First-Term Examination
2019/2020

Botany and Microbiology Department

Plant physiology (251 B)
Second Level (Credit hours)

Time: 2 hours
4/1/2020

Q1): Choose the correct answer: ***(10 marks)***

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
b) high: higher
c) 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
b) osmosis
c) active transport
d) diffusion

4- 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.

5- 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

6- If a plant cell contains more solutes than its surrounding environment:
a) There will be no net movement of water
b) The cell will burst
c) Water will enter the cell
d) Water will leave the cell

7- The shrinkage of protoplasm due to ex-osmosis of water from the cell is called:
a) Osmosis b) Deplasmolysis c) Plasmolysis d) Imbibition

8- Which one of the following forms of soil water is commonly absorbed by plants?
a) Hygroscopic water
b) Capillary water
c) Gravitational water

9- During absorption of water by roots, the flow of water from epidermis to endodermis takes place by,
a) Apoplastic pathway
b) Symplastic pathway
c) Transmembrane pathway
d) All of above

10- The element, _____, is important as a component of ADP and ATP.
a) Phosphorus b) potassium c) Magnesium d) chlorine

11- Calcium is an essential plant nutrient because it is a component of
a) ADP & ATP b) amino acids c) several coenzymes d) cell walls

Q2) Write short notes on <u>five</u> of the following: ***(10 Marks)***

1- Specific role of nitrogen.
2- Passive and active absorption of water.
3- The relation between osmotic pressure, turgor pressure, and suction pressure (D.P.D.) when Opi > Ops.
4- Flocculation of Lyophilic and Lyophobic colloids.
5- Mechanism of stomatal opening and closing (Active Potassium (K^+) Theory).
6- Apoplastic and symplast pathway.

Q3) Define:- **Guttation - Imbibition - Gravitational water**
Root pressure - Diffusion ***(5 Marks)***

Q4) - Compare between of the following: ***(9 Marks)***

a- Mutase and Epimerase enzyme
b- Chlorophylls pigments and carotenoids
c- Photosystem I and Photosystem II

Q5) A-Write short notes on <u>two</u> of the following: ***(8Marks)***

a- Effect of temperature on enzyme activity
b- The anabolic role of Krebs cycle in plant cell
c- Explain the steps converting glucose to acetyle co-enzymeA

B- Write the equations explaining three of the following: ***(8 Marks)***

a- Carboxylation of carbon dioxide to glyceralaldehyde-3-phosphate
b- Lactic acid fermentation
c- Photolysis of water
d- Oxidase and Peroxidase enzymes

Good Luck

Dr. Abeer Radi Dr. Fatma Farghaly

Assiut University Faculty of Science Botany & Microbiology Department		جامعة أسيوط كلية العلوم قسم النبات والميكروبيولوجي

إمتحان النبات الإقتصادي (٢١١ ن)

لطلاب المستوي الثاني (نظام الساعات المعتمدة) الترم الأول ٢٠١٩-٢٠٢٠

الزمن : ساعتان	الإمتحان في صفحتان	الدرجة الكلية : ٥٠ درجة

السؤال الأول :- ضع علامة (√) أو(×)أمام العبارات الأتية مع تصحيح الخطأ
(١٦ درجة. درجة لكل نقطة)

١. تتميز الزيوت الثابتة انها تتطاير عند تعرضها للهواء ولها طعم مستساغ ورائحة قوية ( )

٢. تتكون الدهون الصلبة من الجلسرين + البالمتيك او الستياريك كأحماض دهنية ( )

٣. يلزم تقطير ٢٠,٠٠٠ رطل من الازهار للحصول على رطل من الزيت العطري ( )

٤. القطة هي مرحلة كبس القطن في البالات ( )

٥. يتراوح طول تيلة القطن المصري ١١/٨-١٤/٣ بوصة و تمتاز بالمتانة والقوة ( )

٦.هدير الكتان هى عملية غمر سيقان الكتان في الماء لتفكيك الالياف وازالة بكتات الكالسيوم ( )

٧. يمكن الحصول على مستخلص البن بصورة جافة عند نقع البذور عدة ساعات ثم تجميع الماء والتبخير تحت ضغط منخفض ( )

٨. ينتج العالم سنويا ٤ ملاين طن من البن حيث تنتج كولومبيا ربع إنتاج العالم ( )

٩. تعتمد صناعة الكحول في مصر على مصانع العصائر حيث تنتج ٢٠ مليون لتر كحول سنويا ( )

١٠. كل ٥٠٠ لتر بيئة مولاس تنتج حوالى ١٠ كجم من الخميرة الطازجة ( )

١١. عند اضافة كبريت الصوديوم في عملية التخمر الكحولى يقف إنتاج الاسيتالدهيد ويبدء الكائن توجيهه لإنتاج الجلسرين ( )

١٢. من كل ١٠٠ جزيء سكر + ١٠٠ جزيء سلفيت نحصل علي ٣٠ جزيء جلسرين ( )

١٣. يعتبر حامض اللاكتيك المادة الوسطية لأنتاج فيتامين سي ( )

١٤. البكتيريا المنتجة للبيوتانول والايثانول والاسيتون هي *Clostridium butricum* ( )

١٥. يضاف الحامض الاميني الجلوتاميك للتغذية في حالة النباتيين ( )

١٦. عند انتاج الاسترويدات يلقح الوسط بالميكروب المختار لمدة ٤٨ ساعة ثم تضاف المادة البادئة من البروجيستيرون ثم يحضن مرة اخري لمدة ٢٤-٩٦ ساعة ( )

أنظر فى الخلف

السؤال الثاني :- أذكر اسم النبات الطبي او المضاد الحيوي المنتج ميكروبيا الذي يعالج الأمراض التالية
(١٢ درجات .١,٥ درجة لكل نقطة)

١- الروماتيزم ٢- علاج اضطرابات القلب وتحسين الدورة الدموية ٣- الملاريا ٤- ملين وطارد للغازات ٥- الحمي الربيعية ٦- توقف العرق الزائد ٧- حمي التيفود ٨- السل والالتهاب الرئوي

السؤال الثالث :- وضح مراحل إنتاج المركبات التالية بإستخدام الكائنات الدقيقة (إختر ثلاثة فقط مما يلى)
(١٢ درجات. ٤ درجات لكل نقطة)

الكحول الإيثيلي - حامض الخليك - الأسيتون والبيوتانول - حامض السيتريك

السؤال الرابع:- أذكر ما تعرفة عن نقطتان فقط مما يلى (١٠ درجات. ٥ درجات لكل نقطة)

١- الأحتياجات اللازمة للصناعات الميكروبية.

٢- العمليات الكيميائية المختلفة التى تتم خلال صناعة الورق.

٣- مراحل تصنيع الشاي الاخضر والشاي المخمر.

مع تمنياتنا بالنجاح والتفوق دائما

د. غادة عبد المنصف محمود

Assiut University – Botany and Microbiology department

Final Exam (2019-2020) for 2nd level students

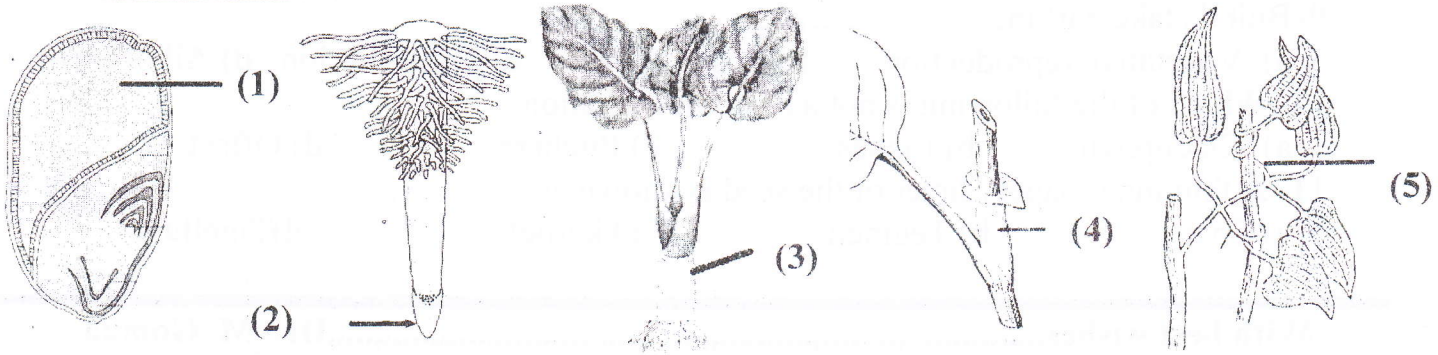
Plant Morphology

Time allowed: 1h | Total marks:25

Plant Morphology (25 Marks)

Question #1:.....(15 Marks)

A- Define each of the following pointed plant parts and mention their function? (Answer 4 only) (6 marks)



B- Differentiate between each two of the following with drawing: (Answer 3 only) (9 Marks)

1- Heterophylly and Anisophylly.
2- Phyllode and Phylloclade.
3- Nodulated and Nodulose root.
4- Runner and sucker stem

Question #2:.....(10 Marks)

A- Write the scientific term(s) for each of the following sentences: - (Answer 5 only) (5 Marks)

1- A type of germination in which seed germinates while still on the parent plant.
2- Herbs that live for few days and complete their life cycle in that period.
3- Membranous outgrowth at the junction of leaf petiole and lamina in monocotyledons.
4- Adventitious roots which develop from the horizontal branches of some trees.
5- Buds which develop on roots in some plants.
6- A type of leaf venation that is common in dicotyledons.

B- Choose the correct answer: - (Answer 10 only) (5 Marks)

1- A tree which takes the shape of a pyramid by racemose branching is named.....
a) Excurrent b) Deliquescent c) Caudex d) Culum

2- When the stipules of the opposite leaves unit together by their inner margins and lie in the axil of leaves, it is called.....
a) Adnate b) Interpetiolar c) Intrapetiolar d) None of them

3- Prefoliation is the arrangement of leaves in the .....
a) Stems b) Buds c) Both of (a) and (b) d) None of them

4- Aerial moisture absorbing roots occur in ....

a) Parasitic plants b) Hydrophytes c) Epiphytes d) None of them

5- Negative geotropism occurs in.........................

a) Pneumatophores b) Climbing stem c) Stilt roots d) (a) and (b) e) (b) and (c)

6- Cataphylls is also known as......................

a) Bract leaves b) Cotyledonary leaves c) Scaly leaves d) floral leaves

7- A tuber is characterized by each of the following except............

a) It has nodes b) It is Branched c) Contains adventitious roots d) All of them

8- Seminal roots are found in ....

a) Monocots b) Dicots c) Gymnosperms d) All of them

9- Bulbils take part in......................

a) Vegetative reproduction b) Respiration c) Transpiration d) All of them

10- Which of the following is not a stem modification.........

a) Cladophyll b) Lianas c) Pitchers d) Offset

11- A thin inner papery layer of the seed is known as............

a) Coat b) Tegmen c) kernel d)Tigellum

With best wishes,,Dr./ M. Gomaa

M.Gomaa

	Assiut University – Botany and Microbiology Department		
	Final Exam (2019-2020) for 2nd level students **Phycology (273B)**		
	Time allowed: 2h	**Total marks:50**	

Question # 1: Explain and differentiate between each two of the following WITH DRAWING?

(Answer 5 only)..(20 Marks)

a- Palmella stage and Plakea stage.

b- Nucule and Globule.

c- Unilocular and Plurilocular sporangia.

d- Spermatangia and Carpogonia.

e- Pseudohormogonia and Hypnospores.

f- Polyhedral cell and Amylum star.

Question # 2: Give a short definition for 6 ONLY of the following scientific terms:-

(12 Marks)

a) Haplobiontic b) Coenobium

c) Monospores d) Cystocarp

e) Oospore f) Primary protonema

g) Autospores

Question # 3: Write briefly WITH DRAWING on 3 ONLY of the following:-

(18 Marks)

a- Pseudobranching and movement in Cyanophyta.

b- Sexual reproduction of *Oedogonium*.

c- Alternation of generation in *Cladophora*.

d- Life cycle of diatoms.

With all best wishes,,Prof. Dr./ M. S. Adam

Assiut University Faculty of Science Department of Botany & Microbiology		Course : Virology (B281) Exam: Final Exam Time :2hrs.

Please Answer the Following Questions [50 Mark]

A- Difine : [12.5 Mark]

1- Endo cellular cordons
2- Incubation feeding period
3- Gibbs' Concept
4- Vpg
5- Cavlimovirus

B- [12.5 Mark]

1- How dependent transmission of semi- persistent aphid- borne viruses is taking place?

2- " particles of some viruses may be contain rather than the two main components" show

C- Give reason (s): [15 Mark]

1- Successful of transmission by contact.
2- Variability of plant virus symptoms.
3- Presence of – acetyl amino acid at the N- terminal end.
4- Most viruses produce inclusion bodies in their hosts.

D- [10 Mark]

1- Explain the following cryptogram:
TRSV R/1:2.4/42+1.4/29 (or Σ2.8/46):S/S:S/Ne

2- Show in brief words Matthews definition of viruses.

Good luck

Prof Dr. Sameh K. Hemida

Assiut University, Faculty of Science, Botany & Microbiology Department		جامعة أسيوط - كلية العلوم قسم النبات والميكروبيولوجي
First Term Exam., January 2020 Plant Morphology and Anatomy (221B) Second level Students, Faculty of science		Exam. Date: 2/1/2020. Allowed Time: 2 hours. Total Marks: 50 Marks.

Plant Anatomy

Firstly: Answer the following questions:(38 Marks)

Q1: Match the items given in column A with the responses given in column B (10 Marks)

Column A	Column B
1- Dendrochonology	(A) Applied to all tissues outside the vascular cambium of stem.
2- Amphistomatic	(B) Render the wood to attack by the organisms of decay.
3- Dermatogen	(C) Stomata are found on the upper surface of leaf.
4- Collenchyma	(D) Stomata are found on both surfaces of leaf.
5- Procambium	(E) Living mechanical tissue devoid of lignin.
6- phelloderm	(F) Develops as patches named scale bark.
7- Protoderm	(G) Causes sieve tube losses its function.
8- Rhytidome	(H) Sometimes, named Secondary cortex.
9- Phellogen	(I) Gives rise to the vascular cylinder.
10- Tyloses	(j) Arises from permanent tissue.
11- Callose	(k) Develops into piliferous layer.
12- Bark	(L) Determine the age of a tree.
	(M) Gives rise to the epidermis.

Q2: Write in table the functions of each of the following: (10 Marks)

1- Nectariferous tissue.	2- Parenchyma tissue.	3- Brachysclerid.
4- Mechanical tissue.	5- Laticiferous tissue.	6- Hydathode.
7- Ground meristem.	8- Palisade tissue.	9-Schizogenous glands.
10- Vascular tissue system.	11- Cambium	

Q3: Give reasons for each of the following: (5 Marks)

1- Parenchyma is considered simple and primitive tissue.

2- Heart wood is commercially more valuable and useful than sapwood.

Q4: Give one difference with drawing if possible between each of the following: (5 Marks)

1- Radial vascular bundles and collateral bundles.

2- Fibers and sclereids.

3- Gramine stoma and universal stoma.

4- Spring wood and autumn wood.

5- Vascular tissue of Gymnosperms and vascular tissue of Angiosperms.

Q5: Draw with labelled diagrams FOUR ONLY of the following: (8 Marks)

1- Two types of simple Mechanical tissue support herbaceous plants.
2- Four types of the least specialized permanent tissue in plant body.
3- Various vascular bundles characteristic stem of Angiosperms.
4- Pattern of lignification in xylem vessels.
5- Three types of epidermal outgrowths.

Secondly: Answer THREE ONLY: (4 Marks each)

1- Describe with the help of drawing the process of interxylary phloem formation.
2- Write an account of adaptation of structure to function of vascular tissue system.
3- Compare and describe with drawing different types of vascular bundles characteristic old *Dracaena* stem.
4- Classify the tissues of continues cell formation depending upon their origin and locations in the plant body.

إستطلاع رأي

دون وجهة نظرك من خلال دراستك لهذا المقرر في توزيع درجات هذا الامتحان.

هل يجب أن تكون درجة الجزء الخاص بالتشريح ؟

1- أعلى من درجة المورفولوجى.
2- تساوى درجة المورفولوجى.
3- أقل من درجة المورفولوجى.

"Good Luck"

Prof. M.A. Elnagdy

Botany & Microbiology Department

Final Exam
2019-2020

Bacteriology (271)

Faculty of Science
Time: 2 hours

Answer the following: Total 50 Marks

Q1: Complete the following: (10 Marks)

A- The protein molecules that made up the filaments of bacterial flagella are called.....

B- The structure of bacterial cell that is responsible for the Gram reaction .....

C-A gliding motion is characteristic of .....

D-Unlike the eubacteriai cell wall, the archaeobacterial cell wall does not contain.....but contain.....

E- The maximum useful magnification obtained with light microscope is.....

F-The size of most bacteria ranged from ..... to ..... µm in length

G- Acid fast bacterial cell wall contains .....

H-.....responsible for food spoilage in refrigerator.

Q2: Differentiate between <u>two</u> only of the following: (10 Marks)

1-Cell wall components structure of *Escherichia coli* and *Bacillus subtilis.*

2- Cyanobacteria and photosynthetic purple bacteria

3-Specialized and generalized transduction

Q3: Identify e<u>ight</u> only of the following: (8 Marks)

A-DNA transformation
B-Auxotrophs
C-N_2-fixation
D-Photoheterotrophs
E-Synthetic media
F-Microaerophiles
G- Selective media
H- Saprophytes
J- Chemolithotrophs

Q4: Give in table:
position, composition and function of the following: (10 Marks)

A-Capsule B-Mesosomes C-Plasma membrane D-Fimbriae

Q5: Write short notes (with draw) on the following: (12 Marks)

A-Nitrogenase B- Nitrification C- Hfr D- Mode action of sulfa drug
E- Endospore formation F- ultra structure of flagellum

Best wishes

Dr. NaeimaYousef

Final Examination
First semester 2019/2020

Plant Ecology
Course No.: 241B
Time allowed: 2 hours

Department of Botany & Microbiology
50 Marks
2rd Level.

Answer the following questions:

Question 1: 8 x 1= 8 Marks

A) Write the scientific term for each of the following:-

1- The response by an organism synchronises its body with changes in day length.
2- An individual species harms another without obtaining benefit.
3- The relationship in which two individuals actually meet and battle over the resources.
4- Organisms obtain electrons from inorganic sources.
5- The low temperature induction of floral initiation.
6- The action of light as a timer in leaf and flower movement.
7- The total amount of energy captured in photosynthesis.
8- The definite number of organisms which a habitat can potentially support it.

B) Diagram the Y-shaped energy flow model through grazing and detritus food chains – discus why the energy decreases when transferred from a trophic level to the next level? **6 Marks**

Question 2: 3 x 3= 9 Marks

- Describe three only of the following:

a) Shelford's law of tolerance and the ecological amplitude.
b) Light compensation point and its ecological importance.
c) Alkali soils.
d) Role of the atmosphere and its components in filtration of harmful incoming solar radiation.

Question 3: 3 x 3 = 9 Marks

- In a table compare between:

a) Specific and absolute humidity.
b) Protocooperation and mutualism (give example for each).
c) Autecology and synecology.
d) Heliophytes and sciophytes

Question 4:

Define each of the following: **4 x 2 = 8 Marks**

a) Soil texture
b) The plant zero
c) Field capacity
d) Phototropins
e) Dew and its ecological importance

Question 5: Answer two only **2 x 5 = 10 Marks**

a) How the organomineral structural aggregate affect the physiological characteristics of the microorganism.
b) Summarize the main steps in the cycling of nitrogen, and explain why more organisms are not nitrogen fixers.
c) Account the wind effects on the plants and soil.

Good Luck

Prof. Dr. Taha Ramadan

Assiut University
Faculty of Science
Botany and Microbiology Department

Academic Year Final Examination 2019/2020
Second Level (Credit Hours System) - Subject of the Exam.: General Microbiology (291 B)
Students of Group One and Group Two **Date of the Exam.: Sunday 12/1/2020**
Examination Points: 50 Marks **Time Allowed: Two Hours**

Mycology (25 Marks)

Answer the following questions:-

Question One:- **5 Marks**
Choose the correct answer of the followings and write it in your notebook one mark each

1-Mastigonemes mean.....

a-Suspensor appendages b-Hairy appendages
c-Unequal flagella d-Equal flagella

2-The thallus structure in the genus *Zygorhynchus* is.....

a-Homothallic b-Dioecious c-Unisexual d-Self sterile

3-Rhizoids and sporangiophores are alternated in the vegetative structure of the fungal thallus in.....

a-*Mucor* b-*Rhizopus* c-*Absidia* d-*Pilobolus*

4-Suspensor-appendages are brownish black and dichotomously branched in.....

.a-*Absidia* b-*Phycomyces* c-*Zygorhynchus* d-*Mortierella*

5-Biflagellate zoospores are characteristic for.....

a-Hyphochytridiomycetes b-Chytridiomycetes
c-Plasmodiophoromycetes d-Both a and b

Question Two:- **20 Marks**

Answer FIVE ONLY of the followings:- **4 Marks Each**

A-What is the meaning of plectenchyma. Explain with illustration the structure of only one kind of plectenchyma.

باقى الأسئلة خلف الصفحة

B-Compare with drawing between each two of the followings:-

1-Apothecium and perithecium.

2-Arthrospores and chlamydospores.

C-What are the general characteristics of the Class: Myxomycetes. Follow up with drawing the life cycle of a typical Myxomycete.

D-Give with drawing and examples an account on gametangial copulation and planogametic copulation as methods of union of sex elements in fungi.

E-Explain with drawing the asexual life cycle in *Saprolegnia* and write and define the various phenomena related with it.

F-Mention, with drawing and using an example, the morphological and reproductive features of the Family: Pilobolaceae..

مع أطيب التمنيات – أ. د. عصام حسنى على

Faculty of Science Botany& Microbiology Department		كلية العلوم قسم النبات والميكروبيولوجى
General Microbiology (291 B) Time: Two hours Total degree: 50 marks	First semester exam - the academic year 2019/2020 Second Level Exam date: Saturday, 12/01/2020	

Part I (Bacteriology)

Answer all the following questions:

The first question: Describe **three only** of the following: **(15 marks)**

1. **Structure of Gram positive and negative cell wall.**
2. **Streptococcal diseases.**
3. **Virus replication and transmission**
4. **Glycocalyx**

The second question: Compare between **each** of the following: **(4 marks)**

1. Capsid and Capsomere
2. Rickettsia, Chlamydia and Mycoplasma

The third question: put (√) or (x) sign in front of each of the following sentences and correct the wrong one: (6 marks)

1. Plasmid is a unique structure for bacterial cells. ( )
2. The cell membrane controls what the cell will look like and how it behaves. ( )
3. Vaccines: builds up an army of WBC's & antibodies to kill the microorganisms. ( )
4. Spores resist ordinary cleaning methods and boiling. ( )
5. *Clostridium perfringens* causes food poisoning and gas gangrene. ( )
6. Acidic dyes do not stain the bacterial cell. ( )

Good luck

Dr./ Amal Danial