


TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY				
EXAMINATION FOR FRESHMEN (THIRD YEAR) STUDENTS OF BOTANY				
	COURSE TITLE:	PHYSIOLOGY OF ALGAE		COURSE CODE: BO3113
DATE:	DECEMBER, 2016	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

I - Choose the correct answer:-

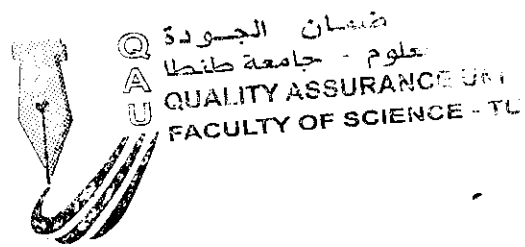
(20 Marks)

- 1- The pigment in the red algae which helps to absorb blue-green region of the spectrum reaching the greatest depth in water.....
 a) Phycoerythrin b) Phycochloroin c) Phycocyanin d) None
- 2 - Leucosin is reserve food found in.....
 a) Crystophyta b) Rhodophyta c) Phaeophyta and Chlorophyta d) a+b
- 3-The phycobilins pigments are found in the spaces between the thylakoids in.....
 a) Cyanophyta b) Cryptophyta c) Phaeophyta d) b+c
- 4- Culture allows control over illumination, temperature, nutrient level, contamination with predators and competing algae.....
 a) Outdoors b) Indoors c) Open pond d) Axenic
- 5- Element required for ribosomal stability and photosynthetic pigment.....
 a) Molybdenum b) Copper c) Iron d) Magnesium
- 6- The process of nitrogen fixation dependent on.....
 a) Salinity b) Light c) Temperature d) a+c
- 7- Which of the following algal divisions is characterized by possession of chlorophylls a, b, and starch as the energy storage material.....
 a) Chrysophyta b) Chlorophyta c) Phaeophyta d) a+b
- 8- This is a form of nutrition where light is required to use organic carbon sources for growth. It is relatively rare in the algae.....
 a) Mixotrophy b) Photolithotrophy c) Photoheterotrophy d) Heterotrophy
- 9- The length of exponential phase in cultures depends upon.....
 a) Size of inoculum b) Volume of the medium c) Culture conditions d) All previous
- 10-The thylakoids are arranged in much the same manner in higher plants in.....
 a) Chlorophyta b) Rhodophyta c) Cyanophyta d) b+c

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

(20 marks)

- 1 - Heterocystous cyanobacteria lack photosystem I so that there is no photosynthetic evolution of Oxygen. ()
- 2 - In Chlorophyceae and Phaeophyceae chloroplasts are enveloped by two parallel membranes. ()
- 3- The chloroplast is a discrete cell organelle which represents in the photosynthetic apparatus of eukaryotic cells. ()
- 4- All nitrogen fixing organism are eukaryotic. ()
- 5- The inflow rate of fresh medium introduced into the chemostat culture is fixed. ()
- 6- Iron is required for nitrogen assimilation, in photosynthesis and for the synthesis of cytochromes. ()





TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF BOTANY

EXAMINATION FOR JUNIORS (THIRD YEAR) BOTANY STUDENTS

COURSE TITLE:	Molecular Biology		COURSE CODE: BO3103
DATE:	31 DEC., 2016	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100
			TIME ALLOWED: 2 HOURS

ANSWER THE FOLLOWING QUESTIONS

1. Indicate whether each of the following statements is true (T) or false (F) and correct the false ones: **(27 Marks)**

- Degenerate primers are derived from RNA sequence ().
- PCR can only be applied if some sequence information is known ().
- SDS confers the polypeptide chain a uniform positive charge ().
- Normally, proteins can be visualized with a bromophenol stain ().
- Nucleotides are linked by 3' to 5' phosphodiester bridges ().
- The sum of the purine residues higher than the sum of the pyrimidine residues ().
- In eukaryotic cells, about 5% of adenine residues in DNA are methylated to 5-mA ().
- Nested PCR is aimed at reducing product contamination due to the amplification of unintended primer binding sites ().
- Proteomics is concerned with the identification of the full set of proteins ().

2. Complete each of the following: **(25 Marks)**

- The name of the bond that links the nitrogen base and the ribose sugar in a nucleotide is -----.
- Stacked minibands form -----.
- The beadlike unit of chromatin structure is the -----.
- In a covalently closed circular DNA, the total number of turns is a constant and called -----.
- Bending or twisting of the axis around both strands of the DNA coil is referred to -----.
- Restriction nucleases cleave DNA at -----.
- permits a partial assembly of large genome sequence.
- A DNA sequencing method that use enzyme to amplify a DNA copies is called -----.
- In eukaryotic cells, chromatin is the complex of -----, ----- and -----.
- Any source of DNA that provides one or more target molecules is -----.
- Purines and pyrimidines are nitrogen-containing-----.

Please Turn Over the Page





TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY			
FINAL EXAMINATION FOR THE THIRD YEAR (SPECIAL MICROBIOLOGY AND BOTANY)			
COURSE TITLE	APPLIED MICROBIOLOGY		COURSE CODE: MB3113
DATE: 4/1/2017	JANUARY 2017	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS



The exam is comprised of 3 pages

Answer the following questions

QUESTION 1. GIVE REASON (S) (30 MARKS)

- 1- Priority of enzymes as biological detergent.
- 2- Bacteria protease is more favorable than fungal protease for dehairing of goat skins in the tannery.
- 3- The need to produce lactose-free milk
- 4- The partial neutralization of the free itaconic acid during fermentation process.
- 5- Enzymatic desizing is the most widely used method for the removal of starch.
- 6- Fungal α - amylase is superior to bacterial α - amylase in bread making.
- 7- Production of itaconic acid requires very low pH
- 8- Lime is added to the culture medium during citric acid recovery
- 9- All new enzyme preparations developed are of microbial origin.
- 10- Microbial proteases are used increasingly in cheese making as a substitute for natural rennet

QUESTION 2. Check \checkmark or X for the following sentences (20 marks)

1. Constitutive enzyme are produced in response to addition of a particular substance ()
2. Purity of the product depend on the nature of Use ()
3. Production of citric acid requires a low pH ()
4. The main precursors for the production of Penicillin G is phenylacetic acid ()
5. Active penicillin production is associated with lactose and ammonia utilization ()
6. The use of immobilized enzymes is an alternative method for penicillin production ()
7. Quality control of the product is determined by the cost and purity ()
8. Griseofulvin is one of beta- lactam antibiotics ()
9. Microbial fermentations are used to produce inorganic acids ()
10. The native penicillin is potent enough for clinical use ()
11. Penicillinase is an enzyme used commercially to produce semisynthetic penicillin ()
12. Overheating of fermenter during fermentation is controlled by cool air ()
13. A major ingredient of penicillin production media is Corn meal ()
14. Amino acid and nucleotides are Secondary metabolites ()
15. The composition of the fermentation medium must include Precursor ()
16. Primary metabolites have no obvious role in the lives of the organisms ()
17. Gluconic acid is used as a pharmaceutical to supply calcium to the body ()
18. Industrial microbiology, mainly depends on the fermentation phenomenon ()
19. Keeping the acquired characters over a long time called strain stability ()

15) Glucose isomerase is used as

- a) slimming food
- b) Analytical reagent
- c) Extraction of vegetable Oils
- d) all of these

16) Production of cephalosporin C was induced by

- a) Methionine
- b) Mycophenolate
- c) Cyclosporine
- d) all of these

17) The modified steroid is recovered from the medium by

- a) Extraction with solvent
- b) precipitation
- c) Centrifugation
- d) None of these

18) Secondary metabolites production is

- a) extremely specific
- b) Nonspecific
- c) specific
- d) None of these

19) Batch fermentation is also called

- a) Closed system
- b) Open system
- c) Fed-batch system
- d) none of these

20) Which one of the following organic acid is used to supply calcium to the body?

- A) gluconic acid
- b) Citric acid
- c) itaconic
- d) None of these

QUESTION 4. ENUMERATE THE FOLLOWING (20 MARKS)

1. Quality control of the production process should include check on
1, 2, 3, 4, 5,
2. Modern method of semisynthetic penicillin production involve
1, 2, 3,
3. The following biotransformation are obtained by microorganisms
1, 2, 3, 4, 5,
4. Application uses of Microbial steroid
1, 2, 3, 4,
5. The main factors to be considered during selection of microbial strain to produce enzymes
1, b, c,
6. Stages involved in the production of a desired products from microorganisms
1, 2, 3, 4, 5,
7. Different types of fermentation processes
1, 2, 3, 4, 5, 6,

QUESTION 5. COMPARE BETWEEN THE FOLLOWING (10 MARKS)

1. Crude and refined media
2. Primary and secondary metabolites

With my best wishes

EXAMINER	MOHAMED YASER BEDAIWY
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UNIVERSITY OF TANTA, FACULTY OF SCIENCE			
DEPARTMENT OF BOTANY			
FINAL EXAMINATION FOR (SOPHOMORES) Third YEAR STUDENTS SPECIAL PLANT			
COURSE TITLE: PLANT Cytogenetic and Evolution		COURSE CODE: 3105	
DATE : 16-1-2017	TERM: FRIST	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS

Answer the following questions:

Question 1:- Complete the following sentences: (25 marks)

- 1) - Pericentric inversion, While the Paracentric,
- 2) - Bivalent is While the crossing over is
- 3) - Reciprocal translocation is produced when and Shift occur when
- 4) - Centomeric index and Arm ratios
- 5) - Causes of mitotic abnormalities,,
- 6) - MPF is
- 7) - Function of plasma membrane,
- 8) - Significance of Mitosis,,
- 9) - Phaeoplastare In color and Contain the pigment that absorbs and transfer it to
- 10) - The satellites helps in while the centromere is help in

Question 2:- Discuss the following sentences (60 marks)

- 1- Endocytosis and Exocytosis in plasma membrane
- 2- Ultra-structure of cell wall
- 3- Internal and external checkpoint signals
- 4- Different type of Aneuploidy with drawing that

Question 3: Put (R) or (W) with correction if wrong (25marks)


- 1) - Ribosomes is microscopic organelles composed of DNA ()
- 2) - Tertiary cell wall is composed of xylem beside the pectic compounds ()
- 3) - Rough ER has important role in detoxification in the liver ()
- 4) - Cristae are infoldings in the mitochondria outer membrane. ()
- 5) - Formation of micro-bodies are takes place in mitochondria ()
- 6) - The lysosomes are supported to initiate the meiosis in the cell ()
- 7) - Thylakoids are closely packed at certain arms to form the granum. ()
- 8) - The respiratory enzymes are distributed among the outer and inner membrane of mitochondria ()
- 9) - Thylakoids membranes are sites for the dark reaction ()
- 10) - Heterochromatin is the genetically active type of chromatin ()
- 11) - Rhodoplasts are brown in color and contain phycoerythrin ()
- 12) - second prophase in meiosis can be subdivided into five sub-stages ()
- 13) - Autosomes is the rest of chromosome complement including the sex chromosome ()

Question 4:- Explain with drawing if possible the differences between (40 marks)

- 1- Deletion and Duplication
- 2- First and second anaphase in meiosis

With my best wishes

Marwa Hamouda

	Tanta University Faculty of Science Department of Botany			
	EXAMINATION for level 3 Students of Special Botany			
Course title:	Plant geography		Course Code:BO3109	
Date:	Jan 2017	Term: First	Total assessment Marks:50	Time ALLOWED:2 ours

ا- اكمل: (20 درجة)

- 1- من أهم أنواع مراكز مساحة التوزيع هي.....و.....و.....و.....و.....و.....
- 2- المبادئ 13 لدراسة الجغرافيا النباتية الدينامكية قد وضعها العلماء.....و.....و.....و.....و.....
- 3- العوامل التي تحدد درجة حرارة أي منطقة هي.....و.....و.....و.....و.....و.....
- 4- تقسم المناطق الحرارية علي حسب تقسيم كوين إلي.....و.....و.....و.....و.....و.....
- 5- تسمي أراضي الحشائش بأسماء عدة منها.....و.....و.....و.....و.....و.....

ب - اكتب في التالي: (15 درجة)



- 1- اذكر مميزات الوحدات التكاثرية التي تنتشر بواسطة الرياح. (5 درجات)
- 2- قارن بين المجتمع النباتي التندرا والشابارال. (5 درجات)
- 3- ماذا يقصد بالفعل المشترك. اذكر نتائج تأثير الفعل المشترك علي الكائنات الحية. (5 درجات)

ج - تكلم في ما يأتي: (15 درجة)

- 1- عند خط الاستواء درجة حرارة = 53.4 درجة مئوية احسب ارتفاع جبل يوجد عند خط عرض 62,5 درجة من خط الاستواء. ودرجة حرارة قمة الجبل = 11.9 درجة مئوية. (8 درجات)
- 2- تحتوي المياه علي العديد من المجتمعات النباتية. فما هي؟ اذكر ما يميز كل مجتمع من الغطاء النباتي. (7 درجات)

مع تحياتي بالتوفيق والنجاح



أستاذ المادة: أ.د. محمد أحمد البحيري

	Tanta University Faculty of Science Botany Department	
Theoretical exam.	Assessment = 100 marks.	Time allowed: 2 hours.
Course Title = Microbial enzymes.		Course code = MB 3109.
Microbiology special program.		Academic year: 2016/2017.
Juniors (Level: 3 – Semester: 1)		الإختبار فى ورقة واحدة. 11/1/2017.
يسمح للطلاب باستخدام الألوان الخشبية فى توضيح إجاباتهم.		

Answer the following questions, proved with equations, and labeled diagrams:	Mark
1- Illustrate how cells generate their own enzymes with unique genetic coding.	20 marks
2- Illustrate the diagrammatic biochip structure, advantages and its applications.	20 marks
3- How can the enzyme act to reduce the reaction activation energy?	20 marks
4- Illustrate the ideal fermenter structure for optimized microbial enzyme production.	20 marks
5- Discuss one of the applications of microbial enzymes in the industrial field; prove your idea with equations, and labeled diagrams.	20 marks
Total assessment of written exam	100 marks

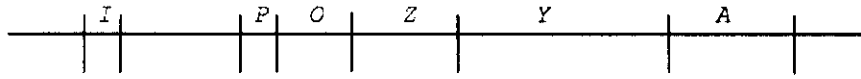
Best wishes..... Examiner:

Dr.: Anwer S.M, El-Badry.

	BOTANY DEPARTMENT - TANTA UNIVERSITY - FACULTY OF SCIENCE			
	Examination / Third level / Botany Special Students			
Course Title:	Regulation of Gene Expression		Course Code: BO3121	
14 January 2017	Term: First	Total assessment marks: 100	Time Allowed: 2 hours	

ANSWER THE FOLLOWING QUESTIONS

1. Which parts of the DNA region shown in the diagram encode proteins? Use the following diagram of the *lac I* gene and *lac* operon. (*I* = *lac* repressor gene; *Z*, *Y*, *A* = *lac* operon structural genes; *P* = *lac* promoter; *O* = *lac* operator) **(5 Marks)**



2. A regulator gene produces a repressor in an inducible operon. A geneticist isolates several constitutive mutations affecting this operon. Where might these constitutive mutations occur? How would the mutations cause the operon to be constitutive? **(20 Marks)**

3. Indicate whether each of the following statements is true (T) or false (F) and correct the false ones. **(30 Marks)**

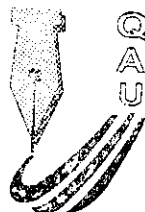
- a- The acetylation of histones usually reduces transcription. ()
- b- Arabidopsis flowering locus C plays an important role in suppressing flowering. ()
- c- DNA regions with many CpG sequences are called DNA landmarks. ()
- d- High rates of transcription are induced by metals in the presence of distant elements. ()
- e- Coordinately expressed genes in eukaryotic cells are not clustered. ()
- f- DNA methylation is not stably maintained through DNA replication. ()
- g- Chromatin-remodeling is altering chromatin structure by chemical modification of histones. ()
- h- In eukaryotic cells, gene regulation is characterized by a greater diversity of mechanisms. ()
- i- Binding of the cAMP-CAP complex to DNA produces a sharp bend in DNA that activates transcription. ()
- j- *lacP* mutations are trans acting and thus affect only genes on the same DNA molecule. ()

4. Compare between the following: **(20 Marks)**

- a. Negative and positive gene control in prokaryotes.
- b. Enhancers and insulators.



5. What is attenuation? What are the mechanisms by which the attenuator forms when tryptophan levels are high and the anti-terminator forms when tryptophan levels are low? **(25 Marks)**

With My Best Wishes



Prof. Dr. Reda Gaafar
 وحدة ضمان الجودة
 - جامعة طنطا
 QUALITY ASSURANCE UNIT
 FACULTY OF SCIENCE - TU

بنا

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY		
	EXAMINATION PAPER FOR 3 rd YEAR STUDENTS (SPECIAL BOTANY)		
	COURSE TITLE: Secondary Metabolites	CODE:BO3107	
DATE /1	JANUARY, 2017	TOTAL Assessment MARKS: 100	Time allowed: 2 h

Answer the following questions:

Question I: Answer the following. (46 marks)

- 1-Illustrate the biosynthetic pathways of phenolics. (26 marks)
- 2-The importance of terpenes and terpenoids. (10 marks)
- 3-Tabulate 5 classes of phenolic compounds, give examples. (10 marks)

Question II: (40 marks, each 20)

- 1- Give an account on properties, sources, pharmacology and function of alkaloids.
- 2- Classification of terpenes and their role in growth and development.


Question III: (14 marks, one each)

CHOOSE THE CORRECT PAIRS

- | | | |
|----------------------------------------------------------|--|---------------------------------|
| 1 Vitamin | | Symptom |
| a- Earliest deficiency of vitamin A | | i-rickets |
| b- Excess accumulation of vitamin A | | ii- night blindness |
| c- The main symptom of D deficiency in children leads to | | iii-Osteomalacia |
| d- Vitamin D deficiency in adults leads to | | iv- bone pain |
| 2 Deficiency of..... | | Leads to |
| a- Vitamin C | | i-appetite depression |
| b- Pantothenic acid (B5) | | ii-nervousness and depression |
| c- Vitamin B6 | | iii- dermatitis |
| d- Vitamin B1 | | iv-Scurvy |
| 3 Substance | | Occurrence |
| a- Vitamin B12 | | i-ergot fungus |
| b- Vitamin C | | ii-roasted coffee and smoke |
| c- Ergot alkaloids | | iii-fresh fruits and vegetables |
| d- Gualacol | | iv-Kidney and liver of animals |
| e- Gallic acid | | v-Carrot |
| f- Vitamin A | | vi-in galls |

Best wishes....
E. Hamada.
Office: 320

E. AboKassem.

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY		
	EXAMINATION FOR FRESHMEN (LEVEL THREE) STUDENTS OF SPECIAL BOTANY		
	COURSE TITLE:	PLANT GROWTH AND DEVELOPMENT	COURSE CODE: BO3101
DATE:	DATE: 21/1/2017	TERM: FIRST	TOTAL ASSESSMENT MARKS: 150
		TIME ALLOWED: 2 HOURS	

Answer the Following Questions:

First question: Complete the following (60 Marks, 2 marks for each)

- 1) The growing region of the plants is
- 2) Apical dominance in shoot occurs due to
- 3) Morphogenesis is defined as
- 4) Auxins were the first plant hormone discover by
- 5) Abscisic acid is acting as against, and.....
- 6) Lateral root primordial arise in
- 7) Phytochrome is
- 8) Flowering is an important phase because
- 9) Senescence is defined as if not reversed
- 10) Before verbalization, the seeds are allowed to
- 11) Typical plant consists of, and
- 12) Signal transduction is defined as
- 13) Fruit ripening is induced by hormone which is synthesized from
- 14) Vascular differentiation is induced by and hormone
- 15) Factors affecting the growth are
- 16) The complete development of a cells passed through,and
- 17) Photoperiodism is defined as
- 18) Seed dormancy may be due to, and
- 19) Farnesyl pyrophosphate is an intermediate in the biosynthesis of andhormones
- 20) All developmental stimuli shore the following sequence of signal, and.....
- 21) Before cytolysis conducting elements become and
- 22) Dormancy may be either or
- 23) Application of auxin to unpollinated flowers led to
- 24) The primary messenger in signal transduction is, while the secondary messengers are, and
- 25) On the basis of the day length, the plants are classified into, and
- 26) Bolting phenomenon is defined as
- 27) Fruit set is defined as and
- 28) The grand period of growth is
- 29) Plant hormones are
- 30) Growth rate is measured in terms of