أجب عن أربعة فقط من الأسئلة التالية:-

السؤال الأول: (١٢,٥ درجة)

في احدى العشائر كانت أعداد الطرز الوراثية لموقع ما كما يلي:

$AA = 400$ $Aa = 400$ $aa = 200$

١- احسب التكرارت الاليلية ثم اختبر اتزان العشيرة.

٢- احسب قيمة f العشائرية ، وحدد طراز التزاوج الشائع بالعشيرة.

السؤال الثاني: (١٢,٥ درجة)

في كل سنة يهاجر 5 أفراد من عشيرة أرضية إلى جزيرة بالمحيط حيث يتزاوجوا مع 95 من أفراد الجزيرة

إذا كان تكرار الأليل A بين الأفراد المهاجرة 0.15 ، وبين أفراد الجزيرة 0.8

١- ماهو التكرار المتوقع لهذا الأليل بعد جيل من التزاوج العشوائي ؟

٢- كم عدد أجيال الهجرة التي تمت إذا تغير التكرار الأليلي في الجزيرة من 0.8 إلى 0.383 ؟

السؤال الثالث: (١٢,٥ درجة)

في عشيرة أوربية إذا كانت تكرارات الأفراد لمجاميع الدم ABO كما يلي:

	AB	B	A	O	المجموعة
التكرار	0.04	0.15	0.32	0.49	

احسب تكرارات الاليلات i , I^B , I^A .

السؤال الرابع: (١٢,٥ درجة)

إذا كانت التكرارات الأليلية لاحد الأليلات المرتبطة بالجنس في جيل الآباء لاحدى العشائر كما يلي :

الإناث		الذكور	
$r_A = 0.88$	$s_a = 0.12$	$q_a = 0.60$	$p_A = 0.40$ G_0

احسب التكرارات الاليلية بعد جيل من التزاوج العشوائي ، وعند الإتزان

السؤال الخامس: (١٢,٥ درجة)

إذا كانت الصلاحية النسبية w للطراز $AA = 1$ ، وللطراز $Aa = 0.8$ ، وللطراز $aa = 0.5$

وإذا كانت التكرارات المبدئية للطرز الوراثية الثلاث كما يلي: $aa = 0.1$ $Aa = 0.3$ $AA = 0.6$

احسب تكرارات الطرز الوراثية بعد جيل من الانتخاب

انتهت الأسئلة – مع تمنياتنا بالتوفيق

د. محمد إبراهيم محمد

Faculty of Science Botany& Microbiology Department		كلية العلوم قسم النبات.والميكروبيولوجى
Food Microbiology(498B) Time: Two hours Total degree: 50marks	Second semester exam - the academic year 2014/2015 FourthLevel Exam date: Monday, 15/06/2015	

Answer <u>all</u> the following questions:

<u>The first question</u>: Write on each of the following: (20 marks, 5 for each)

1- The effect of water activity on microbial growth in Food

2- Why viruses considered as important microbes in food

3- Normal microbiological quality of vegetables, fruits and nuts

4- Benefit uses of microbes in foods

<u>The second question</u>: Answer on each of the following with (X) or (√) only: (5 marks, one for each)

1- Mayonnaise and salad dressings their microbial numbers should not exceed 10/g.

2- Suitable pH for fungal growth in foods is ranged from 1.5 to 9.0.

3- Streptococcus thermophilus, has been used in juice manufactory.

4- *Acetobacteraceti*, is used to produce lactic acid from alcohol.

5- Many microbes produce different types of flavor such as roasted nutty flavors by strains of *Bacillussubtilis* and *Lac. lactis*.

<u>The third question</u>: Write on **<u>three only</u>** of the following:**(9marks)**

a) Killing principle in food preservation
b) Control of microorganism in food by physical removal
c) General characteristics of food poisoning
d) *Staphylococcus aureus* in foodborne infection

<u>The fourth question</u>: Compare between **<u>each</u>** of the following:**(6marks)**

1. CAP and MAP
2. H_2O_2 and SO_2 as antimicrobial agents
3. Radurization and radappertization

باقى الأسئلة بالخلف

The fifth question: choose the correct answer: **(10 marks)**

1. The most common symptom of food-borne illness is:

(a) kidney failure (b) diarrhea (c) skin rash (d) headache

2. Which of the following groups has the lowest risk for food-borne illness?

(a) young adults (b) the elderly (c) infants (d) individuals with AIDS

3. One of the most common organisms from undercooked poultry and eggs is:

(a) Trichanella (b) Salmonella (c) Clostridium perfringens (d) Clostridium botulinum

4. The process of heating milk to kill pathogenic microorganisms is called:

(a) sterilization (b) pasteurization (c) irradiation (d) none of the above

5. HACCP is designed to detect food hazards in a food industry facility.

(a) true(b) false

6. The two parts of HACCP include:

(a) hazard analysis and critical control points

(b) health analysis and critical control points

(c) hazard analysis and critical conformation production

(d) health analysis and critical conformation production

7. Which of the following is a BAD food handling practice?

(a) storing cooked and fresh meat in the same container

(b) prompt refrigeration of fresh and cooked foods in separate containers

(c) thoroughly cooking poultry before eating

(d) cleaning cutting boards and knives thoroughly after using with fresh meat

8. How common are food spoilage microorganisms?

(a) They are exteremly rare (b) Almost none of our foods contain them

باقى الأسئلة بالصفحه التالية

(c) A few of our foods contain them (d) Almost all of our foods contain them

9. By keeping food cold the growth of microorganisms is

(a) Increases (b) Not changed (c) Minimized (d) Stopped and they are killed

10. Sodium nitrite is responsible for

(a) protecting against botulism (b) reducing rate of spoilage.

(c) maintenance of red color in meat (d) All of the above (e) None of the above

Good luck

Dr./AmalDanial

Dr./MaysaM.A. Ali

Faculty of Science Botany and Microbiology Department		كليه العلوم قسم النبات والميكروبيولوجي
Symbiosis Microbiology (B496) 2 hours 50 Marks		امتحان الفصل الدراسي الثاني العام الجامعي 2015/2014

Part I:Fungal Symbiosis

1. Write short notes on:(Answer 3 only) (9 marks)

   A. Vegetative reproduction in lichen.
   B. Ectomycorrhiza.
   C. Presymbiotic and symbiotic stages of AM fungi.
   D. Orichidmycorrhiza.
   E. Vesicles.

2. Discuss the function of the following: (Answer 3 only) (9 marks)

   A. Mantle.
   B. Monotropoidmycorrhiza.
   C. Asymbiotic stage of AM fungi.
   D. The fungal partner of lichen thallus.
   E. Ericoid mycorrhiza.

3. Differentiate between: (Answer 2 only) (7 marks)

   A. Apothecium and perithecium.
   B. Arum and paris type of arbuscules.
   C. Ectoendomycorrhiza and arbutoidmycorrhiza.
   D. Facultative and obligate mycorrhizal plants.

Part II: Bacterial Symbiosis

A. Answer only three questions. Use well labeled diagrams where appropriate. (4.5 Marks each)

1. Explain the symbiotic relationship of luminescent bacteria in fish and squid.
2. Compare between primary and secondary symbionts.
3. Illustrate the role of skin microflora in protection the host from pathogenic bacteria.
4. Discuss the structure of nitrogenase enzyme and the mechanism of nitrogen fixation in legumes.

ملحوظة: باقى الاسئلة بالخلف

B. Write short notes on only three points: (2.5 Marks each)

Nod factors - Leghemoglobin – Ti plasmid- uses of *Azolla*

C. Choose the right answer for only four questions: (1 Marks each)
Write the answer in the University Examination Answer Book provided.

1. The specific relationship between a legume and its mutualistic *Rhizobium* strain probably depends on

   a. each *Rhizobium* strain having a form of nitrogenase that works only in the appropriate legume host.
   b. each legume having a chemical dialogue with a fungus.
   c. specific recognition between the chemical signals and signal receptors of the *Rhizobium* strain and legume species.
   d. each legume being found where the soil has only the *Rhizobium* specific to that legume

2. The function of the bacterial endosymbionts in the trophosome of giant tube worms is to
   a. Fix carbon dioxide
   b. Produce oxygen
   c. Reduce hydrogen sulfide
   d. All of the above

3. Which of the following is TRUE of the *Buchnera aphidicola*-aphid mutualism?
   a. The bacteria are located in specialised insect cells called bacteriocytes
   b. Bacteria produce vitamins and amino acids
   c. The bacteria is obligate bacterial symbionts
   d. All of the above

4. Which of the following microbes are able to convert of atmospheric N_2 into organic forms?
   a. Staphylococcus epidermidis
   b. Lactobacillus spp.
   c. *Frankia*
   d. Candida sp
5. Which of the following is true of *Agrobacterium tumefaciens*?
   a. It is not capable of nitrogen fixation.
   b. It causes crown gall disease when it carries a tumor inducing (Ti) plasmid.
   c. It has been used to introduce foreign DNA into plant cells.
   d. All of the above are true of *Agrobacterium tumefaciens.*

With our Best Wishes

Dr. Nivien Allam *Dr. Shymaa Ryhan*

	Second - Term Examination 2014/2015	
Botany & Microbiology Department	**Microbial Ecology (B494)** **4th level (Microbiology)**	**Date: 9/6/2015** **Time: 2 hours**

I. Give short notes about 4 of the following: (12 marks)

1. Basic types of freshwater ecosystems
2. Positive microbial relationships
3. Contents of the soil
4. Different forms of aerosols
5. Three types of Autochthonous bacteria present in water habitats
6. Two examples of mycobiomes in healthy vagina and oral cavity

II. Put true (√) or false (x) with correction (10 marks)

1. Large aerosols can be absorbed by macrophages.
2. Biodegradation is a stage in Bioremediation process.
3. Benthic zone is a transient type of fresh water habitat for microorganisms.
4. Humus is composed only of fulvic and humic acids.
5. Biolaz is active method for detecting bioaersols in real time.
6. The same population may contain both positive and negative interactions.
7. Ferruginous bacteria are abundant in Mesosaprobic zone of lotic water.
8. *Glomus* is a mycorrhizal fungus, forming mantles upon the surface of plant roots.
9. The body contains microbial cells equal to the number of human cells.
10. Pneumonia is a disease caused by bacterial aersols.
11. *Thiobacillus* is used in sulfur oxidation, while *Desulfobacter* is used in sulfur reduction.
12. We can determine microorganisms passing through a defined area without altering their travel paths by using anisokinetic sampling technique.
13. Contamination by feathers and hair can be treated by keratinophilic microorganisms.

III. Choose the correct answer: (10 marks)

1. The narrow region of soil influenced by associated microorganisms and root secretion: a. Rhizoplane b. Root- free soil c. Rhizosphere
2. The predominant fungus in water habitat:

(CC)

a. *Aspergillus* b. *Leptomitus* c. *Penicillium*

3. The unfavourable environment for microorganisms:
   a. Water b. Air c. Plant roots
4. Soil air contains: a. Water b. Nitrogen c. Humus
5. Example of transporting bacteria in water:
   a. *Pseudomonas* b. Archaebacteria c. *Vibrio cholerae*
6. Native microorganisms used in bioremediation:
   a. Allochthonous b. Mycorrhiza c. Autochthonous
7. The organism that produces inhibitory substance against other organism is named: a. predator b. symbiont c. antagonism
8. The area of water located between high and low tides:
   a. Neritic zone b. Benthic zone c. Littoral zone
9. Moles are one of the soil .....
   a. Macrobiota b. Mesobiota c. Microbiota
10. Soil microorganisms decrease by increasing:
    a. Organic matters b. Depth c. Humidity

IV. Define 9 of the following scientific terms (18 marks)

1. Trophic index 2. PSB 3. Acid mine drainage 4. Zymogenous
5. Barophiles 6. Impactor 7. Bioterrorism 8. Arbuscules
9. Metalimnion 10. Biopile 11. Pleuston and Neustons 12. Cometabolism

مع أطيب تمنياتى بالتوفيق

د. نعمات عبدالجواد حسين

Faculty of Science Botany& Microbiology Department		كلية العلوم قسم النبات والميكروبيولوجى
Actenomycetes (472B) Time: two hours Degree exam: 50 degrees	Second semester exam - the academic year 2014/2015 Fourth Division - Faculty of Science Exam date: Friday, 05/06/2015	

Answer allthe following questions:

The first question: answer ten only of the following: **(15 degrees)**

1. **What is the major source of antibiotics in actinomycete?**
2. **How is *Corynebacteriumdiphtheriae* diagnosed?**
3. **What bacterium causes actinomycosis?**
4. **What is the most major risk factor for nocardiosis?**
5. **Name 3 symptoms of actinomycosis**
6. **Could you get diphtheria from using an infected person's toothbrush?**
7. **How is actinomycosis treated?**
8. **What/who is the reservoir of *Corynebacteriumdiphtheriae*?**
9. **Give the genus name of an organism associated with nitrogen fixation**
10. **What are the symptoms of diphtheria?**
11. **Diphtheria can affect the nerves in the body?**

The second question:choose the correct answer of the following:(5 degrees)

1) **Which of the following is NOT associated with Corynebacterium?**

a)palisadesb) Gram-negativec) binary fission d) diphtheriae) snapping division

2) Which of the following groups of bacteria is named for its resemblance to fungi?

a) *Corynebacterium*b) *Actinomyces*c) *Clostridium* d) *Lactobacilluse*) *Staphylococcus*

3) Which of the following is NOT associated with bacteria in the genus Streptomyces?

a) the "musty" smell of soilb) nutrient recycling in soil c) antibiotic production d) microbial antagonism e) protection of plants against caterpillars

اقلب الصفحه من فضلك

4) The genus Mycobacterium includes species responsible for

a) tuberculosis b) urinary tract infections

c) food poisoning from contaminated dairy products.

d) gastric ulcers e) food poisoning from rice.

The third question: Write short notes about five only of the following: (20 degrees)

a) Pulmonary actinomycosis
b) Morphology and epidemiology of *Nocardia*
c) General features of *Streptomyces*
d) Mode of action of chloramphenicol
e) Importance of vesicles in *Frankia*
f) The relation between Nitrogenase and O_2accowrding to Silvester and Tjepkea

The fourth question:definefive only of the following: (10 degrees)

Cord factor- DOTS- Ivermectin- Mycosides- Coryneformms- Streptomycin

Good luck

Dr.AmalDanial