



**First Semester final Examination
(Bacteriology)**

Subject: Course 271B

General Instructions:-Answer ONLY FIVE QUESTIONS of the following. Use well labeled diagrams where appropriate. Write the answer in the University Examination Answer Book provided. Each question 10 marks

Q1. A. Transfer the correct answer to University Examination Answer Book provided.

1. A nontoxic virulence factor that promotes survival of a pathogen by protecting it from phagocytosis is
a) Pili, b) capsule, c) an enzyme, d) cell membrane
2. The pentaglycine bridge of Gram positive bacterial murein connects
a) L-lysine to D-alanine, b) L-lysine to D-glutamate, c) Diaminopimelic acid to L-lysine, d) D-lysine to L-lysine
3. The term that refers to the destruction of vegetative pathogens on skin and living issues
a) Sanitization, b) antiseptis, c) disinfectant, d) antiseptic
4. The basal body of Gram positive bacteria is formed from
a) Hook, b) 3 rings, c) 2 rings, d) 4 rings
5. In what type of bacterial culture medium listed below would biological extract never be a component?
a) Selective medium b) complex medium c) a selective medium d) a chemically-defined medium

B. Fill in the space with only one word to Examination Answer Book provided.

1. Breaking the glycoside bond between N-acetylmuramic acid and N-acetylglucosamine in the glycan backbone is caused by.....
2. The characteristic feature of *Mycobacterium tuberculosis* cell wall contains
3. The antibiotic D-cycloserine is a structure analog of.....
4. The antibiotic phosphonomycin is a structure analog of.....
5. The length of time required to kill all bacteria in liquid culture at a given temperature is called.....

Q2. Describe the dynamics of bacterial growth curve and derive mathematic formula for calculation of generation time.

Q3. State (IN TABLE) the position, Composition and Function of each of the following:

1. Fimbriae, 2. Endospore, 3. Plasma membrane, 4. Ribosomes, 5. Mesosomes

Q4. Compare and contrast (IN TABLE) between each pair of the following:

1. Gram negative and Gram positive bacterial cell wall.
2. Ionizing and nonionizing radiation.

Q5. Give scientific reasons for each of the following:

1. Adaptation of psychrophilic and thermophilic bacteria to survive at temperatures below 0°C and above 60°C , respectively.
2. Obligate anaerobic bacteria go under lethal effect by exposure to oxygen.

Q6. Discuss the genetic regulation for utilization of lactose by *Escherichia coli*.

-----**Good Luck**-----

Prof. Dr. Mohamed Hemida Abd-Alla

Faculty of Science Botany Department	بسم الله الرحمن الرحيم 	كلية العلوم قسم النبات
Plant Ecology Course No. 241 B 50 marks	First Semester Final Examination: 2014-2015 Second Level: Botany and Microbiology Time allowed: Two Hours	

Answer the following questions:

- 1- Discuss briefly **THREE ONLY** of the following: (18 marks)
 - a- The ecological importance of water vapour in the atmosphere. (6marks)
 - b- Effects of temperature on the geographical distribution of plants. (6 marks)
 - c- Phototropism. (6 marks)
 - d- Harmful effects of salinity. (6 marks)
- 2- Compare between each two of the following (answer **THREE ONLY**): (21 marks)
 - a- Reminder indices and exponential indices. (7 marks)
 - b- Parasitism and symbiosis. (7 marks)
 - c- Deformation and anatomical modifications by wind. (7 marks)
 - d- Mull (mild) humus and mor humus. (7 marks)
- 3- Choose the correct answer: (11 marks)
 - 1- The retention of water in the soil is primarily due to the force of (1 mark)
 - a- gravity b- cohesion c- adhesion
 - 2- light have little or no effect on photosynthetic activity. (1 mark)
 - a- green b- blue c- red
 - 3- The water remaining in an air dry soil is usually termed..... (1 mark)
 - a- free water b- hygroscopic water c- field capacity
 - 4 - Energy transfers between the living components of the ecosystem called (1 mark)
 - a- the mineralization chain b- symbiosis c-- the food chain

باقى الأسئلة خلف الصفحة

(2)

- 5-is considered as a biological phenomenon by which crusts of weathering rock debris are converted to true soils. (1 mark)
a- soil texture b- pedogenesis c- physical weathering
- 6- Physiological indices of temperature efficiency for plant growth take into account the..... temperature. (1 mark)
a- minimum b- optimum c- maximum
- 7- Grazing is one ofinterrelationships between plants and other organisms. (1 mark)
a- conjunctive b- disjunctive c- mutualistic
- 8-plants can form their flower buds under any period of illumination. (1 mark)
a- long day b- short day c- day neutral
- 9 - Available water = field capacity - (1 mark)
a- wilting point b- gravitational water c- hygroscopic water
- 10-The amount of light required for photosynthesis to equal the respiratory use of carbon compounds is called..... (1 mark)
a-dew point b- compensation point c- wilting point
- 11- Plants which grow and complete their life cycle in habitats with a high salt content are termed (1 mark)
a- helophytes b- halophytes c- xerophytes

Good Luck

Prof. Dr. Mohamed Abou El-Ela



(١٠)
امتحان الفصل الدراسي الأول
مادة أساسيات الوراثة (215 ز)
لطلاب الفرقة الثانية (الساعات المعتمدة) بكلية العلوم
العام الجامعي 2014 / 2015 م



كلية الزراعة - قسم الوراثة

الزمن: ساعتين

د. السيد عبد المنصف محمد

لجنة الممتحنين: د. محمود أبو السعود الراوي

أجب عن الأسئلة التالية:-
السؤال الأول: (13 درجة)

- أ- اكتب رقم العبارة وضع علامة صح أو خطأ أمام رقم كل عبارته من العبارات التالية في كراسة الاجابة: (5 درجات)
- 1- تتحول النسبة المندلية في حالة التفوق المتتحي المزدوج إلى 9 : 3 : 4.
 - 2- الأفراد ذات التركيب الوراثي AabbCcDd تعطي ثمانية أنواع فقط من الجاميطات.
 - 3- التركيب الوراثي XXX في الانسان ينتج عنه ثلاث اجسام بار.
 - 4- التركيب الوراثي للفنران الصفراء اللون يكون دائما خليط.
 - 5- من الصفات المرتبطة بكروموسوم Y في الإنسان صفة الشعر الكثيف على الأذن.
- ب- ما الفرق بين كل من:

الجينات المحددة بالجنس والجينات المتأثرة بالجنس - المظاهر النسخية والأثر المتعدد للجين

- ج- أذكر فقط أنظمة تحديد الجنس في الكائنات الحية مع ذكر مثال لكل نظام. (4 درجات)

السؤال الثاني: (12 درجة)

- أ- عند التلقيح الاختباري لفرد خليط في ثلاث مواقع كان النسل الناتج كما يلي: (7 درجات)

$$\frac{A \quad B \quad C}{a \quad b \quad c} \times \frac{a \quad b \quad c}{a \quad b \quad c}$$

A	B	C	316
a	b	c	314
A	b	c	102
a	B	C	88
A	B	c	73
a	b	C	77
A	b	C	13
a	B	c	17
TOTAL			1000

المطلوب :-

- 1- حساب المسافة بين الجينات الثلاثة

- 2- ارسم الخريطة الوراثية

- 3- احسب معامل التوافق

- ب- اشرح بالتفصيل حالة الأنوثة الخصوية (Testicular feminization) في الانسان. (5 درجات)

انظر خلفه

في كراسة الاجابة قم بنقل كل عبارة في العمود (أ) ثم ضع رقم العبارة التي تناسبها من العمود (ب)

العمود (أ)	العمود (ب)
β-Galactosidase	1 معقد من البروتينات الهستونية والـ DNA
Clacitonin hormone	2 شفرة من شفرات إيقاف عملية الترجمة
Introns	3 يخفض مستوى الكالسيوم في الدم
cDNA	4 يقوم بتضاعف السلسلة المتأخرة في حقيقيات النواة
Nucleosomes	5 يحلل سكر اللاكتوز إلى جلوكوز وجلالكتوز
UGA	6 هي عبارة عن تتابعات داخل الجين لا يتم ترجمتها
α-DNA polymerase	7 يقوم بفك الكتينة أثناء تضاعف الـ DNA في بدائية النواة
Operon	8 يتكون من أكسونات (Exons) فقط
Topoisomerase II	9 تتابع خطي من الجينات التي تشترك في نفس العملية البيوكيميائية والتي تنسخ معا في جزئ واحد من mRNA
Reverse transcriptase	10 يقوم بتخليق خيط الـ DNA مستخدما قالب من RNA
	11 وحدة بناء الـ DNA
	12 هي شفرة البدء أثناء عملية الترجمة

السؤال الرابع:- اجب على جميع النقاط التالية. (15 درجة)

أ- أذكر في نقاط فقط:- (6 درجات)

- انواع ووظيفة إنزيمات RNA polymerase في الكائنات حقيقية النواة.
- النقاط التي يختلف فيها تضاعف DNA في حقيقية النواة عن غير حقيقية النواة.
- متطلبات تفاعل البلمرة المتسلسل (PCR).

ب- اشرح بالرسم فقط :- (4 درجات)

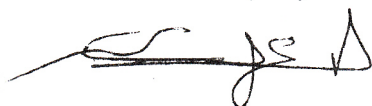
- تركيب المرقى (promoter) في الكائنات حقيقية وغير حقيقة النواة.
- عملية القص المتنوع (Alternative splicing) لجزئ mRNA في حقيقية النواة.

ج- تكلم عن عملية تجهيز الـ mRNA في الكائنات حقيقية النواة. (5 درجات)

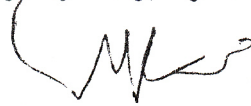
انتهت الأسئلة - مع تمنياتنا بالتوفيق

لجنة الممتحنين

د. السيد عبد المنصف محمد



د. محمود أبو السعود الراوي





(1)



First exam of the level 2 students, group 2.

Course: Plant Physiology.

Time allowed: 2 Hours.

Answer the following questions:

1- Answer 2 only of the followings (12.5 Marks).

- a- Write on true solutions, electrical properties.
- b- Discuss osmosis.
- c- Write on ascent of sap.

2- Answer 2 only of the followings (12.5 Marks).

- a- Discuss lyophilic and lyophobic colloids.
- b- Write on water loss.
- c- Write on the role played by phosphorus and nitrogen in plant nutrition.

3- Answer 2 only of the followings (12.5 Marks).

- a- write on transferases and carbohydrases enzymes.
- b- Discuss the effect of temperature on the velocity of enzymatic reaction.
- c- Write short notes on enzymes.

4- Answer 2 only of the followings (12.5 Marks).

- a- Follow by equations and diagrammatic representation C_3 -pathway.
- b-Follow by equations conversion of glucose to fructose 1,6 diphosphate.
- c- Follow by equations conversion of pyruvic acid to ethyl alcohol and lactic acid.

The end ...

امتحان المستوى الثانى
مادة نبات اقتصادى ٢٠١١ ن
الفصل الدراسى لاول

جامعة أسيوط
كلية العلوم
قسم النبات
الزمن \ساعتان

عام ٢٠١٤-٢٠١٥ م

اجب عن الاسئلة الاتيه----- من ٥٠ درجة

س ١ - اشرح بالتفصيل كيفية الحصول على الاتى فى الصناعة باستخدام الكائنات الحيه
الدقيقه ----- من (٢٠ درجة)

حامض اللاكتيك - حامض الستريك - خميرة الخباز - الكورتيزون

س ٢ - اكتب ماتعرفه عن الاتى:----- من (١٥ درجة)
١ - الانزيمات التى تنتجها الكائنات الحيه الدقيقة وماهى استخداماتها.
٢ - شروط انتقاء المضادات الحيويه ثم وضع اشهر المضادات الحيويه وانواعها
المستخدمه حديثا
٣ - انواع الزيوت الثابته واستخداماتها .

س ٣ - اكتب نبذه مختصره عن اثنين فقط مماياتى----- من (١٥ درجة)

- ١ - النباتات الطبيه
- ٢ - نبات القطن المصرى
- ٣ - الزيوت العطرية الطياره

ا.د / خيريه محمد عبد الجواد

مع تمنياتى لكم بالتوفيق



Answer the following questions

Question no 1:

Write (Yes) or (No) in the front of each sentence from the following and correct the wrong one (20 marks)

1	Myxophyta, cyanophyta and Myxophycophyta are used for popularly known name of green algae	()
2	The members of Chlorophyta are distinguished from all other algae in being prokaryote	()
3	Photosynthetic product is oil in Euglenophyta	()
4	Thylakoids of blue-green algae are arranged singly and aggregated into grana	()
5	Unicellular forms of blue green algae commonly reproduce by fission	()
6	Pseudohormogonia found commonly in Scytonemataceae and in some Nostocaceae	()
7	Food reserves consist of paramylum in case of <i>Oscillatoria</i> sp	()
8	False Branch in <i>Scytonema</i> occur by breaking of the trichome near the intercalary heterocysts only	()
9	<i>Chlorella</i> ,genus of single-celled organisms with both plant and animal characteristics	()
10	The golden color of the chrysophyte chloroplast (<u>chromoplast</u>) is a consequence of the dominance of chlorophyll a, b	()
11	The zygote is the only diploid phase in the life cycle of <i>Chara</i> .	()
12	The mature plant in <i>Cladophora</i> arises as a lateral branch from protonema.	()
13	Vegetative reproduction takes place by cell division in <i>Cosmarium</i>	()
14	<i>Vaucheria</i> has siphonaceous, coenocytic filaments that can form felt like mats	()
15	<i>Spirogyra</i> has cup Chloroplasts but <i>Ulothrix</i> has band-shaped Chloroplasts	()
16	<i>Rivularia</i> has intercalary heterocyst ,while <i>Vaucheria</i> contain basal heterocyst	()
17	Fusion between gametes of unequall size is known as anisogamy	()

(2)

18	The algae which popularly known as (Water net) is <i>Cosmarium</i>	()
19	Protonema is found in the life cycle of <i>Oedogonium</i>	()
20	Asexual reproduction in <i>Chlorella</i> takes place by oogamy	()

Question no 2:

Write an account with drawing on **Three only** from the following
(30 marks)

- 1): Vegetative structure, life cycle and alternation of generation in *Ectocarpus*.
- 2): Types of vegetative reproduction of cyanobacteria
- 3): Life cycle of *Vaucheria*.
- 4): Chlamydomonas stage –Movements of *Oscillatoria*.

Good luck and best wishes

Prof Dr: M.S. Adam

Dr: Atwatief hifney

(1)

Faculty of Science Botany & Microbiology Department		كلية العلوم قسم النبات والميكروبيولوجي
Virology (281B) Time: two hours Degree exam: 50 marks	First semester exam - the academic year 2014/2015 Second Division - Faculty of Science Exam date: Wednesday, 21/01/2015	

The first question: complete the following sentences: (8 marks)

- Viruses can be transmitted by, and
- Non-persistent transmission characteristics with but persistent transmission characteristics with
- Helper component allows the virus to attach to the food canal of the
- Techniques to identify viruses are,,
- Kinds of chlorosis are,,
- If a virus replicates inside its insect vector, it's called
- Plant viruses are composed of 2 macromolecules are,

The second question: Write short notes on three only of the following: (18 marks)

- Types of association between the virus and vector
- Transmission of virus by aphids
- Virus effect on the colour of the plant
- Effect of inactivator physical agents on virus particles
- Virus with isometric particles (give two examples)

The third question:

- Explain the officially-recognized system for the nomenclature and classification of viruses. Use examples to illustrate your answer. **(10 marks)**
- Compare between the following: **(10 marks)**
 - Tobravirus group and Tobamovirus group
 - Transmission with and without vectors (give one example only for each)

The fourth question: Answer the following: (4 marks)

- Virus infected plants may produce nothing, give reason.
- Are viruses living/nonliving?

Good luck

Dr/ Amal Danial



First Semester Final Examination (Virology)

Course: 281 B

Students: Second Level Students

Examiner: Dr. Nermien Helmy Seddek

General instruction: Answer All Questions (A, B, C and D):

A-Choose the Correct Answer (ONLY 10 item):

(10 marks)

- 1- (Comovirus - Rhabdovirus) group contains viruses with Baciliform -shaped.
- 2- Some of virus particles contain enzymes such as (RNA polymerase - RNA transcriptase - transfer RNA).
- 3- Helical virus capsid present in (herpes- influenza- other) virus.
- 4- (HDV- HBV- other) act as a helper virus with the defective virus.
- 5- The time for which a virus-free vector is allowed until found access to a virus source called (acquisition feeding- inoculation feeding - acquisition access).
- 6- (Ivanowski - Loeffler – Mayer) showed that the causal agent of the foot and mouth disease of cattle could pass through a bacteria-retaining filter.
- 7- (Prions – Viroids –Virion) cause certain ' Slow ' diseases called transmissible spongiform diseases.
- 8- Viruses with tubular or filamentous particles such (Carlavirus – Bromovirus) group.
- 9- (Viroids – Pseudovirions -Virus) is a small infectious agent coated with protein that can replicate only inside the cells.
- 10- (Hershey- Fraenkel - Smith) found that the spherical particles of Turnip Yellow Mosaic virus were of two types.
- 11- Virus Definition by (Matthews- Gibbs and Harrison- ancient Romans) called the long definition.
- 12- Decrease in cell size means (hypotrophy-hypoplasia-hypertrophy-hyperplasia).

B-Illustrate the target from the cryptogram and solve the following: (10 mark)

R/1: 1.1/16 + 0.8/16 + 0.7/16: U/U: S/Ap

انظر خلفه (باقي الأسئلة في الصفحة الثانية)



(2)

C- What are the Types of :

(10 marks)

- 1- Transmission by vectors?
- 2- Virus group contain viruses with Filamentous particles ?

D-Write on FOUR ONLY of the following:

(20 mark)

- 1- Necrosis.
- 2- Persistence.
- 3- Types of association between the virus and vector.
- 4- Basic principles of virus affecting on plants.
- 5- Living and non-living Characters of Viruses.

.....

إنتهت الأسئلة وبالتوفيق والنجاح

GOOD LUCK

Dr. Nermien Helmy Seddek

Assiut university
Faculty of Science
Botany & microbial.Dept.

Time required : 2 hours

Microbiology(Bacteria & Fungi) 291 ✓

Finalterm 2014/2015

sectionA(Bacteria) 25 degree

Answer the following questions:-

1)Which of the following bacteria lack a cell wall and are therefore resistant to penicillin?

A)Cyanobacteria

C.Mycoplasmas

B)Bdellovibrios

D.Spirochetes

2)Which of the following is true about cell wall of gram-positive bacteria?

A.It consists of multiple layers

B.It is thicker than that associated with gram-negative bacteria

C.It contains teichoic acids

D.All of these

3) Movement of DNA from one bacteria to another through a tubular bridge or pilus:

A. Conjugation

B. Transposition

C. Transfection

D. Transduction

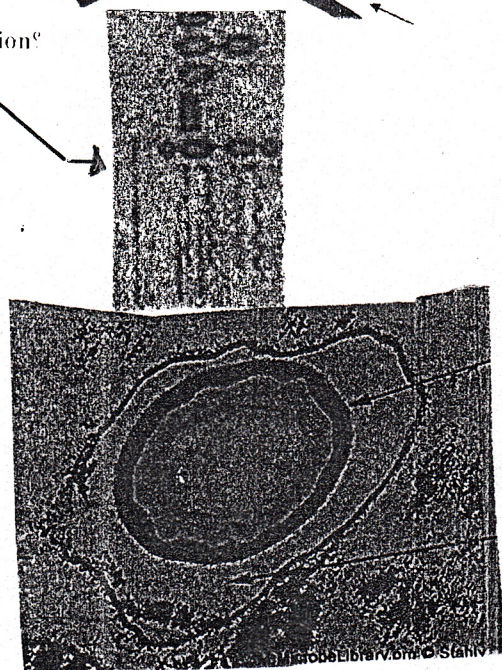
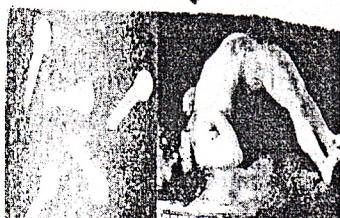
4) Differentiate between A and B?



5) Identify the shape ,where is present, write its function"

6)write the name of shape ,where it present in bacteria?

7) Identify the name of organism, its disease?



Section B *Fungi*.....25 Mark

1- First question (12 Mark)

A- Write on two point of the following questions:- Mark(6)

- 1- Plasmopara viticolaMark(3)
- 2- ZygomycetesMark(3)
- 3- Plasmodiophora brassica.....Mark(3)

B- Compare between with drawing 4 point of the following:- Mark(6)

- 1- Coenocytic structure, unicellular, septate hyphae (give examples) in fungiMark(2)
- 2- Oomycetes and ChytridiomycetsMark(2)
- 1- Conidiophores, sporangiophore, zoosporangiophore (give example)Mark(2)
- 2- Oospore and ZygosporangiumMark(2)

2- Second question (13 Mark)

A-Write in details and full illustration on two of the following:- Mark(10)

- 1- Life cycle of *Rhizopus* sp.Mark(5)
- 2- Life cycle of Yeast sp.Mark(5)
- 3- Zoosporangial shapes in Oomycetes.....Mark(5)

B-Complete the following:- Mark(3)

- 1- Cell wall of Oomycetes composed of, and Zygomycetes composed ofMark(2)
- 2- Fungi areMark(1)

Good luck

Prof. Dr. Ahmad Shoreit
Dr. Ramadan

(1)

	First-Term Examination 2014/2015	
Botany and Microbiology Department	Plant physiology (251 B) Second Level (Credit hours)	Time: 2 hours

Q1): Choose the correct answer: (15marks)

- 1- An emulsion is always between ____
a) two solids b) a solid and liquid c) two gases d) two liquids
- 2- In active transport, molecules move from an area of _____
concentration to an area of _____ concentration.
a) high: low c) low: high
b) low: high d) low: lower
- 3- The process of water moving across a membrane from an area of high water
concentration to low water concentration is called:
a) dialysis c) active transport
b) osmosis d) diffusion
- 4- What happens to plant cells placed in water?
a) They shrink b) They gain water and expand c) Nothing
- 5- The osmotic pressure of a solution
a) increases with increase in concentration of solute
b) decrease with increase in concentration of solute
c) remains unchanged with increase in concentration of sol
d) none of these
- 6- The theory that explains the pulling force of water as it evaporates from leaves
is called the
a) root- pressure theory. c) pressure-flow hypothesis.
b) cohesion-tension theory. d) active transport theory.
- 7- High root pressure can cause water to be lost by leaves through the process of
a) respiration c) transpiration
b) regurgitation d) guttation e) translocation
- 8- Turgor pressure is also referred to as
a) solute potential c) pressure potential
b) water potentia d) osmotic potential

9- Stomata close when the guard cells:

- a) lose water.
- b) photosynthesis begins and the internal CO₂ concentration decreases.
- c) gain chloride ions.
- d) become turgid.
- e) gain potassium ions

10- The pathway of water from the soil through the plant to the atmosphere is best represented by which of the following sequences?

- a) endodermis- cortex - epidermis - vessel elements - intercellular spaces in mesophyll - stomata.
- b) epidermis - cortex - Casparian strip - endodermis - sieve cells - intercellular spaces in the mesophyll - stomata.
- c) Casparian strip - root hairs - epidermis - cortex - xylem - endodermis - intercellular spaces in mesophyll - stomata.
- d) root hairs - cortex - endodermis - vessel elements - intercellular spaces in mesophyll - stomata.
- e) epidermis - endodermis - phloem - cortex of leaf - intercellular spaces of mesophyll - stomata.

11- Approximately what percent of the water absorbed by a plant is lost to the atmosphere?

- a) 1-5%
- b) 10-20%
- c) 25%
- d) 40-60%
- d) over 90%

12- Which of the following terms would be used to explain how trees can lift water to heights of ten stories or more?

- a) air pressure
- b) adhesion
- c) cohesion
- d) tensile strength
- e) all of the above

13- In plants, water rises beyond the point supported by the atmospheric pressure mostly because of

- a) capillarity
- b) gravity
- c) evaporation
- d) active transport
- e) the proton pump

14- When sugar is mixed with water, equilibrium is reached when

- a) molecules of sugar stop moving.
- b) water and sugar molecules are moving at the same speed
- c) the dissolved sugar molecules are evenly distributed throughout the solution
- d) there are the same number of water molecules as dissolved sugar molecules

15- A cell in an isotonic solution

- a) loses water and shrinks
- b) gains water and expands
- c) gains and loses the same amount of water, staying the same shape
- d) none of the above

Q3) Choose the correct answer: (7.5 marks)

1)	The part of the enzyme where the substrate binds is called the			
	(a) Coenzyme	(b) Active site	(c) Catalyst	(d) inhibitor
2)	Holoenzyme is composed of			
	(a) Apoenzyme	(b) Coenzyme	(c) Cofactor	(d) All the preceding
3)	The final product in respiration is:			
	(a) glucose	(b) Water	(c) Oxygen	(d) FADH_2
4)	The accessory pigments helps in capturing of light photons are:			
	(a) Phycobillines	(b) Anthocyanine	(c) Carotenoids & Xanthophylls	(d) Chlorophylls
5)	The reduced form of nicotinamide adenine dinucleotide is:			
	(a) NADH	(b) NAD	(c) NADP	(d) FADH
6)	Net ATP produced in glycolysis is			
	(a) 2ATP	(b) 12ATP	(c) 6ATP	(d) One ATP
7)	Which of the following occurs in the matrix of the mitochondria?			
	(a) Light reaction	(b) Electron transport chains	(c) Tricarboxylic Acid cycle	(d) Calvin cycle
8)	Enzymes responsible for hydrolysis of Starch			
	(a) Invertase	(b) Amylase	(c) Lipase	(d) Peroxidase
9)	The assimilatory power formed in non cyclic photophosphorylation are:			
	(a) ATP	(b) ATP & NADPH_2	(c) NADH_2	(d) FADH_2
10)	NADH_2 is equal to			
	(a) 2ATP	(b) 4ATP	(c) 5ATP	(d) 3ATP
11)	Oxygen necessary for			
	(a) Glycolysis	(b) Calvin cycle	(c) Oxidative phosphorylation	(d) Light reaction
12)	Photons of light when striking chlorophylls molecules can be			
	(a) Transmitted	(b) Absorbed	(c) Reflected	(d) Any one of the preceding
13)	Starch enter Krebs cycle in the form of			
	(a) Pyruvic acid	(b) Acetyl CoA	(c) Succinyl CoA	(d) Citric acid
14)	Which the visible light necessary to photosynthesis?			
	(a) Red & blue light	(b) Green light	(c) Ultraviolet	(d) Black light
15)	Mitochondria contain			
	(a) Cristae	(b) Grana structure	(c) Stroma	(d) Photosystem

Q4) A-Define the following :

(7.5 marks)

- 1- Optimum temperature of enzyme activity
- 2- Antenna structure
- 3- Plastoquinone
- 4- conjugated enzymes
- 5- Oxidative phosphorylation

(1)

Part II: Internal Anatomy (25 Marks)

I- Complete the following Sentences: (8 marks)

- 1- Gut morphology is related to the dietary differences; in liquid-feeding insects gut has to:
(a) (b) (c)
- 2- The main 4 major feeding sources of insects are:
(a) (b) (c) (d)
- 3- The cause that make herbivorous insects midgut has alkaline values (pH 9 – 12) is
.....
- 4- In most insects; midgut epithelium is separated from the food bolus by
..... that is perforated. **Why?** (Mention 2 functions of the perforation.)
(a)
(b)
- 5- In blood-feeding insects; salivary glands secrete saliva containing:
(a) (b)
- 6- In insects; the function of alary muscles is
- 7- Insect hemocytes including the following types:
(a) (b) (c)
- 8- Insect circulatory system is mediated by both and
regulation.
- 9- In insects excretion and osmoregulation are mainly regulated by:
(a) (b)
- 10- Hindgut of fresh-water insects contains cells that can absorb inorganic
ions from very dilute solutions.
- 11- The insect Central Nervous System contains
(a) (b) (c)
- 12- Each testicular tube (follicle) is composed of four zones:
(a) (b) (c) (d)
- 13- In insects there are 2 types of ovarioles which are:
(a) (b)

II- Choose the Correct answer of the following: (5 marks)

- 1- The following parts of alimentary canal are **NOT** lined with cuticle:
 (a) The crop. (b) The Gizzard. (c) The gastric caeca. (d) Rectum.
- 2- In plant-feeding insects the midgut pH ranges between
 (a) pH 6-7.5. (b) pH 9-12. (c) pH 3-5
- 3- In soft-bodied larvae the hydrostatic skeleton is the:
 (a) Muscles. (b) Cuticle. (c) Haemolymph.
- 4- Lateral ostia permit the one-way flow of hemolymph:
 (a) Into the heart. (b) From one heart chamber to another. (c) Away from heart.
- 5- Insect feces contain: both and
 (a) Undigested food only. (b) Metabolic excretions only. (c) Both of the previous.
- 6- Malpighian tubules are originate from the:
 (a) Ectoderm. (b) Endoderm. (c) Mesoderm.
- 7- The rectal pads found in:
 (a) Ilium. (b) Colon. (c) Rectum. (d) Non of the previous.
- 8- Which part of the following does **NOT** belong to the male reproductive system?
 (a) Vas deferens. (b) Spermatheca. (c) Seminal vesicle. (d) Ejaculatory duct.
- 9- Immature aquatic hemimetabolous insects referred as:
 (a) Naiad. (b) Larva. (c) Nymph.
- 10- The stomatogastric system includes the following ganglia:
 (a) Frontal ganglion. (b) Hypocerebral ganglion. (c) All of the previous.

III- What is the scientific meaning of the following: (4 marks)

- 1- Nutrition:
- 2- Accessory pulsatile organs:
- 3- Respiration: Is the

4- Excretion:

5- The Instar:

6- Imago:

7- Individual's ontogeny:

8- Pharate adult:

IV- Mention the main functions of the following: (3 marks)

1- Insect haemolymph:

- a-
- b-
- c-

2- Functions of peritigmatic glands are:.

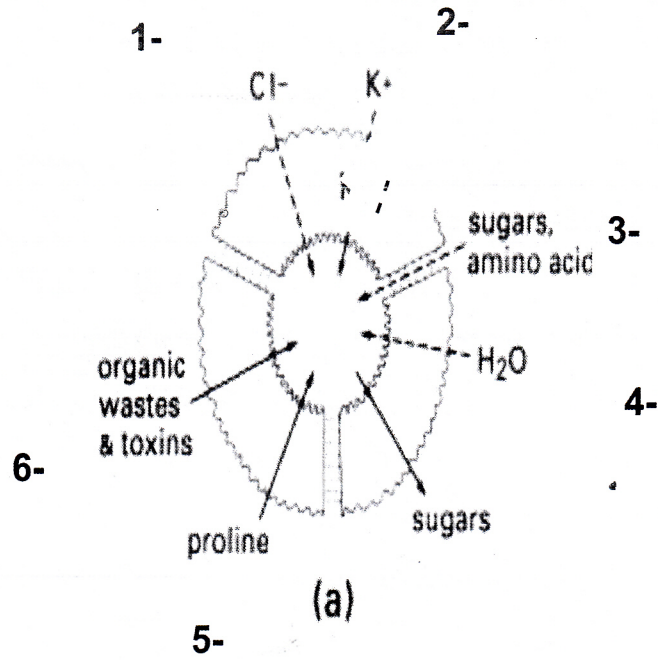
- a-
- b-

V- Write down the missing labels of the following: (5 marks)

A- What is the following diagram shows? (3 Marks)

The Answer (1 Mark):

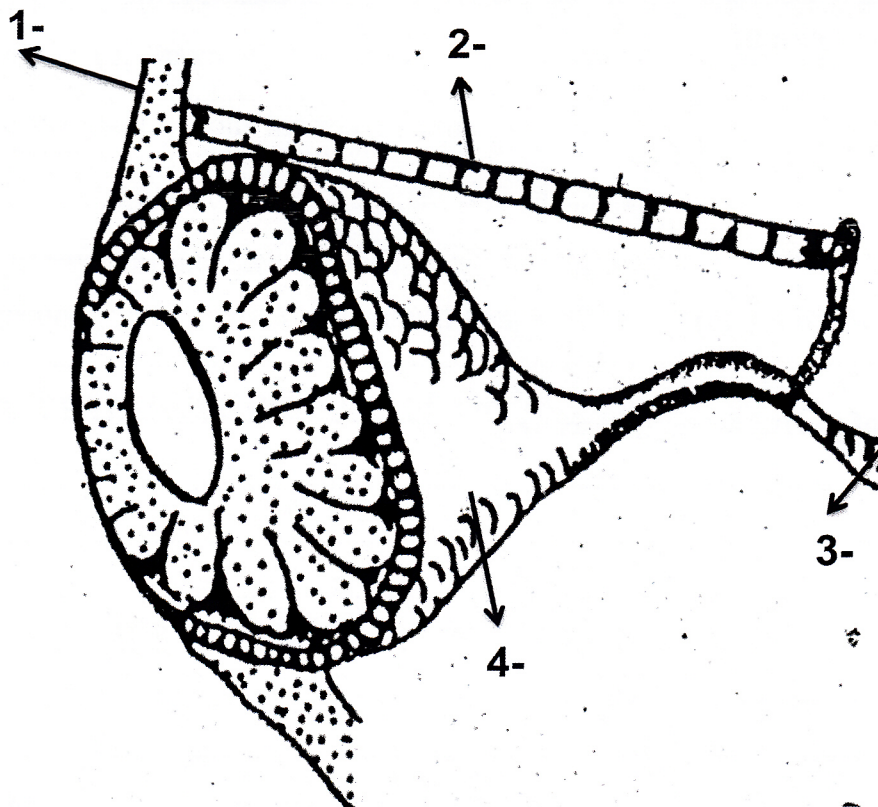
(4)



B- What is the following diagram shows?

(2 Marks)

The Answer (0.5 Mark):



Best wishes & Good Luck
Examiner
Dr. Ahmed M. Korayem

Faculty of Science Botany & Microbiology Department		كلية العلوم قسم النبات والميكروبيولوجي
Plant morphology and anatomy (221 B) Time: two hours Degree exam: 50 degrees	First semester exam - the academic year 2014/2015 Second Division - Faculty of Science Exam date: Tuesday, 06/01/2015	

Part I: plant morphology

Question (1): Answer three only of the following: (12.5 degrees)

- Explain with drawing how you can differentiate between dicots and monocots morphologically.
- Illustrate the different types of weak stem.
- Compare between the different types of primary root system.
- How can leaves develop into some unusual types, explain with drawing.

Question (2): Answer two only of the following: (12.5 degrees)

- Write with drawing what do you know about three only of the following:
Endospermic seed–Compound pinnate leaf –Hydathode– Tracheids.
- Buds contribute stem to perform a variety of special functions, explain with drawing.
- Write on the physical requirements for seed germination.

Part II: plant anatomy

Question (3): Answer two only of the following: (12.5 degrees)

- Write on the transformation of Sapwood into Heartwood. Why Heartwood is more valuable than Sapwood.
- Compare with drawing between of the following :
1ry & 2ry endodermis – latex cells & ducts – interfascicular & interafascicular cambium.
- Arrange with giving example: 1ry meristem - promeristem- 2ry permanent tissue- 1ry permanent tissue- 2ry meristem.

Question (4): Answer three only of the following : (12.5 degrees)

- Collenchyma has adaptability to change and support in the rapidly growing tissue, discuss and mention its types, origin and distribution in plant body.
- Secondary growth in roots is initiated differently from stem, explain.
- Write the function of the following: cork cambium- sieveplate-pericycle in roots
- How can you differentiate between roots and stems anatomically?