	Tanta UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY			
	EXAMINATION for Seniors (<u>Fourth Level</u>) students of <u>Special Botany</u>			
	COURSE TITLE:	Nitrogen Metabolism		COURSE CODE: BO 4218
DATE: 17/6/2015	JUNE, 2015	<u>FINAL EXAM</u>	MARKS: 100	TIME: 2 HOURS.

I- Define each of the following (20 Marks)

- a- Globulins and Glutelins b- Gel filtration
 c- Atmospheric deposition d- β -helix structure of protein



II- Complete the following (30 Marks)

- 1- The effects of the anoxic conditions on nitrate absorption are (6 Marks)
 2- The charges on the amino acids are important because (6 Marks)
 3- The toxicity of ammonium is due to (6 Marks)
 4- The key factor in the nitrification process is.....because..... (6 Marks)
 5- The charges on the amino acids are important due to (6 Marks)

III- Write on the following (50 Marks)

- 1- Absorption of nitrate and ammonia (10 Marks)
 2- The disadvantages of nitrate and ammonium nutrition (10 Marks)
 3- Classification of amino acids and their biosynthesis by transamination (10 Marks)
 4- The main pathway of ammonium and nitrate assimilation (10 Marks)
 5- Classify the protein on the basis of a- function b- structure c- shape (10 Marks)

EXAMINER	PROF.DR./ WEDAD ABD EL-AZIZ KASIM
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	TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY			
	EXAMINATION FOR FRESHMEN (FOURTH YEAR) STUDENTS OF BOTANY			
COURSE TITLE:	ECONOMIC USES OF ALGAE		COURSE CODE: BO4210	
DATE: 8/6/2015	JUNE, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

I - Choose the correct answer:-

(20 Marks)

- 1- Kombu is the Japanese name for the dried seaweed that is derived from a Mixture of
a) *Jania* sp. b) *Laminaria* sp. c) *Ulva* sp. d) *Porphyra* sp.
- 2 -The low quality agar is used in
a) Food product b) culture media c) electrophoresis d) a+b
- 3-The algae harvested from treatment ponds are widely used in.....
a) Nitrogen and phosphorus supplement b) Agriculture purpose c) Biodiesel d) All
- 4-Halogenated compounds are produced naturally mainly by marine
a) Red algae b) green algae c) Brown algae d) a+c
- 5- In making biodiesel, transesterification is catalyzed by
a) acids b) alkalis c) lipase enzyme d) All previous
- 6- The most highly purified agar called.....
a) Agarophytes b) Agaropictin c) Agarose d) None
- 7- Natural algaecides could effectively be applied in
a) Water treatment b) algalization c) control of toxic algal blooms d) a+b
- 8- The anti-HSV factor from *Dunaliella* sp. inactivates the viral function at
a) Stage II b) Stage III c) a+b d) Stage I
- 9- The metal ions are adsorbed over the cell surface very quickly just in a few seconds or minutes; this process is called.....
a) chemisorptions b) Rapid uptake c) Adsorption d) All previous
- 10-The Soil microorganisms commonly aggregate soil particles to form
a) Organic matter b) Soil crust c) Soil algae d) a+c



II- Put sign (✓) front the correct answer and sign (X) front the wrong answer and correct the wrong answer:-

(20 marks)

- 1 - Fertilizers only supply nutrient to the soil but soil conditioner enhances the physical, chemical and biological health of soil. ().
- 2 - Algae cannot directly produce HUFAs such as arachidonic acid (ARA, 20:4n-6) like terrestrial crops. ().
- 3 - Agar are more widely used than Carrageenans as emulsers/ stabilizers in numerous foods, especially milk-based products. ().
- 4- Artificial diets have natural sources of pigments that give organisms such as salmon their coloration ().
- 5- Laminarin is one of the major polysaccharides found in red algae with antiviral and antibacterial properties ().
- 6- Alginate made up of mannuronic acid and guluronic acid and extracted from Phaeophyceae ().

من فضلك انظر خلف الصفحة

بنا

 كلية العلوم	Tanta University - Faculty of Science - Botany Department			
	Examination for 4 th Level Students of Botany			
	COURSE TITLE	إدارة البيئة ودراسات الجدوى البيئية	COURSE CODE	
June 2015	TERM: second	Total Assessment Marks: 100	TIME ALLOWED: 2 HOURS	

السؤال الأول (25 درجة)

- 1- عرف عملية تقييم الأثر البيئي؟
- 2- ماهي أهم فوائد تقييم الأثر البيئي؟
- 3- وضح الفرق بين قوائم مجموعات المشروعات من الفئات أ، ب، ج؟
- 4- أعط مثال لإحدى الصناعات البترولية التي تنتمي لكل من القوائم أ، ب، ج؟
- 5- ما المقصود بإجراءات التخفيف التي يجب أن يشتمل عليها تقرير تقييم الأثر البيئي؟

السؤال الثاني (25 درجة): عرف كل مما يلي:

1- نظام الإدارة البيئية؟

2- الآثار البيئية؟

3- الأداء البيئي؟

4- مؤشر الحالة البيئية؟

5- خطة الإدارة البيئية؟

السؤال الثالث (25 درجة)

أشرح باختصار محتويات دراسة تقييم الأثر البيئي؟

السؤال الرابع (25 درجة)

التنوع الحيوي الطبيعي (النباتات والحيوانات والكانتلت الدقيقة) هو جزء هام من الثروة الطبيعية لأي بلد، وضح كيف يمكن الحفاظ عليه من خلال دراسات تقييم الأثر البيئي؟

الممتحن: ا. د. كمال شلتوت

4- Choose one answer:-

(30 mark)

- a- Psychrophilic fungi can grow over the range 20-50°C (maximum 58°C) with optima above 40°C.
True False
- b- Mutation : The change that would occur in the genetic materials as a result of exposure to extreme condition.
True False
- c- Turbidimetric method considers way to culturing fungi
True False
- d- There are only two degree of requirements for fungal growth, Minimum requirements and Maximum requirements
True False
- e- Lyophilization is preservation of fungi by drying under vacuum from the frozen state by sublimation of ice.
True False
- f- The chemical composition of the wall differs greatly between taxonomic groups of fungi.
True False
- g- Autolysis this means, the cells of organism is dying due to the toxic compounds that appear in the media.
True False
- h- In stationary phase the number of fungal cells is in maximum.
True False
- i- polysaccharides appear to play a decisive role in wilt diseases of vascular plants.
True False
- j- A pronounced fall in pH of ammonium nitrate medium during the growth of fungi is common.
True False

With our best wishes

Prof. Dr. Alaa Mostafa Abou-Zeid- Prof. Dr. Mahmoud Abo-El-Yazed-

Dr. Jehan Esmail

Question No 4

(20 marks)

Complete the following:-

- Inbreeding is
- Populations arethat change from one generation to the next.
- Allozymes are
- Is simple mathematical expression that relates genotype and allele frequency.
- Inbreeding path is thethat includes both..... and.....
- Factors that change allele frequency in a population are , , and
- Gene flow is
- Conglomerate population is , while the donar population is

Best wishes

Prof Dr: Hanan I Sayed Ahmed

بالتوفيق



TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF BOTANY

EXAMINATION FOR SENIORS (FOURTH YEAR) BOTANY SPECIAL STUDENTS

COURSE TITLE:	Biotechnology and Plant Breeding		COURSE CODE: BO4204
DATE:	27 MAY, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 150
			TIME ALLOWED: 2 HOURS

ANSWER THE FOLLOWING QUESTIONS

1. Plant breeding is very important to human, explain why? (20 Marks)

2. Complete the following statements (45 Marks)

- a. Genetic linkage occurs when or for a gene are
- b. Isozymes markers are
- c. The phenotype is the product of and
- d. On the basis of genetic characteristics, molecular markers are grouped into and
- e. Three ways in which genetic variability originates in nature , and
- f. Plant breeding is the product often used synonymously with
- g. Genetic markers are simply on chromosomes and can be detected at both level and or
- h. Genomics may be categorized into and

3. Write short notes on the following (48 Marks)

- a. Antisense technology.
- b. Types of RFLP polymorphisms.
- c. Transposable elements as a cause of genetic variation.
- d. Concept of polymorphism and origin of molecular markers.



4. Compare between the following (37 Marks)

- a. Genetic variability and genetic recombination.
- b. Microsatellites and inter simple sequence repeats (ISSRs).
- c. Genetic mapping and physical mapping.

Good luck

EXAMINERS	DR. REDA GAAFAR	
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بنايه ماله بنات

 كلية العلوم	Tanta University - Faculty of Science - Botany Department			
	Examination for 4 th Level Students of Botany & Chemistry-Botany			
	COURSE TITLE	المجتمع النباتى	COURSE CODE	
June 2015	TERM: second	Total Assessment Marks:	TIME ALLOWED: 2 HOURS	

السؤال الأول (25 درجة)

- 1- ما الفرق بين الفلورة والكساء الخضرى؟
- 2- قارن بين الجماعة (Population) والمجتمع النباتى (Community)؟
- 3- ما المقصود بالمجتمع النباتى العينى والمجتمع النباتى التجريدى؟
- 4- أذكر الفرق بين كل من المفهومين الأمريكى والأوروبى للتكوين النباتى؟
- 5- يجب أن يفى الموقع المختار لدراسة الكساء الخضرى بأربعة خصائص، ما هى؟

السؤال الثانى (25 درجة)

إشرح بإيجار كيفية استخدام المقارنة الجدولية كإحدى طرائق تقسيم مواقع الكساء الخضرى فى منطقة ما؟



السؤال الثالث (25 درجة) - عرف ما يلى:

- 1- المساحة الصغرى للمجتمع النباتى
- 2- التنوع النباتى
- 3- التأثير الحافى للأطر المساحية
- 4- العائد النوعى
- 5- النبات وحيد المسكن الطلعى

السؤال الرابع (25 درجة) - قارن بين كل من:

- 1- التردد و التواجد كصفتين من صفات المجتمع النباتى؟
- 2- النباتات نصف المختفية والنباتات المختفية
- 3- شكلى الإنتثار البوغى والتقىيل
- 4- النبات الخنثى والنبات وحيد المسكن
- 5- النباتات الظاهرة والنباتات الحولية

الممتحن: دكتور كمال حسين شلتوت

	TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY			
	EXAMINATION FOR FRESHMEN (FOURTH YEAR) STUDENTS OF BOTANY			
	COURSE TITLE:	ECONOMIC USES OF ALGAE		
DATE: 8/6/2015	JUNE, 2015	TERM: SECOND	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

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(20 Marks)

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- 6- Alginate made up of mannuronic acid and guluronic acid and extracted from Phaeophyceae ().

من فضلك انظر خلف الصفحة

8. Transcripts profiling in a microarray experiment means all of the following except
- Address gene expression associated with metabolic changes.
 - Defining the transcription factors bind with promoter region.
 - Expression differences between normal and stressed cells.
 - Defining cell type.
9. In yeast-two hybrid system , we must clone the prey library in plasmid
- Gal4-DBD
 - Gal4-AD
 - p^{GEM}
 - All the above
10. False positive problem associated with yeast hybrid system can be overcome by
- Screening for the expression of two or more different reporter.
 - Harsh wash.
 - Using alternative screening system.
 - All the above.

II. *WUSCHEL (WUS)* gene is identified and well characterized in *Arabidopsis thaliana* plant (Brassicacea). You want to isolate *WUS* gene from water cress plant (Brassicacea). (30 Marks)

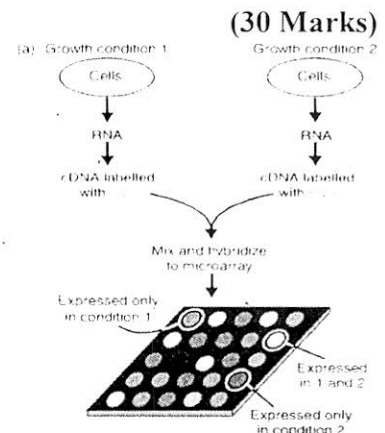
- Explain a method to isolate this gene from water cress plant. (10 Marks)
- How do you functional characterize *WUS* gene isolated from water cress? (10 Marks)
- If you know that *WUS* protein, which has DNA-binding domain, is a transcription factor, explain a tool by which you may use to identify the DNA regions in water cress genome has ability to bind with *WUS* protein. (10 Marks)

III. Check (✓) or (x) for the following sentences: (10 Marks, 2 Marks for each point)

- If the DNA within the clone is not expressed, then the gene can be identified on the basis of DNA sequence alone must be preformed. ()
- Screening relies on a unique property of a clone library. ()
- The basis for interaction screening in yeast-two hybrid relies on eliciting transcription activator. ()
- Changes in the number and magnitude of genes expressed by cells in different conditions can give vital clues to cellular response. ()
- Antibodies are glycoproteins composed of subunits containing three identical light chains and two identical heavy chains. ()

IV. Have a look to the following cartoon and answer the questions:

- What is this tool? (5 Marks)
- Explain how to use it? (10 Marks)
- How do you identify a unique expressed gene in each condition? (5 Marks)
- How do you identify the differential expressed genes? (5 Marks)
- What is the condition at which you can switch to differential display instead of this technique? (5 Marks)



V. Write shorts notes on the following terms (only four): (10 Marks, 2.5 Marks for each point)

- 1- Transcriptme.
- 2- Proteome.
- 3- RNAi.
- 4- Antisense.
- 5- Reverse two hybrid.
- 6- Defining cell type.

With all my best wishes

EXAMINERS	PROF. DR. ALAA ABU-ZAID	DR. MOHAMED A. ELHITI
	PROF. DR. NASSER SWALLEM	