



Academic Year Final Examination 2018/2019

Second Level (Credit Hours System) - Subject of the Exam.: General Microbiology (291 B)

Students of Group One

Date of the Exam.: Saturday 12/1/2019

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-Pseudoconidia are formed in the family:.....

a-Mucoraceae b-Pilobolaceae c-Mortierellaceae d-Choanephoraceae

2-The number of peripheral fibrils in the axoneme of the flagellum is.....

a-Two b-Eleven c-Nine d-Eight

3-The fungal thallus bears male and female sex organs on the same vegetative hypha is.

a-Heterothallic b-Monoecious c-Unisexual d-Self sterile

3-Conidia with two or more cross septa are termed.....

a-Didymospores b-Dictyospores c-Phragmospores d-Amerospores

4-In plasmogamy phase of sexual reproduction, the two sexual fungal cells are fused in

a common cell which is.....

a-Diploid b-Multinucleate c-Uninucleate d-Binucleate

5-The two gametangia are pincers-like in.....

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

Question Two:-

20 Marks

Answer FIVE ONLY of the followings:-

4 Marks Each

A-Define with drawing each of the followings:-

Prosenchyma – Basipetalous succession – Perithecium – Pycnidium

B-Compare with drawing between the morphological features of the genera: *Mortierella* and *Pilobolus* of the Order: Mucorales.

C-Follow up with drawing only the different stages of asexual reproduction in the life cycle of *Saprolegnia* then, mention and define the phenomena related to this asexual reproduction.

D-Discuss with drawing the different modes of union of sexual elements in the fungal Divisions: Mastigomycotina and Zygomycotina.

E-The flagellation plays an important role in the classification of Division: Mastigomycotina into Classes. Discuss with drawing this statement in detail.

F-Explain with drawing the life cycle of a typical Myxomycete.

مع أظيب التمنیات - أ. د. عصام حسنی علی

Faculty of Science Botany & Microbiology Department		كلية العلوم قسم النبات والميكروبيولوجي
General Microbiology (291 B) Time: Two hours Total degree: 50 marks	First semester exam - the academic year 2018/2019 Second Level Exam date: Saturday, 12/01/2019	

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. Ultra-structure of flagellum and movement of bacterial cell.
3. Staphylococcus diseases.
4. Process of endospore formation in bacteria.

The second question: put (√) or (x) sign in front of each of the following sentences and correct the wrong one: (10 marks)

1. The organisms which obtain their energy from chemicals are designated as organotroph organisms. ()
2. Ribosome is never present in a prokaryotic cell. ()
3. The functions of pili include movement, attachment, and conjugation. ()
4. A single bacterium can produce several spores during a single vegetative growth cycle. ()
5. The rigidity and shape of the bacterial cell is due to the lipopolysaccharides. ()

Good luck

Dr./ Amal Danial

	First-Term Exam 2018/2019	
Botany & Microbiology Department	Plant physiology (251 B) Second Level (Credit hours)	Time: 2 hours 3/ 1/ 2019

Q1) Choose the correct answer:

(10 Marks)

1-During day, decreasing water potential and osmotic potential of guard cells leading to stomatal opening are facilitated by,

- a) hydrolysis of starch into sugars in guard cells
- b) synthesis of sugars and malate in guard cells
- c) ATP- driven H^+ / K^+ exchange mechanism leading to accumulation of K^+ ions in guard cells
- d) All of above

2-Guttation occurs through,

- a) Hydathodes
- b) Stomata
- c) both (a) and (b)
- d) none of above

3- An important constituent of proteins, nucleic acids and alkaloids is,

- a) Mg
- b) N
- c) S
- d) Ca

4- Phosphorous is not a constituent of,

- a) Cell membranes
- b) ATP
- c) Coenzyme-A
- d) None of the above

5- Turgor pressure of plant cell increases due to,

- a) End-osmosis
- b) ex- osmosis
- c) wall pressure
- d) all of the above

6- 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

7- 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

8- 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

9- The theory that explains the pulling force of water as it evaporates from leaves is called the

- a) root- pressure theory.
- b) cohesion-tension theory.
- c) pressure-flow hypothesis.
- d) active transport theory.

10- Water holding capacity of the soil is much greater in,

- a) sandy soil
- b) clayey soil
- c) loam
- d) none of above

11- An emulsion is always between__

- a) two solids
- b) a solid and liquid
- c) two gases
- d) two liquids

Q2) Write short notes on five of the following:

(10 Marks)

- 1- Active absorption of water.
- 2- The relation between osmotic pressure, turgor pressure, and suction pressure (D.P.D.) when $O_p > O_s$.
- 3- Cohesion tension theory.
- 4- Flocculation of Lyophilic and Lyophobic colloids.
- 5- Mechanism of stomatal opening and closing (**Starch - Sugar hypothesis**)
- 6- Specific role of calcium.

Q3) Define: plasmolysis - imbibition - adsorption
root pressure - osmosis

(5 Marks)

Q4) - Compare between three of the following:

(9 Marks)

- a- Aldolase and mutase enzyme
- b- Competitive and non-competitive inhibitor
- c- Xanthophyll and chlorophylls pigments
- d- Grana and cristae membrane

Q5) A-Write short notes on two of the following:

(10 Marks)

- a- Structure of conjugated enzyme
- b- Effect of substrate concentration on enzyme activity
- c- Assimilation of carbon dioxide to starch
- d- Explain the steps converting glucose to glutamic acid

B- Write the enzyme catalyzing three of the following: (6 Marks)

- a- Carboxylation of carbon dioxide to phosphoglyceric acid
- b- Conversion of glucose to glucose 1,6 diphosphate
- c- Phosphorelation of adenosine diphosphate to adenosine triphosphate
- d- Conversion of xylulose 5-phosphate to ribulose 5-phosphate

Good luck Dr. Abeer Radi , Dr. Fatma Aly

University of Assiut Faculty of Science Department of Botany and Microbiology		Final written Exam Virology (B281) Two hrs allowed Dec 2018
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Please Answer the Following Questions

(50 Mark)

1- Define :

(13 Mark)

- a- Hyperplasia (1)
- b- Virioids (2)
- c- Type member(1)
- d – Persistent transmission (2)
- e- Endocellular cordons (2)
- f – Gibbs' concept (2)
- g- Carlavirus group (3)

2 – Are viruses infections of animals differ from those of plants? Discuss **(8 Mark)**

3 – a- Show in headlines components rather than nucleic acid and protein in virus composition (5)

b- Explain R/I : $1.8 \pm 0.5/20$: S/S : S/Ap (6)

4 – a – Virus vectors are sharing in 3 points, what are these? (4)

b - Are there viruses like symptoms but with other causes? Show in 4 points only (5)

5 – Comment

(9 Mark)

- a- Necrosis not only appears on leaves (3)
- b- Some viruses infect their hosts systemically (2)
- c- TNV differs from satellite virus (4)

Good luck

Prof. Dr. Sameh K. Hemida



First Term Exam., January 2019
Plant Morphology and Anatomy (221B)
Second level Students, Faculty of science

Exam. Date: 2/1/2019.
Time allowed: 2 hours.
Total Marks: 50 Marks.

Plant Anatomy

Firstly :Answer the following question:

(15 Marks)

- 1- Write short notes on each of the following: (6 Marks)
 - A- Mechanisms of healing of wounds.
 - B- Heart wood. What happens if the Heart wood is removed?
- 2- Describe and differentiate between various types of kidney shape stomata? (3 Marks)
- 3- Name the tissue support rapidly growing organs of plant? What are the common locations you can find it? (2Marks)
- 4- Write in tables each of the following: (4 Marks)
 - I- The origin of:
 - a- Inter and intra fascicular cambium.
 - b- Mechanical tissues.
 - II- The function of:
 - a- Dendrochronology.
 - b- Palisade tissue.
 - c- Hydathode.
 - d- Epidermal outgrowths.

Secondly: Answer two questions only:

(10 Marks each)

- 1- Name the tissues of continuous cell formation. List the characteristic features of it? What are the various criteria on the basis of which can be classified? Name the locations in the plant body where you can find it? Classify it depending upon their functions?
- 2- A- What are the functions and origin of primary vascular tissue system? Write an account of adaptation of its structure to this function? Compare between vascular tissue system in Gymnosperms and Angiosperms?
B - Write short notes on:
 - (i) Bark and Rhytidome
 - (ii) Stinging hair
- 3- A- Discuss with drawing various cases of abnormal activity of cambium in Angiospermic stems?
B - Classify xylem depending upon the position of protoxylem in the vascular bundles?

“Good Luck”

Prof. M. A. Elmagdy

2019/1



انظر خلفه

Plant Morphology

Question (1): Answer three only of the following: (9 Marks)

- a) Define seed dormancy, mention its causes and breaking methods.
- b) Write on physical and chemical requirements for seed germination.
- c) Some plants develop non-green underground stems, illustrate different types and mention the purpose of such modifications.
- d) Often a compound leaf is mistaken for a stem bearing leaves, how you differentiate?

Question (2): Answer two only of the following: (6 Marks)

- a) Compare between **three only** of the following:
 - 1- Compound pinnate & Compound palmate leaf.
 - 2- Leaf venation in monocot. & dicot. plants.
 - 3- Endospermic and Ex-endospermic seed.
 - 4- Monopodial & Sympodial branching in stem.
- b) Write with drawing what do you know about **three only** of the following:
 - 1- Insectivorous plants.
 - 2- Storage tap roots.
 - 3- Weak stems.
 - 4- Epigeal germination.
- c) Buds contribute stem to perform a variety of special functions, explain with drawing.

The End of Exam.

GOOD LUCK

Amany Hamid Abdel-Hameed Abeer



إمتحان النبات الإقتصادى (211 ن)

طلاب المستوى الثانى (نظام الساعات المعتمدة) الترم الأول 2018-2019

الزمن : ساعتان	الإمتحان في صفحتان	الدرجة الكلية : 50 درجة
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السؤال الاول :- عرف المصطلحات الآتية :- (12 درجات)

- 1- اللقاح
- 2- الماش
- 3- المولاس
- 4- المضادات الحيوية
- 5- حلج القطن
- 6- هدير الكتان
- 7- تعتيق الخل
- 8- الزيوت المجففة

السؤال الثانى :- اختر الإجابة الصحيحة مما يلي:- (15 درجة)

1- مادة السلفيت هي مخلفات صناعة	أ- السكر	ب- الألبان	ج- الورق	د - اللحوم
2- السربوز يعتبر المادة الوسطية لانتاج	أ- حمض الاسكوريك	ب- الكحول	ج- الأسيتون	د - الجلوتاميك
3- عند اضافة	.....	في عملية التخمير الكحولى يقف إنتاج الاسيتالدهيد ويبدء الكائن توجيه الانتاج الى الجلوسرين.		
أ- الجلوكوز	ب- الجير	ج- السكروز	د - كبريت الصوديوم	
4- كل	.....	جرام جلوكوز ينتج 60-80 جرام حامض ستريك .		
أ- 100	ب- 200	ج- 300	د - 400	
5- الكلورمايستين المنتج بواسطة الاكتينوميستيات فعال ضد البكتيريا المسببة للـ	.....			
أ- السل	ب- التيفود	ج- الجدري	د - الألتهاب السحائي	
6- يستخدم نبات اللاحلاح في علاج أمراض	.....			
أ- القلب	ب- الروماتيزم	ج- العيون	د - اللثة	
7- العلاج الوحيد لمرض	.....	يستخرج من نبات الكينين.		
أ- السل	ب- الصرع	ج- الملاريا	د - الجدري	
8- هو اشهر انواع البن حسب الصفات المورفولوجية.				
أ- البن العربي	ب- البن الأمريكي	ج- البن الأفريقي	د - كل ماسبق	
9- النواتج الثانوية لصناعة الكحول الأيثيلي تتمثل في	.....			
أ- جليسرول	ب- حمض اللاكتيك والسكسينك	ج- كحول الأميل والإيسواميل	د - كل ماسبق	
10- تنتج بكتريا <i>Clostridium acetobutylicum</i> البيوتانول ، الاسيتون و الايثانول بنسبة	.....			
أ- 60:30:10	ب- 10:40:50	ج- 10:50:40	د - 30:30:40	
11- لإنتاج واحد طن من عطر البنفسج يلزم استخدام	.....	طن من الازهار.		
أ- 5	ب- 10	ج- 15	د - 20	

تابع السؤال الثاني

12-..... ينتج على مرحلتين اولا يتكون حامض الداى امينوبيميلييك ثم يتم نزع مجموعة الكربوكسيل منة بواسطة نوعين من البكتيريا.	أ- الجلوتاميك	ب- اللايسين	ج- الخليك	د - الأسكوربيك
13- تستخدم بكتريا <i>Clostridium butricum</i> في إنتاج	أ- حمض البيوتريك	ب- الأسيتون	ج - البيوتانول	د - الريبوفلافين
14- القطن المصري من افضل انواع القطن في العالم حيث تحتوي الألياف على سيليلوز.	أ- 10%	ب- 50%	ج - 70%	د - 90%
15- عند إنتاج الكحول كل لتر من المولاس ينتج 3.6 لتر من الكحول.	أ- 1	ب- 2.5	ج - 5	د - 9

السؤال الثالث :- وضح مراحل إنتاج المركبات التالية باستخدام الكائنات الدقيقة (اختر إثنان فقط مما يلى):-
(8 درجات)

- 1- خميرة الخباز.
- 2- حامض اللاكتيك.
- 3- الأسيتون والبيوتانول.

السؤال الرابع :- أذكر ما تعرفه عن ثلاث نقاط فقط مما يلى :-
(15 درجات)

- 1- تقسيم الزيوت الدهنية.
- 2- مراحل إنتاج الشاي.
- 3- طرق إستخلاص الزيوت العطرية وأنواعها.
- 4- مراحل صناعة الورق وأنواع منتجاته.

مع تمنياتنا بالنجاح والتفوق دائما

د. غادة عبد المنصف محمود



Botany and Microbiology Department
For Students of the Second level



First Semester 2018/2019

Plant Ecology (B 241)

Time: 2 hours

Answer on the following questions:

I- Define each of the followings: (10Marks)

- 1-ecosystem, 2-plant zero, 3-capillary water, 4- heliophytes, 5-lithophytes, 6-C/N ratio,
7- pedogenesis, 8- dew point, 9- plant etiolation, 10- soil profile.

II- Make a scientific sentence from column (A) and column (B): (10Marks)

Column (A)

Column (B)

- | | |
|----------------------------|---|
| 1-compensation point | () means plant adaptation to low temperature |
| 2- Eluviation refers to | () is a deposition of sand on cultivated soils |
| 3- Cardinal temperature | () has pH varying between 6-7 |
| 4- Desertification | () equal amount of consumed and produced CO ₂ under light |
| 5- Non-capillary spaces | () include minimum, optimum and maximum temp. |
| 6- Slope steepness | () plants inhabited sandy soils |
| 7- Secondary production is | () a soil zones that loss of soluble salts |
| 8-Hardening means | () effect on the velocity of water current |
| 9- Psammophytes is | () accumulation of matter by heterotrophic organisms |
| 10- Fertile soil | () are occupied by soil atmosphere. |

III-Give an account on Three only of the followings: (30Marks)

- 1- Role of visible and invisible light on plants.
- 2- Relationships between invisible air vapor and water loss in plants.
- 3- Humus importance for plant and soil.
- 4- Effect of soil salinity on plants (formation, harmful and reclamation).

GOOD LUCK

Prof. K.A. Farghali

Assiut University
Faculty of science
Botany & Microbiology
Department



جامعة أسيوط
كلية العلوم
قسم النبات والميكروبيولوجي

Second Level (273 B Algae)

Time allowed: 2 hours

First Semester 2018-2019

Total degree: 50 marks

Answer the following questions using drawings where these assist: -

(1) Write short notes on 10 only of the following: (20 Marks)

Amylum star

Auxospore

Dwarf male plant in *Oedogonium*

Autogamy

Plurilocular sporangium

Monospores

Polyhedral cell

Haplobiontic

Cyclospora

Epipellic

Plakea

Nucule

(2) Write a concise account on 2 only of the following: (20 Marks)

(a) Alternation of generation in *Cladophora*.

(b) Alternation of generation in *Ectocarpus*.

(c) Explain in what respect does the Cyanophyta resemble and differ from bacteria and Rhodophyta.

(3) Write briefly on 2 only of the following: (10 Marks)

(a) Palmella stage in *Chlamydomonas*.

(b) Pseudobranching in *Scytonema*.

(c) Movement in *Oscillatoria*.

Good Luck

Prof. Dr.: M. S. Adam



بسم الله الرحمن الرحيم

Assiut University

Faculty of Science

Botany & Microbiol. Dept.

Time required :2 hours

Bacteriology 271N

Final term 2018/2019(5.1.2019)

Final Degree 50 degree

1. Bacterial cell wall is made of

- a) N-acetyl glucosamine
- b) N-acetyl muramic acid
- c) both a and b
- d) N-acetyl glucosamine, N-acetyl Muramic acid and amino acids

2. Which of the following can be attributed to bacteria?

- a). decomposition of dead organic matter
- b). increasing oxygen levels in the atmosphere
- c). production of antibiotics
- d). all of these

3). Prokaryotic organisms that obtain their energy by oxidizing inorganic substances are called

- a). chemoautotrophs.
- b). photoautotrophs.
- c). chemoheterotrophs.
- d). photoheterotrophs.

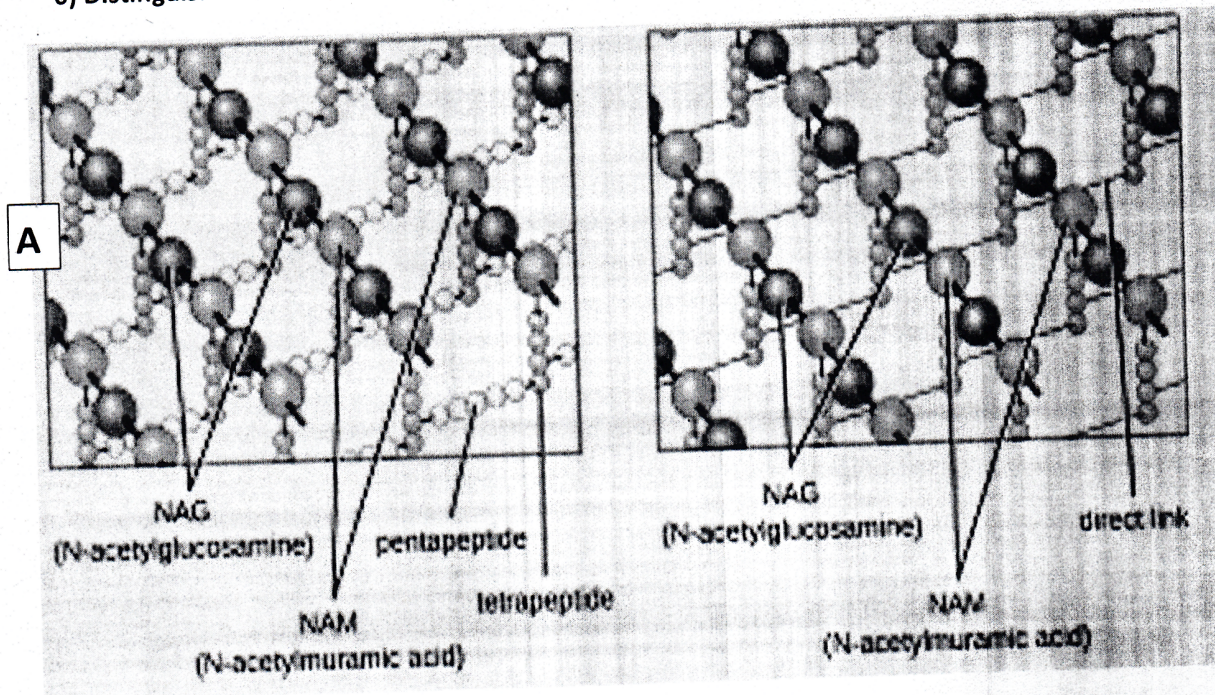
4). Genetic recombination has led to antibiotic resistance through the transfer of

- a). pili.
- b). endospores.
- c). plasmids.
- d). bacterial chromosomes

5) All the bacteria fix nitrogen except

- a) Rhizobium
- b) E.coli
- c) Azotobacter
- d) Cyanobacteria

6) Distinguish between 2 shapes



7) The cell walls of many gram positive bacteria can be easily destroyed by the enzyme known as

- A. Lipase
- B. Lysozyme
- C. Pectinase
- D. Peroxidase

8) What is the colour of gram -positive bacteria on a gram staining?

- A. Purple
- B. Pink
- C. Colourless
- D. Green

9) Cytoplasmic inclusions include

- A. Ribosomes
- B. Mesosomes
- C. fat globules
- D. all of these

10) which is most likely to be exposed on the surface of a gram-negative bacterium?

- A. Pore protein (porin)
- B. Protein involved in energy generation
- C. Lipoteichoic acid
- D. Phospholipids

11) The last step in synthesis of peptidoglycan is

- A. attachment of a peptide to muramic acid
- B. attaching two amino acids to form a cross-link
- C. attachment of a portion of peptidoglycan to a membrane lipid
- D. binding of penicillin to a membrane protein

B

12) Chemotaxis is a phenomenon of

- A. swimming away of bacteria
- B. swimming towards a bacteria
- C. swimming away or towards of bacteria in presence of chemical compound
- D. none of the above

13) bacteria deficient in cell wall is

- A. Treponema
- B. Mycoplasma
- C. Staphylococcus
- D. Klebsiella

own

14) Which of the following is/are not a gram-positive bacteria?

- A. Streptococci
- B. Pseudomonas
- C. Mycobacteria
- D. None of these

15) The gram-positive bacteria lack structure/component?

- A. outer membrane
- B. Murein
- C. teichoic acid
- D. plasma membrane

16) Gram-negative bacteria, responsible for food poisoning, is/are

- A. Salmonella
- B. Pseudomonas
- C. Clostridia
- D. None of these

17) In lysogeny,

A. a bacteriophage transfers bacterial DNA

B. bacteria take up double stranded DNA from the environment

C. DNA-degrading enzymes in the extracellular medium would stop the process

D. a bacteriophage genome is integrated into the bacterial genome

18) Which of the following is a gram-positive bacteria?

A. *Lactobacillus*

B. *Staphylococci*

C. *Streptococci*

D. All of these

19) The organism which obtain their energy from chemicals are designated as

A. Prototrophs

B. chemotrophs

C. Organotrophs

D. autotrophs

20) The organism which grows best above 45°C are called

A. Psychrophilic

B. Mesophilic

C. Thermophilic

D. any of these

21) microbe, which grows at temperatures above 95° C is most likely to be

A. an archaean

B. a fungus

C. a protozoan

D. none of these

22) Teichoic acids are typically found in

A. cell walls of gram positive bacteria

B. outer membranes of gram positive bacteria

C. cell walls of gram negative bacteria

D. Good Luck

23) Which of the following is exposed on the outer surface of a gram-negative bacterium?

A. O-antigen of lipopolysaccharide (LPS)

B. Polysaccharide portion of lipoteichoic acid (LTA)

C. Braun lipoprotein

D. Electron transport system component

24) Chemically the capsule may be

- A. Polypeptide
- B. Polysaccharide
- C. either (a) or (b)
- D. none of these

25) The cell walls of Gram positive bacteria contain two modified sugar, viz. N- acetylglucosamine

- A) α - 1,4-glycosidic bond
- B) β -1,6-glycosidic bond
- C) α - 1,6-glycosidic bond
- D) β - 1,4-glycosidic bond

26) Generation time is

- A. time required for the population to double
- B. time required for the initial adjustment
- C. obtained by expression t/n , where t = time interval, n = number of generation
- D. both (a) and (c)

27) Quantitative measurement of bacterial growth can be carried out by measuring

- A. cell count
- B. cell mass
- C. cell activity
- D. all of these

28) Which of the following statement(s) is/are true in regards to F^+ x F^- mating events?

- A. DNA is transferred from F^- to F^+ cells
- B. DNA is transferred from F^+ to F^- cells
- C. No DNA is transferred because F^- cells are unable to perform conjugation
- D. No DNA is transferred because F^+ cells are unable to perform conjugation

29) Which of the following transport bacterial DNA to other bacteria via bacteriophages?

- A. Conjugation B. transduction
C. Transformation D. Genetic engineering

mine (1 30) The term used for acquisition of naked DNA from its environment and its incorporation in their g

- A) Transformation
B) lysogenic conversion
C) Conjugation
D) none of these

31) Plasmid that carries genes encoding enzymes, which degrade substances such as aromatic compounds, pesticides or sugar are

- A F factors
B metabolic plasmid
C virulence plasmid
D none of these

32) The arrangement, in which flagella are distributed all round the bacterial celliate, is known as

- A. Lophotrichous
B. Amphitrichous
C. Peritrichous
D. Monotrichous

33) The equation used to obtain bacterial population by binary fission is

- A. $N = N_0 2^n$
B. $\log N / N_0 = (0.3010) n$
C. $\log (N/N_0) = n \log 2$
D. All of these

34) The common word for bacteria which are helically curved rods is

- A. Cocci
B. Pleomorphic
C. Bacillus
D. Monotrichous

35) Name the component of flagellum

- A. Filament
- B. Hook
- C. Basal body
- D. All of these

36) Endospore formation is a method to tide over unfavourable condition

Which is generally seen in

- a) Gram positive bacteria
- b) Gram negative bacteria
- c) Both a+b
- d) Streptomyces

37) Which of the following is not the characteristic of a growth curve?

- A. Shows development of microbial population under relatively stable environmental conditions
- B. Plotted with logarithmic numbers
- C. Graphs numbers of microbes versus time
- D. Monotrichous

38) The growth is normally expressed as _____ in turbidimetric measurement

- A. cells per ml
- B. cfu/ml
- C. optical density
- D. mg N₂ /ml

39) Bacteria multiply best

- A. below 16°C
- B. At 37°C
- C. above 38°C
- D. none of these

40) An organism has an optimal growth rate when the hydrogen ion concentration is pH7. This is

- A. osmotolerant
- B. acidophile
- C. neutrophile
- D. Monotrichous

41) Organisms, using organic compounds as electron donors are called

- A. lithotrophs
- B. phototrophs
- C. chemotrophs
- D. organotrophs

42) Which of the following term describes the relationship between a virus and host where no new viral particles are produced and the viral genome is replicated along with host chromosome?

A. Lysogeny

B. Lysis

C. Transformation

D. Conjugation

43) The synthesis of mRNA based on a DNA template is called

A. DNA replication

B. transcription

C. translation

D. DNA restriction

44) Cycloserine inhibits

A. alanine racemase

B. D-alanyl - D-alanine synthetase

C. Both (a) and (b)

D. Amidase

45) The cell reproduction in bacteria may occur by

A. binary fission

B. budding

C. fragmentation

D. all of these

46) Cephalosporins and Penicillins interfere with which of the following?

A. Protein synthesis

B. DNA function

C. Cell membrane function

D. Cell wall synthesis

47) A culture broth tube was very turbid at the surface but clear throughout the rest of the tube indicating that the

A. organism are aerobes

B. organism should be grown in an anaerobic chamber

C. organism cannot produce superoxide dismutase and/or catalase

D. organism cannot tolerate oxygen

48)The term facultative anaerobe refers to an organism that

- A.doesn't use oxygen but tolerates it
- B.is killed by oxygen
- C.uses oxygen when present or grows without oxygen when absent
- D.requires less oxygen than is present in air

49)the exponential phase, the cells and cell mass

- A.first increases then decreases
- B.decreases
- C.are constant
- D.double at a constant rate

50)Bacteria of genus *Nitrosomonas* use as their electron source.

- A.ammonia
- B.H₂S
- C.succinate
- D.light

Good Luck

Prof. A.A.M.SHOREIT



First Semester- Final Examination

Subject: Course B 271 (Bacteriology)

Students: (Microbiology; Chemistry and Microbiology sections)

General Instructions: -Answer the following questions.

Q1. Place a tick ✓ in the correct answer (Ten only). 10 Marks

- 1 What is the following term referring to the destruction of pathogens on living tissue?
a. disinfection b. autoclaving c. antisepsis d. sanitization
- 2 Which one of the following is correct for the decline phase of the bacterial growth curve?
a. cell dividing < cell dying b. cell dividing > cell dying c. cell dividing = cell dying d. no dividing
- 3 Which of the following is correct for gelatinous polymer that is external to the bacterial cell wall?
a. Nucleosome b. Carboxysome c. Magnetosome d. Capsule
- 4 Which one of the following is component of acid fast bacterial cell wall?
a. Glutamic b. Dipicolonic c. Mycolic d. Lactic
- 5 Which of the following is not a characteristic of certain psychrophilic bacteria?
a. Grow at 0°C b. Saturated fatty acid c. Unsaturated fatty acids d. Peptidoglycan
- 6 Which of the following is nitrifying bacteria related to?
a. photoautotrophs b. Chemoautotrophs c. Photoheterotrophs d. Chemoheterotrophs
- 7 Which of the following may be most likely to be missing from a Gram-positive bacterium?
a. Penicillin binding protein b. Peptidoglycan c. Outer membrane d. Plasma membrane
- 8 Which of the following is inhibited by tetracycline?
a. 50S subunit b. 30S subunit c. 70S Ribosome d. 80S Ribosome
- 9 Which of the following structures is never present in a prokaryotic cell?
a. Cell wall b. Magnetosomes c. Ribosome d. Membrane-bound nucleus
- 10 Which one of the following organisms has axial filament?
a. *Treponema pallidum* b. *Cytophaga* c. *Bacillus* d. *Micrococcus*
- 11 Bacitracin interferes with bacterial cell synthesis by inhibiting?
a. Lipid phosphatase b. NAG-NAM linkage c. Synthetase d. Rasemase

Your answer

1	2	3	4	5	6	7	8	9	10	11

Q2. Give scientific term for each statement (Ten only).

10 Marks

No	Statement	Scientific term
1	Some bacteria exhibit direction swimming in response to earth magnetic field.	
2	Bacteria that required some growth factor and not required by wild type.	
3	Bacteria that obtain energy from oxidation of inorganic compound as electron donor and use this energy for carbon dioxide fixation.	
4	Gram-negative bacteria which has lost its peptidoglycan	
5	Transfer of genetic information from a donor to a recipient using Naked DNA	
6	The lowest temperature at which all microorganism in a liquid culture are killed in 10 minutes	
7	Genes that encode proteins with related functions	
8	Bacteria that obtain energy from light and use CO ₂ fixation as sole carbon source.	
9	Circular pieces of double-stranded which exist independently of the bacterial chromosome	
10	Bacteria which live in high saline environments	
11.	Certain organic compounds required in small amounts for growth because they are essential substances that the organism is unable to synthesize	

Q3. Give reason(s) in space "provided below" for each of the following:

1. Strictly anaerobic bacteria go under the lethal effect when exposed to oxygen

2. An adaptation of hyperthermophilic bacteria to grow at 70⁰ C.

3. Ionizing radiation is more effective than non ionizing radiation.

4. Resistance of bacterial endospore to high temperatures.

5. The turgidity of bacterial cell wall.

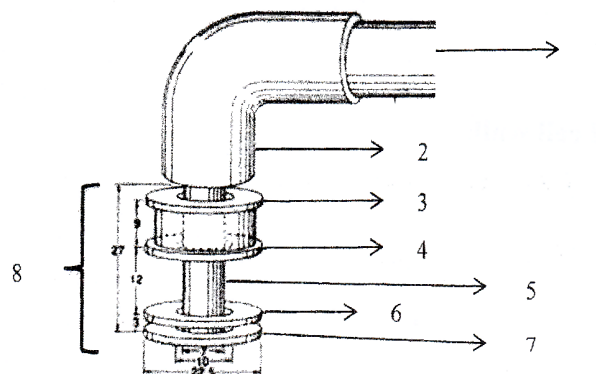
Q4. Fill in the space with correct answer (Ten only).

10 Marks

1. is the causal agent of dental caries.
2. Syphilis is caused by
3. The causal agent of meningitis is.....
4. is structure analog to para-aminobenzoic acid and block the conversion of.....
5. Phosphoenol pyruvate is structural analog to and blocks the formation of
6. The antibiotic vancomycin inhibited cell wall synthesis by binding to.....
7. A gliding motion is a characteristic of
8. is the time interval required for the cells to divided or a population to double.
9. Presence of in medium inhibited conversion ofto cAMP by enzyme adenylate cyclase and resulted in turn of Operon.

10. The first step in cell biosynthesis is activation of N-acetylglucosamine with.....to produce.....
11. is the transfer of genetic materials from a donor to a recipient using naked DNA by means of Rec A proteins

Q5. Look at the diagram provided and answer the following:



1. Identify each of the labeled structures from 1-8 in the diagram.

4 Marks

1	.....	2	.....	3	.....	4	.....
5	.....	6	.....	7	.....	8	.....

2. What is the type of bacteria which have the provided structure?

1 Mark

.....

3. What is the function of the provided structure?

1 Mark

.....

3. What is the type of protein of the number (1)?

1 Mark

4. What is the function of structure number (5)?

1 Mark

.....

5. What is the function of structure number (8)?

1 Mark

.....

4. The provided structure is powered by 1 Mark

----- Good Luck -----

Prof. Dr. Mohamed Hemida Abd-Alla



Summer Term Exam, August 2018
Plant Morphology and Anatomy (221B)
Second level Students, Faculty of science

Exam. Date: 2/9/2018.
Time allowed: 2 hours.
Total Marks: 50 Marks.

Firstly: Answer the following questions:

(26 Marks)

Q1: Write in table the functions of each of the following:

(5 Marks)

- | | | |
|----------------------------|-------------------------|-------------------|
| 1- Nectariferous tissue. | 2- Parenchyma tissue. | 3- Brachysclerid. |
| 4- Sclerenchyma tissue. | 5- Laticiferous tissue. | 6- Hydathode. |
| 7- Ground meristem. | 8. Palisade tissue | 9-- Protoderm. |
| 10- Vascular tissue system | | |

Q2: Give reasons for each of the following:

(7 Marks)

- 1- Modification of stem in some plants into thorn (spiny stem) and phylloclade (leafy stem).
- 2- In some plants the leaves are adapted to catch and digest insects.
- 3- Collenchyma support fast growing organs of angiosperms.
- 4- Parenchyma is considered simple and primitive tissue.
- 5- Stomata are open in light.

Q3: Give one difference with drawing if possible between each of the following: (4 Marks)

- | | |
|---|--------------------------------------|
| 1- Radial vascular bundles and collateral bundles. | 2- Spring wood and autumn wood. |
| 3- Gramine stoma and universal stoma. | 4- Tap roots and adventitious roots. |
| 5- Endospermic seed and Exendospermic seed. | 6 - Summer buds and winter buds. |
| 6- Phloem & xylem of Gymnosperms and Phloem & xylem of Angiosperms. | |
| 8- Fibers and sclereids | |

Q4: Draw with labelled diagrams each of the following:

(5 Marks)

- 1- Two types of simple Mechanical tissue support young plants.
- 2- Various vascular bundles characteristic stem of Angiosperms.
- 3- Diagrammatic Transverse section in monocot. Stem OR monocot root.
- 4- Any three types of epidermal Trichomes.
- 5- Two types of resin and oil glands.

Q5: Match the items given in column A with the responses given in column B (5 Marks)

Column A

- 1- Acetylcholine
- 2- Histamine
- 3- Callose
- 4- Rubber
- 5- Quinine
- 6- Root cap
- 7- Bark
- 8- Dalchini
- 9- Tylose
- 10- Exarch xylem

Column B

- A- Root
- B- Calyptragen
- C- Stinging hair
- D- *Hevea brasiliensis*
- E- Plug the lumen of vessels
- F- Used as a spice
- G - Important in the treatment of malaria
- H- Is deposited on and around the sieve tubes
- I- Includes phloem, cortex and periderm
- j- Irritation of the skin
- k- Angiosperms
- L- Schizogenous glands

Secondly: Answer FOUR ONLY of the following: (6 Marks each)

- (1) A) Write an account of adaptation of structure to function of xylem vessels?
B) Name with drawing various parts of periderm?
- (2) What are the various criteria on the basis of which meristems can be classified? Give a brief account of various types of meristems based on their origin and locations in the plant body? List the characteristic features of the meristematic cell?
- (3) Write with drawing short notes on anomalous secondary growth in Dicot stems of Angiosperms, giving examples?
- (4) A- Describe with drawing different types of venation found in Angiospermic leaves?
B- Classify buds depending on their location in the plant body and mention their function?
- (5) Differentiate between heart wood and sap wood? Which of the two is more durable? Why? List the changes that occur during transformation sap wood into heart wood?
- (6) Write with drawing short notes on anomalous secondary growth in *Dracaena* stem. Compare and describe with drawing different types of vascular bundles characteristic old *Dracaena* stem?

“Good Luck”

Prof. M.H. Elmagdy

Assiut University, Faculty of Science Botany & Microbiology Department		جامعة أسيوط . كلية العلوم قسم النبات والميكروبيولوجي
Summer Term Exam, August 2018 Systematic Mycology 1, (262B) Second level Students, Faculty of science		Exam Date: 3/9/2018. Time allowed: 2 hours. Total Marks: 50 Marks.

Firstly: Answer the following questions:

Q1: Give in table one difference at least with drawing if possible between each of the following: (5 Marks)

- 1- Holocarpic fungus and Eucarpic.
- 2- Monocentric chytrid and polycentric.
- 3- Operculate chytrid and Inoperculate.
- 4- Ascomycetes and Deuteromycetes.
- 5- Order Saprolegniales and Leptomitales.

Q2: Draw with labelled diagrams each of the following: (6 Marks)

- 1- Gametangial Copulation as a mode of sexual reproduction in Zygomycotina.
- 2- Types of sexual spores in Ascomycetes and Basidiomycetes.
- 3- Types of simple fruit bodies (Ascomata) in Euascomycetes.
- 4- Any two types of Conidiomata.

Q3: Name and describe by drawing the causal organism (pathogen) of the following diseases: (10 Marks)

- 1- Club root disease of cabbage.
- 2- Late blight of potato.
- 3- Downy mildews of grape (vitis).
- 4- Damping off of seedling.
- 5- Black wart of potato.
- 6- Salmon.

• **Describe by drawing various methods of asexual reproduction of any causal organism of the above.**

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Q4: Give the scientific expression for each of the following: (4 Marks)

- 1- A famous fungus used in the study of sex hormones in fungi.
- 2- Fungus attacks house flies and called insect destroyer.
- 3- A hormone attracting male gametes produced by *Allomyces*.
- 4- It is called sewage fungus because it is found in polluted water.
- 5- The successive production of two different types of zoospores by single fungus.
- 6- Development of secondary zoosporangium into the empty primary one in *Saprolegnia*.
- 7- The short hyphae which penetrate the substratum and absorb nutrition in aquatic fungi.
- 8- Specialized structures produced by intercellular hyphae of obligate parasite fungi to absorb food.

Secondly: Answer Five ONLY of the following: (5 Marks for each)

- 1- Write short notes on various methods of nutrition in fungi, giving examples.
- 2- Classify class Oomycetes? Showing the basis of classification and evolutionary trends in this class.
- 3- Write short notes with drawing on fragmentation as asexual reproduction in fungi.
- 4- Define flagellation? Write short notes with drawing on its importance in classification of Mastigomycotina.
- 5- Give an illustrated account of zoospores behaviour in Saprolegniaceous fungi?
- 6- Classify order Peronosporales, showing the basis of classification? Write an account of behaviour of sporangia in the most advanced family belong to this order.
- 7- How can differentiate between *pythium* and *phytophthora* with regard to sporangial shape, zoospores differentiation and mode of infection.
- 8- How can genus *Allomyces* be classified? Write short notes with drawing on its sporothallus? Comment on its plasmogamy.

“Good Luck”

Prof. M. H. Elmagdy