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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY		
	EXAMINATION FOR (LEVEL THREE) STUDENTS OF CHEMISTRY/BOTANY		
DATE 26 /12	JANUARY, 2018	TOTAL ASSESSMENT MARKS: 150	CODE:BO3101 Time allowed:2 h

**First Group (75 marks)**

Answer the following questions:-

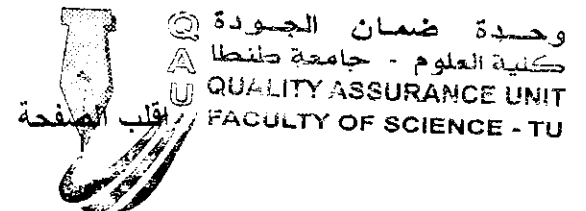
First question: Complete the following. (40 marks, two each)

- 1- Growth rate is measured in terms of ....., ....., .....
- 2- Growth rate increased due to utilization of .....
- 3- Water supply is necessary for growth because .....
- 4- Typical plant consists of ....., ..... and.....
- 5- The growing region of the plant is ..... and.....
- 6- Plant hormones are.....
- 7- Morphogenesis is defined as.....
- 8- Flowering is an important phase because.....
- 9- Photoperiodism is defined as.....
- 10-Vernalization is defined as.....
- 11-Fruit set is defined as.....
- 12-Seed dormancy may be due to .....,..... and.....
- 13-Application of auxin to unpollinated flower lead to.....
- 14-The growing plant is passed through several stages are .....,.....and.....
- 15-Signal perception required.....
- 16-Second messengers include .....,.....,..... and.....
- 17-Signal transduction consists of .....
- 18-Calmodulin is .....
- 19-Flowering of long-day plants require .....
- 20-Phytochrome is.....



Second question: Give brief accounts on three of the following. (35 marks)

- a- Mention the types of growth and illustrate the initiation of lateral roots.
- b- Illustrate the leaf senescence and its abscission.
- c- Mention the phases occur during the germination of the seeds.
- d- Illustrate the process of vernalization.

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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY			
	EXAMINATION FOR (LEVEL THREE) STUDENTS OF CHEMISTRY/BOTANY			
COURSE TITLE: PLANT GROWTH AND DEVELOPMENT		TOTAL ASSESSMENT MARKS: 150		CODE:BO3101
DATE 26 /12	JANUARY, 2018			Time allowed:2 h

**First Group (75 marks)**

Answer the following questions:-


First question: Complete the following. (40 marks, two each)

- 1- Growth rate is measured in terms of ....., ....., .....
- 2- Growth rate increased due to utilization of .....
- 3- Water supply is necessary for growth because .....
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- 5- The growing region of the plant is ..... and.....
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- a- Mention the types of growth and illustrate the initiation of lateral roots.
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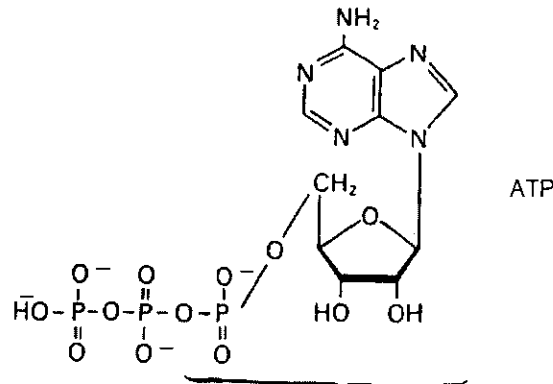
Turn the paper. اقلب الصفحة

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY		
	EXAMINATION FOR JUNIORS (THIRD YEAR) BOTANY STUDENTS		
COURSE TITLE:	Plant Molecular Biology		COURSE CODE: BO3103
DATE:	28 DEC., 2017	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100 TIME ALLOWED: 2 HOURS

**ANSWER THE FOLLOWING QUESTIONS**

1. Below is the structure of a building unit of nucleic acids

**(16 Marks)**



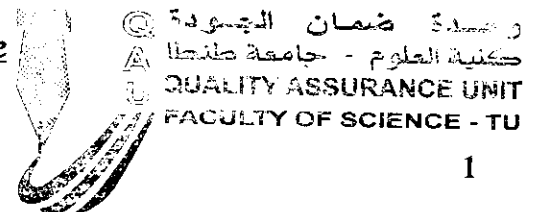
- Box the part that is added to a growing chain of nucleic acid.
- Star the atom(s) that can form a hydrogen bond with the complementary nitrogenous base.
- Circle the part of the unit that decreases the stability of RNA as compared to DNA.
- Draw an arrow to the part of this unit that you would modify to prevent further elongation. Indicate what change you would make next to the arrow drawn.

2. Complete each of the following:



**(34 Marks)**

- Prokaryotic DNA is organized into a DNA-protein complex called the -----.
- 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 -----  
-----.

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	<b>TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY</b>			
	<b>FINAL EXAM FOR THE THIRD YEAR STUDENTS (SPECIAL PLANT)</b>			
	<b>COURSE TITLE</b>	<b>PLANT CYTOGENETICS AND EVOLUTION</b>	<b>COURSE CODE: BO3105</b>	
	<b>JUN., 2018</b>	<b>TOTAL ASSESSMENT MARKS: 150</b>	<b>TIME ALLOWED: 2 HRS</b>	

**Answer the following questions:**

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

- 1) - The satellites are ..... help in.....
- 2) -Non-disjunctionis ..... While the crossing over is.....
- 3) -The basis that explained appearance of lagging chromosome may be is ..... and .....
- 4) - The normal sequence of mitotic division refer to .....
- 5) -The free end without telomere become..... and may be ..... with other broken chromosome, causes .....
- 6) - Significance of Meiosis.....and.....
- 7) -.....ER has important role in detoxification in the.....
- 8) -The five functions of Golgi complex,.....,.....,.....and.....
- 9) -Peroxisomes which resemble .....in morphology, produce ..... that generate ..... which is toxic to the cell, and produce .....that destroyed it
- 10) - Secondary constriction associated with .....and represent the point of .....

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

- 1- The important of the chromosome theory of heredity
- 2- The chromosomal abnormalities during telophase with drawing that
- 3- The function Endoplasmic reticulum
- 4- The proposal of the nucleosome model by Roger Kornberg.
- 5- The role of Lysosomes in celldisease

**Question 3: Put (R) or (W) with correction if wrong (20marks)**

- 1) -C. Bridges who provedthat the transmission of certain genes was related tothe transmission of the X chromosome ( )
- 2) -Crossing over exchange usually takes place between two non- sister chromosomes at specific point along the length of homologous pair ( )
- 3) -The threads of the chromosomes show to have beadlike structures known as chromonemata ( )
- 4) -The plasma membrane form the new nuclear envelop after cell division. ( )
- 5) -Golgi complex consists of two types of membranous compartments. ( )
- 6) -Nicolson (1927) was supposed the cell membrane as a mosaic of Lipid and protein ( )
- 7) -Rhodoplasts are red in color and contain fucoxanthin ( )
- 8) - The Cyclins are the only regulatory proteins control in the cell cycle. ( )
- 9) - The interphase divided into five sub-phases ( )
- 10) -Density dependent inhibitions are internal signal while growth factors protein is external ( )

**Question 4:- definition that with drawing if possible (45 marks)**

- 1-Plasmodesmata.2- Energy house of the cell
- 3- Crossing over4-Diakinesis
- 5- Spore tetrad


*Best wishes*  
**Examiner committee:**  
**Prof. Dr. Ashraf Haider**  
**Dr. MarwaHamouda**

TANTA UNIVERSITY FACULTY OF SCIENCE BOTANY DEPARTMENT		FINAL EXAMINATION / Credit hour system / 3 <sup>rd</sup> year Special Botany	
Course Title: Plant enzymology		Course Code: 3111	
DATE: 2 January 2018	Term: 1 <sup>st</sup>	Total assessment marks: 50	Time Allowed: 2 hour

**A- Choose the correct answer for each of the following:- (10 Marks)**

- 1- Organic catalyst is similar to inorganic catalyst that change the rate of reaction without affects in the reaction equilibrium and not affected by this reaction is:-  
a- enzymes.      b- isoenzyme.      c- isozymes.      d- all of them.
- 2- A site on enzyme molecule responsible for the substrate specificity and also for inhibition of the activity.  
a- Terminal group.      b- active site.      c- allosteric site.      d- all of the above.
- 3- A group of enzymes remove a group of atoms from the substrate leaving a double bond or add the group to the double bond in the substrate.  
a- Hydrolases enzymes.      b- Isomerases enzymes.  
c- Lyses enzymes.      d- Ligases enzymes.
- 4- A group of enzymes which brings about the conversion of a substance molecule into different structure through rearrangement.  
a- Hydrolases enzyme.      b- Isomerase enzyme.  
c- Transferase enzymes.      d- Lyses enzymes.
- 5- Type of enzymes, remove hydrogen through oxidation from the substrate.  
a- Peroxidase enzyme      b- Oxidase enzyme.  
c- Dehydrogenase enzyme.      d- Reductase enzyme.
- 6- A group of enzymes catalyses the interconversion of aldose sugar to ketose sugar.  
a- Carbohydrases enzymes.      b- Hydrolases enzymes.  
c- Isomerases enzymes.      d- Racemases enzymes.
- 7- A group of individual enzymes which are physically correlated to function together.  
a- Isoenzymes.      b- Simple enzyme.      c- Multienzyme system      d- All of the above.
- 8- Type of enzyme coded by different genes, differ in amino acid position, active in different tissues and differing in molecular properties, differ also in their isoelectric pH value.  
a- Multienzyme system.      b- Simple enzyme.  
c- Conjugated enzyme.      d- None of them.
- 9- Group of enzymes catalyses reaction which brings about of new molecule from precursors.  
a- Lyses enzyme.      b- Transferase enzyme.      c- Ligases enzyme.      d- All of the above.
- 10- Type of enzymes which brings an atom from a donor to another accepting molecule.  
a- Transferase enzymes.      b- Isomerase enzymes.  
c- Lyses enzymes.      d- Oxidase enzymes.

بِاقِي الْاِسْنَانِ اَنْظُرْ فِي الْخَلْفِ

	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 2018	Term: First	Total assessment Marks:50	Time ALLOWED:2 ours

تکلم فی ما یأتی: (50 درجة) (کل سوال بـ 10 درجات)

1- اشرح تاریخ الغطاء النباتي بعد الفترات الجليدية مع توضیح العلاقة بين توزيع الانواع النباتية وتضاريس كل من منطقة شمال أوروبا وشمال أمريكا.

2- اذكر الشواهد الدالة علي تغير المناخ في الماضي وعلاقة ذلك بظهور النباتات علي الارض.

3- یؤثر الوسط كله كقوة مترابطة ومتماسكة علي توزيع النباتات. وضح ذلك.

4- تعتبر عملية هجرة النباتات محصلة لعمليتين. اذكرهم مع توضیح دور عملية الهجرة في نمو الغطاء النباتي تحت تأثير الظروف البيئية المتغيرة.

5- عرف ماياتي:

الاستئصال – نظرية المساحة والعمر – طور التعاقب التقهقري – Cryptophytes

. Phanerophytes

مع تحياتي بالتوفيق والنجاح

أستاذ المادة: أ.د. محمد أحمد البحيري



TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY			
FINAL EXAMINATION FOR THE THRID YEAR (SPECIAL MICROBIOLOGY + SPECIAL BOTANY)			
COURSE TITLE	APPLIED MICROBIOLOGY		COURSE CODE: MB3113
DATE: 13/1/2018	JANUARY 2018	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS



**Answer the following questions**

**1- Answer the following (30 marks)**

- Mention the role of enzymes in the following:
  - Enzymes in baby food
  - Enzymes in slimming food
  - Diagnosis of diseases
- Mention the main factors to be considered during selection of microbial strain to produce enzymes
- Compare between normal penicillin and long active penicillin.
- Mention which enzyme(s) is used in the following applications, mention its origin and why?
  - Leather tanning
  - Biological detergent
  - Bread making

**2- Give reason(s) for the following (30 marks)**

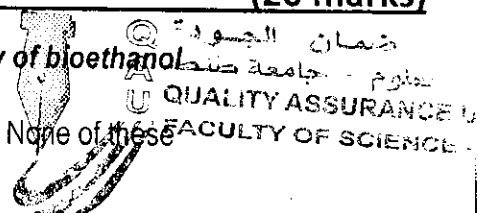
- There are difficulties to produce sufficient quantities of bioethanol
- Lactose is the most suitable carbon source for penicillin production.
- Biological transformation of steroid is better than chemical.
- Griseofulvin is the most effective antibiotic available for the systemic treatment of fungal infections.
- All new enzyme preparations developed are of microbial origin
- Steroids are used in treatment of sterility and at the same time used as antifertility agents

**3. Check  $\checkmark$  or X for the following sentences (20 marks)**



- 6-amino penicillic acid is prepared from penicillin by penicillin acylase ( )
- Aspergillus niger* is used generally for the production of Lactic acid ( )
- The raw material for citric acid production is starch powder ( )
- The yeast used in the production of bioethanol is *Penicillium chrysogenum* ( )
- Submerged fermentation is also called Batch fermentation ( )
- Overheating of fermenter during fermentation is controlled by cooling jacket ( )
- The useful microorganism for fermentation is yeast ( )
- Batch fermentation is also called *closed system* ( )
- The best medium for the production of penicillin is corn steep liquor ( )
- Preservatives used to maintain moisture and softness in baked goods is called staling agents ( )

**4- Chose the correct answer (20 marks)**

- 1- Which of the following is an acceptable method for recovery of bioethanol
- a) Evaporation      b) precipitation      c) filtration      d) None of these



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	<b>Tanta UNIVERSITY, Faculty of Science, Department of Botany</b>		
	<b>Practical Examination for (Fourth Year) Students of BOTANY</b>		
	COURSE TITLE: Physiology of algae	COURSE CODE: <u>BO3113</u>	
DATE: JAN, 2018	TERM: FIRST SEMESTER	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2HOURS

**II. Give an account on the following questions: (60 Marks/10 Marks each)**

1. Catastrophic growth curve phases.
2. Advantages and disadvantages of photo-bioreactors.
3. Factors affecting nitrogen fixation
4. Photo-assimilation of glucose in algae
5. Thylakoid membrane organization in different algae
6. Effect of aeration on algal growth

**III. Complete the following questions: (20 marks)**

1. Culture vessels should have the following properties:.....,.....,..... and.....
2. ....culture is characteristic with final algal harvest
3. Chlorophyll a is greenish pigments which absorb .....and.....light.
4. ...., they are the algae occur on the tree trunk; but, algae that is harmful for plants called.....
5. Algae that can utilize acetate and pyruvic acid and lactic acid called.....

**IV. Mark the following sentences with (√) or (X) and correct the wrong ones (20 marks / 4 marks each).**

1. Acidic media is depressive for the nitrogen fixation process ( )
2. Algal biomass is one of the indirect algal growth measurement ( )
3. Chlorophyll D is found in of the Bacillariophyta ( )
4. Continues and Batch culture can be applied outdoor ( )
5. Dinitrogenase is an iron protein complex ( )
6. Dry heat used to sterilized glass vessels ( )
7. Magnesium is involved in most reactions of ADP and ATP ( )
8. Halotrophic algae can utilize glucose in dark or light condition ( )
9. Seawater autoclaving allowing bacterial degradation of inhibitory substances ( )
10. The floated algae utilized carbonic acids as a source of nutrients ( )



**Examiners:**

**Best wishes.....**

*Dr. Mostafa Elshobary*



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	TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY			
	FINAL EXAM FOR THE THIRD YEAR STUDENTS (CHEMISTRY/BOTANY)			
	COURSE TITLE	PLANT CYTOGENETICS	COURSE CODE: BO3133	
DATE	JUN., 2018	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HRS	

Answer the following questions:

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

- 1) - Genetic system in Prokaryotes.....while in Eukaryotes.....
- 2) -The three types of Secondary lysosomes are ....., ..... and .....
- 3) - The main lipid constituent of plasma membrane is ....., ..... and..... while Protein of Plasma membranes contain structural ....., .....and.....
- 4) - The color of Phaeoplast are ..... and Contain ..... pigment which it's important .....
- 5) - ..... Formed between adjacent cell walls during cell division, which composed of .....,.....and .....
- 6) - The major function of the RER is ..... While SER is .....
- 7) - External signals is ..... and.....
- 8) -Golgi apparatus plays a role in forming ....., .....and .....

**Question 2: Describe with labeled drawing only (20 marks)**

- 1- The different types of chromosome according to centromere
- 2- Amitosis
- 3- The chromosomal abnormalities during anaphase
- 4- Energy house of the cell

**Question 3: Put (R) or (W) with correction if wrong (15 marks)**



- 1- Both polymerase digestion and Electron microscopic studies suggest that chromatin is composed of repeating 200 base ( )
- 2- The chloroplast and other pigment found only in thylakoids ( )
- 3 - The centromere position is variable for all cells of the same organisms . ( )
- 4 - Each chromatid of chromosomes has thick filaments known as chromonemata ( )
- 5- Peroxisomes are rich in enzyme peroxidase and catalase ( )
- 6 - New mitochondria may be originated from ER or Golgi apparatus ( )
- 7 - Tertiary cell wall composed of Xylem besides lignin anther. ( )
- 8 - Singer and Overton (1925) were supposed the cell membrane as a mosaic of Lipid and protein. ( )

**Question4: Discuss each of the following: (40 marks)**

- 1- The important of primary and secondary constriction and their attachment points.
- 2- The similarities between the Mitochondria and bacterial cell
- 3- The significance of meiosis and Mitotic division
- 4- Maturation promoting factor (MPF)

Examiner committee:  
 Prof. Dr. Adel R. El-Shanshory  
 Dr. Marwa Hamouda

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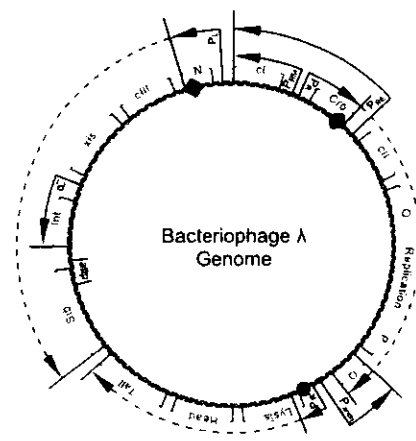
	Tanta UNIVERSITY, Faculty of Science, Department of Botany		
	Final Examination for (Third Year) Students of Microbiology		
	Course Title: <b>VIROLOGY</b>	Course Code: MB3101	
Date: January 18, 2018	First Semester	Total Assessment Marks: 100	Allowed Time: 2 Hours

**I. Give the scientific terms for the following definitions: (20 Marks)**

1. Infection of a cell where the replication cycle is not completed, but the virus genome is maintained in the cell.
2. A type of symmetry present in viruses where the capsid is constructed from protein molecules could be arranged to form 20 triangular faces.
3. A layer of cells growing on the surface of a plastic or glass vessel; It is used for viral cultivation.
4. A nucleic acid strand that has the nucleotide sequence complementary to that of the mRNA.
5. A virus protein that is not a component of the virion, but has one or more roles in the replication cycle.
6. A clone of virus derived from an individual plaque.
7. A group of viruses carry out reverse transcription.
8. A category of recombination occurs in a cell co-infected with two virus strains; it is the formation of progeny virions containing mixtures of genome segments from the two parental strains.
9. Purification method involves centrifuging virions in a sucrose solution of increasing concentration.
10. It is the first pathogen identified as a virus.

**II. The provided figure showing bacteriophage  $\lambda$  genome; use it to answer the following questions: (30 Marks)**

1. Name and describe the functions of **ONLY** the main **FIVE** different genes in the early regulating region. (10 Marks).
2. What are the first two expressed genes? How they control the phage replication cycle? (5 Marks).
3. Describe how the lysogenic cycle is going to be maintained? (15 Marks).



Please follow the exam behind this paper