surrounded by another layer called .....
9. Semantides are the.....: ..... is a primary semantide, ... a secondary semantide, and .....are tertiary semantides.
10. The wild native plants representing the family Amaranthaceae in Egypt are ....., ... and .....
11. The fruits of Nymphaeaceae are ....., which dehiscing by ....., its seeds have an .....

بقيـــة الأسئلـــة علـــى الصفحـــة التاليـــة «««««««««««««««

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

1. Gynostegium of Asclepiadaceae.
2. Sporoderm stratification.
3. The family Liliaceae.
4. The Latex in Euphorbiaceae.
5. Chromosome number.
6. Characteristic floral features of the family Acanthaceae.
7. Serology as a useful taxonomic tool.

Third question: Compare between **5 ONLY** of the following **(3 marks each)..... (15 marks).**

1. Pollinia structure of Cynanchoideae and Secamonoideae.
2. Female flowers of Casuarinaceae and Salicaceae.
3. Fruits of Gramineae (Poaceae) and Palmae (Arecaceae).
4. Spores of Gymnosperms and Pteridophyta.
5. Seeds of Tamaricaceae and Amaranthaceae.
6. Inflorescences of Boraginaceae and Orobanchaceae.

Prof. Dr. A. Fayed

امتحان الفصل الدراسي الثاني
2014/2015للعام الجامعي

القسم الذي يقدم المقرر: **المحاصيل** الفرقة: المستوى **الثاني والثالث (ساعات معتمدة) -كلية العلوم**
اسم المادة وكودها: تصميم التجارب (316 ز) الزمن: **ساعتان**
لجنة الممتحنين: **أ.د. عاطف أبو الوفا أحمد** **المراجع الداخلي: أ.د. مسعد زكي الحفني**
د. محمد بدري محمد علي

الامتحان في صفحتين

السؤال الأول: أجب عن الأسئلة الآتية: **(10 درجات)**

1-عرف ما يلي: [أربع درجات]

(a) Hidden replication (b) Type I error

2-أذكر أهمية النموذج الإحصائي [درجتان]

3-أذكر المدلول الإحصائي لما يلي [أربع درجات]

(a) r =+1 (b) $\hat{Y} = bX$

السؤال الثاني: **(10 درجات)**

إذا كانت متوسطات المعاملات كما يلي:

(1)	a	b	ab
3	4	3	6

وكانت الأرض متجانسة تماماً وكررت كل معاملة 4 مرات وكان معامل الاختلاف لهذه التجربة 10% والمطلوب:

(1) تحديد نوع التجربة [درجة واحدة] (2) ما هو نوع التصميم [درجة واحدة] (3) كتابة النموذج الرياضي [درجة واحدة]

(4) تحليل التجربة إحصائيا؛ علما بأن $F_{0.05}=4.75$ [سبع درجات]

السؤال الثالث: **(10 درجات)**

أكمل ما يلي إذا عُلم أن عدد المعاملات=4 وعدد المكررات=5 وتباين التجربة = 7.58

H_0: ....., H_A: .....

Source of Variation	*df*	*SS*	*MS*	*F*	*F0.05*
Between	.....	4703.19	.....	.....	3.24
Within	.....	.....	.....		
Total	.....	.....			

انظر في الخلف

السؤال الرابع: **(10 درجات)**

إذا علمت أن:

SS X=11, SS Y= 20, SS XY= −2

احسب معامل الإنحدار $b_{y.x}$ [درجتان ونصف]

احسب معادلة خط الإنحدار [درجتان ونصف]

احسب قيمة $\hat{Y}$ عندما X=2 [درجتان ونصف]

احسب معامل الارتباط بين العاملين [درجتان ونصف]

السؤال الخامس: أجب عن الأسئلة الآتية: **(10 درجات)**

1-أذكر نوع التجربة التالية ونوع التصميم والنموذج الإحصائي [خمس درجات]

B	E	A	D	C
C	A	B	E	D
D	B	C	A	E
E	C	D	B	A
A	D	E	C	B

2-إذا كان لديك التباينات التالية لأربع معاملات، **فهل التباينات متجانسة؟**

علما بأن قيمة **$F\text{-}max_{0.05}=20.6$** [خمس درجات]

Treatment	Variance
1	9.167
2	8.748
3	4.683
4	7.737

مع أطيب الأمنيات بالتوفيق والنجاح،

Assiut University Faculty of Science Botany and Microbiology Department		Date: June, 2015 Time allowed: 2 hours Subject: Microbial Metabolism (392 B)

Section "Bacterial Metabolism"

A) Answer only Four questions. Write the answer in the University Examination Answer Book provided. Use well labeled diagrams where appropriate. (4 Marks each)

1) Explain Ethanol fermentation by *Zymomonas mobils*
2) Compare between oxygenic and anoxygenic photosynthesis
3) Illustrate the steps of synthesis of purine
4) Discuss the amino acids synthesis pathways (glutamine, glutamate, aspartate, asparagine and alanine).
5) Write on the mechanisms of ATP generation by different organisms.

B) Choose the Right Answer For only Nine Questions: (1Marks each) Write the answer in the University Examination Answer Book provided.

1) Glucose is not used to produce ATP in:

a. Glycolysis
b. The Enter-Douderoff pathway
c. The Calvin-Benson cycle
d. Beta-oxidation
e. C and D

2) Anabolism removes water by a process called ._____
a. Hydrolysis
b. Dehydration synthesis
c. Phosphorylation
d. Cellular respiration

3) How many amino acids are there ?
a. 20
b. 25
c. 15
d. 30

4) Which part of ATP contains the most energy?
a. ADP
b. ribose
c. adenine base
d. phosphate

ملحوظة: باقى الاسئلة بالخلف

5) The end products of noncyclic photophosphorylation are

a. O_2, ATP, and NADPH.
b. carbon dioxide, and H_2.
c. water, ADP, and $NADP^+$.
d. ADP, and ribulose.
e. carbon dioxide, ATP, and water.

6) Whole point of photosynthesis is to produce (as an end product)

a. ATP
b. Ribulose diphosphate
c. Oxygen
d. CO_2
e. Glucose

7) The following are DNA bases except which one?

a. adenine
b. thymine
c. uracil
d. guanine

8) All of the following produce oxygen as a product of photosynthesis except

a. cyanobacteria.
b. oak trees.
c. purple sulfur bacteria.
d. algae.
e. phytoplankton.

9) During the reduction phase of the Calvin cycle, phosphoglycerate is reduced to _____ utilizing _____ as the reduction source.

a. phosphoglyceraldehyde; NADH
b. ribulose 1,5 - bisphosphate; NADH
c. phosphoglyceraldehyde; NADPH
d. ribulose 1,5 - bisphosphate; NADPH
e. pyruvic acid; NADPH

10) What kind of chemical reactions result in the synthesis of a protein from amino acids?

a. Hydrolysis reaction
b. Oxidation reactions
c. Anabolic reactions
d. Metabolic reactions
e. Catabolic reactions

Good luck
Dr. Shymaa Ryhan Bashandy

ملحوظه هامة: انظر الى اسئلة جزء أيض الفطريات في ورقة مستقلة

Assiut University	**Final exam of: Microbial Metabolism**
Faculty of Science	**Academic Year: 2014/2015**
Botany & Microbiology Dept.	**Semester: 2nd semester**
Date:16 /6/2015	**Time: 2 hours**
Course code: 392 B	**Total marks: 50 marks**

Section "Fungal Metabolism"

(A) Write on each of the following: (20 marks, 4 for each)

1- Glycolysis (EMP pathway)
2- Oxidative Phosphorylation by equations
3- Function of fungal sterols
4- β-oxidation of fatty acid
5- urea cycle

(B) Answer on each of the following with (X) or (√) only: (5 marks, one for each)

1- Roles of fungal sugar alcohol adaptation with heat and water stress ( )
2- Final electron acceptor in aerobic respiration is oxygen ( )
3- During fermentation only one ATP was produced ( )
4- Electron transport chain or (oxidative phosphorylation) take place in ( ) cytoplasm
5- **Citric acid cycle** is a series of compounds that transfer electrons from electron donors to electron acceptors *via* redox reactions ( )

Good luck

DR/ MAYSA M. A. ALI

Assiut University- Faculty of Science
Department of Botany & Microbiology

3rd level (Microbiology & Chemistry-Microbiology Students)
Mycology 2 (362 B) **Final ex.: 15/6/ 2015** **Time allowed: 2 hours**

Answer the following questions (the exam is in two pages) **(50 marks)**

I) Answer one only of the following: **(10 marks)**

a) Rust fungi may produce as many as five different stages in their life cycles. With drawing, explain this sentence?

b) Ascomata of Erysiphales are provided with appendages that vary in shapes and characters together with the number of asci which are the bases of generic separation. With drawing, discuss this statement?

II) With illustration explain 4 only of the following: **(16 marks)**

1) Formation of asci and ascospores through gametangial copulation.

2) *Aspergillius* groups that produce teleomorphs.

3) Types of asci and ascocarps in Euascomycetes.

4) Different criteria used in description of *Penicillium* species.

5) Clamp connection in Basidiomycota.

III) Compare in a table between 3 only of the following: **(9 marks)**

1) Families: *Pucciniaceae* and *Ustilaginaceae.*

2) Vegitative structure in rust and powdery mildew fungi.

3) Flowering and seedling infections in smut fungi.

4) *Aspergillus* groups related to strictly Uni- serriate and bi- serriate sterigmata.

من فضلك أنظر خلفة .....

Assiut University
Faculty of Science
Botany and Microbiology Department

Final Exam. 3rd Level of Botany ,Bot. No.312

Archegoniatae (Bryophyta,Pteridophyta ,.....)

June: 2015 .....Time allowed: 2hours

I-Answer the following questions with an Illustrated diagrams

1-Evolutianary criteria of Siphonosteles among Filicopsida....(15 mark)
2-Heterosporuos phenomenon in Lycopsida.....(15 mark)

II-Give an accounts (with illustrated diagrams) of TWO questions only of the following:.....(10 Marks each)

3-Development of Embryonic cells of *Marchantia,Anthoceros andFunaria*
4-Different types of sori in Ferns, with special focusing to the development and dihescence mechanism of their sporangia.
5-Evolutionary criteria of gametophytic generations in Jungermanniales

Good luck

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Prof.Dr. M.B. Mazen

Faculty of Science Botany and Microbiology Department	بسم الله الرحمن الرحيم	كلية العلوم قسم النبات والميكروبيولوجي
Phytosociology Time allowed: Two Hours (342B)	Second Term Examination 2014 - 2015 Third Year: Special Botany	

Answer the following questions

I- Write short notes on :.....(20 marks)

a) The minimal area and the sample stand requirements.
b) Factors affecting the number of species in the plant groups.
c) Life forms and the biological spectrum.
d) Raunkiaer law of frequency.

II- Compare between <u>THREE ONLY</u>: ..... (15 marks)

a) Abundance and Constancy.
b) Association and Sociability.
c) Presence and Fidelity.
d) Denuded and Clip quadrates.

III- Give the ecological importance of <u>THREE ONLY</u> :(15 marks)

a) Fidelity and characteristic species.
b) Ecological amplitude.
c) Frequency diagram as a test for homogeneity in the plant community.
d) Stratification.

GOOD LUCK

Prof. Dr. F.M.Salama

	Final Term Examination **2014/2015**	
Botany & Microbiology Department	**Plant Biochemistry (352 B)** **Third Level (Credit hours)**	**Time: 2 hours**
Date: 13/6/2015		**Total marks: 50**

Answer the following questions:

Question (1):Give an account on three of the following: **(12 marks)**

a- Photorespiration
b- Noncyclic photophosphorylation
c- Ultra structure of chloroplast
d- Synthesis of Aspartic acid from glucose

Question (2):Write short notes on three of the following: **(9 marks)**

a- C_4 plants
b- Oxidative phosphorylation
c- Photosynthetic pigments
d- Alcoholic Fermentation

Question (3): Define four of the following: **(4 marks)**

a- Quantum yield
b- Red drop
c- Qantasomes
d- ATP-synthase
e- Rubisco

Question (4): **(13 marks)**

a- Write notes on three of the following: **(6 marks)**

1- Nitrogen cycle in nature
2- Nitrate reductase
3- Transamination
4- Leghemoglobin

b- Write on: **(7 marks)**

1- How are nitrites converted to ammonia
2- Glycerol Biosynthesis

Question (5): **(12 marks)**

a- Explain clearly three of the following : **(9 marks)**

1- Draw β-oxidation pathway
2- Ammonium or nitrate can be toxic
3- The mechanism of biological nitrogen fixation in root nodules of leguminous
4- pH and Ionic balance during nitrogen assimilation

b- Define: **(3 marks)**

Nitrification – Symbiosis - Oil

Best Wishes **Dr. Abeer Radi** **Dr. Fatma Farghaly**

Assiut University
Faculty of Science
Botany & Microbiology Dept.
Date: 8/6/2015
Course code: 396 B

Final exam of: Industrial Microbiology
Academic Year: 2014/2015
Semester: 2nd semester
Time: 2 hours
Total marks: 50 marks

A- Give short account on six only of the following: (30 marks, 5 for each)

1-Secondary screening and classification of antibiotics according to their mode of action
2-Production of baker yeast with special reference to fresh bakers yeast
3-Mechanism of ethanol fermentation according to Newberg's scheme
4-Sources and characters of industrial microbes
5-Properties of penicillin
6-Mechanism of citric acid formation and its importance
7-Types of fermentation process

B- Complete the following: (8 marks)

1- Active dry yeast contains .....moisture and food yeast contain .....proteins
2- Producing microbe of acetone butanol is .....while lycine producing microbe is .....
3- Glycerol produced by ..... and .....processes
4- Fermentation strategy of gluconic acid is ..... and during fermentation ..... is added to control pH at 5.5

C- Identify each of the following:(12 marks, 3 for each)

1- The inoculum (starter)
2- Industrial biotechnology
3- Down stream processing
4- Metabioses

Good luck

DR/ MAYSA M. A. ALI