

Academic Year Final Examination 2017/2018

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

Students of Group One

Examination Points: 50 Marks

Date of the exam.: Wednesday 10/1/2018

Time allowed: Two hours

Section A: 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-Zygospore is nest-shaped in.....

a-Mortierella

b-*Phycomyces*

c-Absidia

d-Zygorhynchus

2-The sporangiophore is solitary and unbranched in.....

a-Thamnidium

b-*Phycomyces*

c-Rhizopus

d-Mucor

3-The fungal thallus is homothallic in.....

a-Absidia

b-Syncephalastrum

c-Zygorhynchus.

d-Mucor

4-The plasmodium in Myxomycetes is.....

a-Diploid

b-Haploid

c-Uninucleate

d-Binucleate

5-Zoospores are.....

a-Immotile spores

b-Sporangiospores

c-Planospores

d-Conidia

Question Two:-

20 Marks

Answer FIVE ONLY of the followings:-

A-Explain with drawing the different methods of fusion of sexual elements in the fungi.

4 Marks

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

4 Marks

1-Intercellular and intracellular mycelia

2-Budding and bifission in yeasts

3-Synnema and sporodochium of conidiomata

4-Mesophilic and thermophilic fungi

باقى الأسئلة خلف الصفحة

Section B : Bacteriology

Answer the following questions:

First question: Compare between three only of the following:

(6 marks)

1. Capsule and slime layer
2. Gram positive and Gram negative bacterial cell wall
3. Capsid and Capsomere
4. Rickettsia, chlamydia and mycoplasma

Second question: Write on two only of the following:

(10 marks)

1. Arrangements, structure and function of flagella.
2. Staphylococcal food poisoning.
3. Treatment and Prevention of Virus Infections

Third question: Complete the following sentences:

(9 marks)

1. prevents formation of interpeptide bond between M and M but
..... breaks glycoside bond between M and G.
2. present in Gram positive bacteria only.
3. is a small circular, double-stranded DNA.
4. The functions of pili include,, and
5. Archaeal cell walls do not have
6. Bacteriophage is

Good luck

Dr. Amal Danial

C-Describe with drawing the morphological features of the related genera and the evolution criteria in the families; Thamniaceae and Choanephoraceae of the Order: Mucorales. 4 Marks

D-Mention the general characteristics of Class: Plasmodiophoromycetes and explain with drawing the primary phase of cabbage roots infection caused by *Plasmodiophora brassicae*. 4 Marks

E-Describe with drawing the different categories of conidial septation in the fungi. 4 Marks

F-What is the meaning of plectenchyma. Explain with drawing the kinds of plectenchyma in the fungi. 4 Marks

مع أطيب التمنيات - أ.د. عصام حسنى على

التواصل

16)The most important role of the prokaryotic cell wall is to maintain the shape of the cell.

- A) protect the cell from osmotic pressures.
- B) prevent ions from diffusing away from the cell.
- C) block the effects of antibiotics like penicillin.
- D) Maintain the shape of the cell

17)Which of the following is not true about capsules and slime layers?

- A) They consist of secreted material lying outside of the bacterial cell wall.
- B) They can prevent desiccation of bacteria cells.
- C) They are required for bacteria to grow normally in culture.
- D) They help bacteria resist phagocytosis by macrophages.

18)Fimbriae

- A) attach bacteria to various surfaces.
- B) cause bacteria move through fluids.
- C) sense changes in nutrient concentration.
- D) are pathways for the secretion of exoenzymes

19)Complete oxidation of glucose in aerobic respiration can yield a net output of _____ ATP.

- A) 40
- B) 6
- C) 38
- D) 2

20)A bacillus bacterium with a single flagellum at each end is described as

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

A cell exposed to a hypertonic environment will _____ by osmosis:

- A) gain water B) lose water C) neither gain nor lose water D) burst

22) A bacterial population increased from 100 to 100000000 in 15 hours what is the generation time?

- A) 30 minutes
B) 45 minutes
C) 60 minutes
D) 2 hours
E) Not enough information to determine the generation time

23). Psychrophiles would be expected to grow:

- A) in hot springs
B) on the human body
C) at refrigeration temperatures
D) at low pH

24) What is the purpose of bacterial endospores?

- A) Allow the bacterium to make hundreds of "seeds" to spread on the wind.
B) Help the bacterium to differentiate into faster growing stages of bacteria.
C) Allow the bacterium to survive the absence of oxygen.
D) Allow the bacterium to survive extended periods of heat or dryness.

25) Which of the following microscopic methods would have the greatest useful magnification?

- A) single lens simple video microscopy B) phase-contrast microscopy
C) scanning electron microscope D) fluorescence microscopy
E) dark field microscopy

Thirty-six colonies grew in nutrient agar from 1.0 ml of sample withdrawn from a solution diluted to 10^{-5} in a standard plate count procedure. How many cells were in the original sample?

- A) 360
- B) 3,600
- C) 360,000
- D) 1,800,000
- E) 36,00000

27) Thirty-six colonies grew in nutrient agar from 0.1 ml of sample withdrawn from a solution diluted to 10^{-3} in a standard plate count procedure. How many cells were in the original sample?

- A) 360
- B) 3,600
- C) 360,000
- D) 1,800,000
- E) 3,600,000

28) Which of the following is the best definition of generation time?

- A) The length of time it takes for lag phase.
- B) The length of time it takes for a population of cells to double.
- C) The maximum rate of doubling divided by the initial count.
- D) The duration of log phase.
- E) The time it takes for nuclear division.

29) An experiment began with 4 cells and ended with 128 cells. How many generations did the cells go through?

- A) 64
- B) 32
- C) 6
- D) 5
- E) 4

you start out with a population density of 200 CFU/ml of a bacterium that divides every 30 minutes, what will the population density be at the end of two hours, assuming the cells are in the log phase of growth

- A) 1200 CFU/ml
- B) 2^6 CFU/ml
- C) 3200 CFU/ml
- D) 12800 CFU/ml
- E) 200^6 CFU/ml

31) A culture of bacteria produces 5 generations in 2 hours. What is the generation time for this bacterium under

- A) 15 minutes
- B) 24 minutes
- C) 30 minutes
- D) 0.75 hours
- E) 1 hour

32) what of following is used to grow bacterial cultures continuously Which of the

- A) Chemostat
- B) Coulter Counter
- C) Hemostat
- D) Petroff-Hausser chamber
- E) Bacteria cannot be grown in continuous culture

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

- A) Cyanobacteria B) Bdellovibrios C) Mycoplasmas D) Spirochetes

34) A 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

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35) Some organisms can use reduced inorganic compounds as electron donors and are termed as

- A) Lithotrophs B) phototrophs C) chemotrophs D) photo-organotrophs

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

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

37) Which of the following organisms typically get their carbon for biosynthesis from

- A) Glucose-fermenting bacteria (fermentation)
B) Anaerobic, glucose-respiring bacteria (anaerobic respiration)
C) Aerobic, glucose-respiring bacteria (aerobic respiration)
D) Ammonia-oxidizing bacteria (chemolithotrophic bacteria)

38) An organism that expends energy to grow in a habitat with a low water activity in order to maintain intern

- A) Osmotolerant B) acidophile C) aerotolerant anaerobe D) Alkalophile

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

- A. $N = No2^n$
B. $\log N/No = (0.3010) n$
C. $\log(N/No) = n \log 2$
D. All of these

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

- A. Osmotolerant
B. acidophile
C. neutrophile
D. aerotolerant anaerobe

1.) Mode of action of Penicillin and sulfur drugs

(10 Marks)

Good luck



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 A gliding motion, the mechanism of which is not understood, is a characteristic of?
a. *Bacillus cereus* b. *Spirillum volutans* c. *Micrococcus roseus* d. *Cytophaga*
- 2 When exposed to harsh conditions, some bacteria form
a. capsules b. pili c. endospores d. flagella
- 3 Which of the following is correct for membranous infolding in bacteria that initiate DNA replication?
a. nucleosome b. carboxysome c. magnetosome d. mesosomes
- 4 Penicillin interferes with bacterial cell synthesis by inhibiting?
a. NAG-NAM linkage b. transpeptidase c. synthetase d. rasemase
- 5 Which of the following is not a characteristic of certain psychrophilic bacteria?
a. Grow at 0° b. unsaturated fatty acid c. saturated fatty acids d. Peptidoglycan
- 6 Which one of the following antibiotic inhibited lipid phosphatase, preventing the release of murine from its lipid carrier?
a. cycloserine b. bacteriocin c. penicillin d. vancomycin
- 7 Which of the following may be most likely to be missing from a gram-positive bacterium?
a. penicillin binding protein b. peptidoglycan c. lipopolysaccharide d. plasma membrane
- 8 Which of the following is inhibited by tetracycline?
a. Protein synthesis b. Cell wall synthesis c. Nucleic acid replication d. Transpeptidase
- 9 A cluster of polar flagella is called
a. lophotrichous b. amphitrichous c. monotrichous d. peritrichous
- 10 Who was the first person identified the causative agents of anthrax and tuberculosis?
a. John Snow b. Joseph Lister c. Ignaz Semmelweis d. Robert Koch
- 11 Which one of the following organisms is used in yoghurt manufacture?
a. *Streptococcus pyogenes* b. *Streptococcus lactis* c. *Streptococcus mutans* d. *Streptomyces globisporus*

Your answer

1	2	3	4	5	6	7	8	9	10	11

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

10 Marks

No	Statement	Scientific term
1	Structures that enable the bacteria to adhere to host cell	
2	Structures that protect bacterial cells from phagocytosis	
3	Hallow projection involve in transfer of DNA between compatible bacteria.	
4	G+ve cell which has lost its peptidoglycan	
5	Transfer of genetic information from a donor to a recipient using Naked DNA	
6	Chemical agents that are used on living tissue without damaging it	
7	Genes whose expression is turned on by the presence of some substance	
8	Bacteria that obtain energy from light and use CO ₂ fixation as sole carbon source.	
9	A compound found in endospores and not vegetative cell	
10	Bacteria which live in dry environments	
11.	The length of time in which 90% of a bacterial population will be killed at a given temperature	

Q3. Write the suitable definition for each scientific term (Ten only).

10 Mark

No	Scientific term	Definition
1	Selective medium	
2	Slime layer	
3	Thermal death time	
4	phototaxis	
5	Growth factors	
6	Magnetotaxis	
7	Thermal death point	
8	Disinfection	
9	Pasteurization	
10	Synthetic medium	
11	transduction	

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

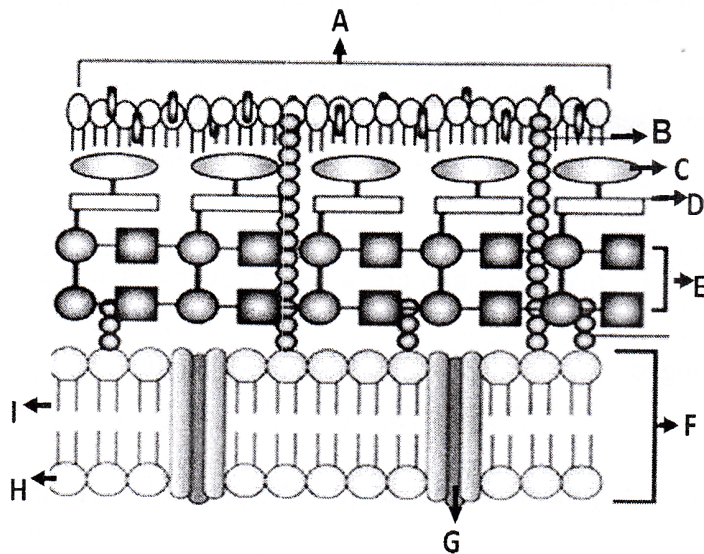
10 Marks

1. *Streptococcus mutans* is the causal agent of
2. The causal agent of lumpy jaw disease in cattle is.....
3. The causal agent of syphilis is
4. Sulfanilamide is structure analog to.....and block the conversion of.....to.....
5. The antibiotic..... is structure analaog to phesphoenol pyruvate and blocks the formation
6. The antibiotic..... is structure analog to D alanine and bind with.....and.....
7. The dynamic of the bacterial growth curve is characterized by different stages namely.....
8. Thermophilic bacteria adapted to temperature above 65° due to.....
9. Presence of glucose in medium inhibited conversion of..... to.....by enzymeand resulted in lactose operon turn off.
10. Non-ionizing radiation has.....and causes cell damage by forming
11. Integration of bacterial plasmid with bacterial chromosome is called

Q4. Look at the diagram provided and answer the following:

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

4 Marks



A..... B..... C.....
D..... E..... F.....
G..... H..... I.....

2. Which type of differential staining can be applied for diagnosis of these bacteria?

1 Mark

3. Which of the above structures is water soluble and water insoluble portions?

1 Mark

4. What is the type of bacteria which have the above structure?

1 Mark

5. Write two functions for structure F.

1.5 Mark

6. Write two functions for structure E.

1.5 Mark

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

Prof. Dr. Mohamed Hemida Abd-Alla



بسم الله الرحمن الرحيم

Assiut university-

Fac.Of Science

2016/2017 First term Bot.& Microbiol.Dept.

Bacteriology 271 N second Group 50 Marks

Time allowed: 2 houres

Date 4.1.2018

**choose the correct answer of each of the following:One
markeach**

1)What is a plasmid?

- A) Self-replicating segment of double stranded DNA
- B) Self-replicating segment of single stranded RNA
- C) A bacterial chromosome

2)The significance of the plasma membrane is that

- A) it selectively allows some molecules to pass into the organism
- B) it prevents movement of molecules out of the organism
- C) it is the site of protein synthesis
- D) all of the above

3)In bacterial cells, ribosomes are packed into the cytoplasmic matrix and also loosely attached to the plasma

- A)Site of energy production
- B)Site of protein synthesis
- C) Site of genetic reproduction

4) Plasmids are important to the genetics of many bacteria. This is because

- A) they are inherited from one generation to the next.
- B) they may carry genes that give their host a selective advantage.
- C) they can render bacteria drug-resistant.
- D) All of the above.

5) Bacteria do not always swim aimlessly but are attracted by such nutrients such as sugar and amino acids, and

- A) gliding motility.
- B) tumbling.
- C) chemotaxis.

6) Some bacteria are considered pleomorphic. This means

- A) they are shaped like bent rods.
- B) they have a corkscrew shape.
- C) they do not have just one shape.
- D) they are not either bacilli or cocci.

7) Poly-beta-hydroxybutyrate inclusion bodies

- A) protect bacteria from excessive drying.
- B) store carbon for energy and biosynthesis.
- C) turn reddish brown when stained with iodine.
- D) are composed of polymers of glucose.

8) Gas vesicles in bacteria

- A) help move cells to optimal nutrient levels.
- B) store oxygen for growth anaerobically.
- C) are bounded by a lipid bilayer membrane.
- D) are bounded by a membrane impervious to gas.

9) Magnetosomes in bacteria

- A) help cells attach to metal objects.
- B) help cells to magnetically attach to each other.
- C) help cells to float on the surface of fresh water ponds.
- D) help cells to orient in the earth's magnetic field.

10)The 70S procaryotic ribosomes consist of

- A) two 40S subunits
- B) a 50S and a 20S subunit
- C) a 50S and a 30S subunit.
- D) a 40S and a 30S subunit.

11)Gram positive cells

- A) have a second, outer membrane that helps retain the crystal violet stain.
- B) have multiple layers of peptidoglycan that help retain the crystal violet stain.
- C) have a thick capsule that traps the crystal violet stain.
- D) have a periplasmic space that traps the crystal violet.

12)The presence of D-amino acids in the crosslinks of the peptidoglycan layer is most likely because

- A) most peptidases can only cleave L-amino acids.
- B) D-amino acids fit the structural constraints of the cell wall better than L-amino acids.
- C) most L-amino acids have already been used for protein synthesis.
- D) D-amino acids are easier to crosslink in the absence of ribosomes.

13)Gram positive cells

- A) have thick, homogeneous cell walls.
- B) have large amounts of teichoic acids.
- C) do not have an outer membrane.
- D) all of the above are true.

14)The third amino acid in the peptidoglycan crosslinking chain is either diaminopimelic acid or lysine

- A) be positively charged for a salt bridge to form.
- B) be hydrophilic
- C) have a free amino group for peptide bond formation.
- D) have a large R-side chain to fill space in the cell wall.
- E) The outer membrane of Gram negative cells is more permeable than the plasma membrane because

15)The outer membrane of Gram negative cells is more permeable than the plasma membrane because

- A) LPS is larger than most membrane phospholipids.
- B) lipoproteins stretch the outer membrane.
- C) porin proteins establish holes in the outer membrane
- D) the core polysaccharide spans the lipid bilayer



Please Answer the following Questions [50 Marks]

(A) Which terms are correct (✓) and which are not (X) (10 M)

- 1- Visible symptoms doubtably reflect internal changes()
- 2- Satellite virus multiplies only in TNV- infected plant to which it is serologically related()
- 3- Protein + nucleic acid most closely in contact with it is called nucleocapsid ()
- 4- A plant once infected unusually remains so()
- 5- Animal viruses infect all tissues of their hosts ()
- 6- Carbohydrates may associated by 7 % with viral protein.....()
- 7- () means: enclosed data is not known()
- 8- Coxsackie virus derived its name from mode of transmission ()
- 9- nm equals to $1/10^3 \mu\text{m}$()
- 10- Diener is the father of Virology()

(B) Where are the odd words? (7 M)

- 1- Rods – Caulimovirus – DNA – 50 nm.
- 2- 2- thiouracil – Dyes – Nicotinic acid – Adenylic acid .
- 3- Enations – Bulbs - Tubers – Corms.
- 4- F- Ap – Fu – Ne.
- 5- DNA - Poly A – Vp_3 — RNA.
- 6- Protein – RNA – Diener – Viriods.
- 7- Bulbs – Tattooing – Inhalation – Dogs.

(C) Match the suitable meanings in column (A) with the scientific titles in column (B)..... (10 M)

1-Pathogen contains RNA only	[] Independent transmission
2-Viruses may coming from another planets	[] Virioids
3-Death of cells	[] R/1:0.4/20: S/S:S/Fu
4-Only one virus in doubly infected host is aphid transmissible	[] Gibbs concept
5-Virion protein genome	[] Necrosis
6- Using heat for controlling virus	[] dependent transmission
7-Virus movement via vascular elements	[] Meristem
8-Tobacco necrosis virus	[] R/1:1.5/19:S/S : S/ Fu
9-Tissues that may not infected with plant viruses	[] Heat therapy
10-The best known and studied virus in a group	[] Type member
	[] Vpg
	[] IgG
	[] Systemic infection
	[] Chemotherapy

D) Give a scientific title for each term (5 M)

- 1- Amorphous Structures formed in virus – infected hosts.
- 2- An association makes aphids able to transmit viruses forever.
- 3- Characteristic lignified strands in vessels of some virus – infected hosts.
- 4- Aggregates of vesicles in between cell wall and plasmalemma.
- 5- Example of plant group all its members are transmitted by nematodes.

(E) Explain the following cryptogram (3 M)

V:R/I : 1.3/6+0.8/6: E/E: (S)/ Ap

(F) Define (4 M)

1- Kassanis and Govier Proposal.

(G) Complete (7 M)

1- Symptoms are variable and depend in their appearance on: (3 M)

2- Factors that must be found to make transmission by contact successful are :
(4 M)

(H) Give 3 differences between Plant – and animal – virus infections (4 M)

Good luck
Prof. S.K. Hemida

	First-Term Exam 2017/2018	
Botany & Microbiology Department	Plant Physiology (251 B) Second Level (Credit hours)	Time: 2 hours

Q1) Choose the correct answer:

(10 Marks)

- 1- 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
- 2- When two solutions that differ in solute concentration are placed on either side of a semi-permeable membrane and osmosis is allowed to occur, which of the following will happen?**
 - a) Water will move from an area of low solute concentration to an area of high solute concentration
 - b) Water will move from an area of high solute concentration to an area of low solute concentration
 - c) There will be no net movement of water
 - d) The solute will move from the area of high concentration to an area of low concentration
- 3- What is one property of a suspension that is different from that of a solution or a colloid?**
 - a) If left to rest, the particles of a suspension will settle out.
 - b) The particles of a suspension reflect light.
 - c) A suspension is always clear
 - d) Suspensions are colorless
- 4- How is a colloid different than a suspension?**
 - a) Particles are homogeneous in a colloid, but heterogeneous in a suspension.
 - b) Particles will scatter light in a suspension, but not in a colloid.
 - c) Colloids are solutions, suspensions are not.
 - d) Suspensions can be separated using filter paper, colloids cannot.
- 5- 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.
- 6- Which one of the following forms of soil water is commonly absorbed by plants?**
 - a) Hygroscopic water
 - b) Capillary water
 - c) Gravitational water

7- 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

8- In most species, as K^+ moves in or out of the guard cell to regulate the stomatal opening, there is movement in the opposite direction by

- a) Na^+
- b) H^+
- c) OH^-
- d) Cl^-

9- In the absence of transpiration water moves into and up xylem because of

- a) Root pressure
- b) Turgor pressure
- c) Evaporation
- d) High soil mineral concentration

10- High root pressure can cause water to be lost by leaves through the process of

- a) Respiration
- b) Regurgitation
- c) Transpiration
- d) Guttation

11- The element, _____, is important as a component of ADP and ATP.

- a) Phosphorus
- b) Magnesium
- c) Potassium
- d) Chlorine

12- 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) Distinguish between three of the following: (6 Marks)

- 1- Active absorption and passive absorption.
- 2- Flocculation of Lyophilic and Lyophobic colloids.
- 3- Apoplastic and symplastic pathway
- 4- Calcium and Magnesium functions in the plant.

Q3) Write on three of the following: (6 Marks)

- 1- Plant Available Water (PAW).
- 2- The relation between osmotic pressure, turgor pressure, and suction pressure (D.P.D.) when $\text{Opi} > \text{Ops}$.
- 3- Cohesion tension theory.
- 4- Mechanism of stomatal opening and closing (Starch - Sugar hypothesis)

Q4) define: plasmolysis - imbibition - adsorption (3 Marks)

Q5) 1- Compare between two of the following: (6 Marks)

- a- Phosphatase and kinase enzyme
- b- Oxidase and peroxidase enzyme
- c- Oxidative phosphorylation and oxidative photophosphorylation

2- Write short notes on three of the following: (9 Marks)

- a- Lock and key model
- b- Isomerases enzymes
- c- Assimilation of carbon dioxide to fructose 6 phosphate
- d- Explain the steps converting glucose to ethyl alcohol

Q6): Choose the correct answer: (10 Marks)

1- Acceptor of acetyl coenzyme A in Krebs cycle is

- a) Citric acid
- b) Oxaloacetic acid
- c) Fumaric acid
- d) succinic acid

- 2- When electrons in the reaction-center chlorophyll become so excited; they escape to a nearby
- a) Primary electron acceptor molecule c) Cellular wall
 - b) Chloroplast d) Cellular membrane
- 3- Photosystems are functional pigment groups located on the
- a) Proteins of the plasma membrane c) Thylakoids membranes
 - b) In the stroma of the chloroplasts d) The fluids of vacuoles
- 4- The oxygen released during photosynthesis comes from the
- a) Splitting of water molecules b) Formation of ATP
 - c) Formation of glucose d) Splitting of carbon dioxide molecules
- 5- Cellular respiration starts by glycolysis in the
- a) Cytoplasm c) Chloroplast
 - b) Stroma d) Matrix
- 6- The oxidized form of nicotinamide adenine dinucleotide is:
- a) NADH_2
 - b) NAD^+
 - c) NADP^+
 - d) NADPH_2
- 7- Oxidation of pyruvate into acetyl CoA is a transition reaction linking glycolysis to
- a) Krebs cycle b) Calvin cycle c) Oxidative phosphorylation d) Dark reactions
- 8- The "lock and key hypothesis" attempts to explain the mechanism of
- a) Vacuole formation b) Sharing of electrons c) Enzyme specificity
- 9- The first stable compound of Calvin cycle is
- a) Phosphoglyceric acid c) Malic acid
 - b) Glucose d) Phosphoglyceraldehyde
- 10- Splitting of fructose 1,6 diphosphate to 2 molecules of phosphoglyceraldehyde by
- a) Epimerase b) Diastase c) Aladolase d) Invertase
- 11- In the light dependent reactions, when light strikes the pigments (P700 or P680) what is the immediate result?
- a) Electrons are fused to form ATP
 - b) Excited electrons are passed to electron acceptors c) Glucose is produced
 - d) Carbon fixation occurs
- 12- Which of the following statements is most correct
- a) Aerobic respiration occurs without oxygen and makes 2ATP
 - b) Aerobic respiration occurs with oxygen and makes 36ATP
 - c) Anerobic respiration occurs with oxygen and makes 36ATP
 - d) Anerobic respiration occurs without oxygen and makes 36ATP

Good Luck

Dr. Abeer Radi

Dr. Fatma Farghaly

Faculty of Science
Botany and
Microbiology
Department

بسم الله الرحمن الرحيم



كلية العلوم
قسم النبات والميكروبيولوجي

Plant Ecology
Course No. 241 B
50 marks

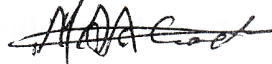
Second Semester Final Examination: 2017-2018
Second Level: Botany and Microbiology
Time allowed: Two Hours

Answer the following questions:

- 1- Discuss briefly **THREE ONLY** of the following: (18 marks)
 - a- The role of earth's atmosphere in changing the radiation reaching the earth. (6 marks)
 - b- Deformation and anatomical modifications by wind. (6 marks)
 - c- The differences in appearance and structure between plants kept in the light and those kept in the dark. (6 marks)
 - d- Life forms of aquatic plants. (6 marks)
- 2- Compare between each two of the following (answer **THREE ONLY**): (21 marks)
 - a- The ecological importance of air humidity and soil organic matter. (7 marks)
 - b- Sandy soils and loamy soils. (7 marks)
 - c- The chemical and physical weathering processes which lead to the soil formation. (7 marks)
 - d- Parasitism and mutualistic relations. (7 marks)
- 3- Choose the correct answer: (11 marks)
 - 1- The quantity of energy received by or contained in the body is generally expressed as
 - a- $^{\circ}\text{C}$
 - b- g. cal/cm² /h.)
 - c- Lux
 - 2- The retention of water in the soil is primarily due to the force of
 - a- gravity
 - b- cohesion
 - c- adhesion
 - 3- Plants growing on other plants are called (1 mark)
 - a- endophytes
 - b- epiphytes
 - c- hydrophytes
 - 4- 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
 - 5 - refers to transport of diaspores on outside of animals.
 - a - Endozoochory
 - b- Mesozoochory
 - c- Epizoochory

- 6- Altitude shows fall of temperature of 1°C for every additionalof height. (1 mark)
a- 180 m b-280 m c- 480 m
- 7- In herbaceous plants wind blowing may stimulate the formation of more (1 mark)
a- aerenchymas b- parenchymas c- collenchymas
- 8- Energy transfers between the living components of the ecosystem called (1 mark)
a- the mineralization chain b- symbiosis c-- the food chain
- 9- The particles of sandy soils are typically of (1 mark)
a- silica b- alumino- silicates c- calcium carbonates
- 10- 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
- 11-plants can form their flower buds under any period of illumination. (1 mark)
a- day neutral plants b- short day c- long day

Good Luck



Prof. Dr. Mohamed Abou El-Ela



إمتحان النبات الإقتصادي (211 ن)

لطلاب المستوى الثاني (نظام الساعات المعتمدة) الترم الأول 2017-2018

الدرجة الكلية : 50 درجة

الإمتحان في صفحتان

الزمن : ساعتان

(15 درجة)

السؤال الاول :- اختر الإجابة الصحيحة مما يلي:-

1- نسبة البادئ تكون	أ- 1-10%	ب- 10-20%	ج- 20-30%	د- 30-40%
2- عند إنتاج الجليسرول بطريقة السلفيت كل 100 جزي سكر يعطي جزي جليسرول.	أ- 10	ب- 20	ج- 30	د- 40
3- يصل ناتج السوربوز الى عند اضافة السوربيتول بنسبة 15-25% لبيئة الانتاج ويستغرق التخمر 15-40 ساعة في الطريقة العميقة.	أ- 10%	ب- 20%	ج- 70%	د- 90%
4- يرسب حامض اللاكتيك في المخمر بواسطة إضافة مادة	أ- المولاس	ب- الكحول	ج- الجير	د- الأسيتون
5- تستخدم بكتريا <i>Clostridium butricum</i> في إنتاج	أ- حمض البيوتريك	ب- الأسيتون	ج- البيوتانول	د- الريبوفلافين
6- يستخدم نبات اللاحاح في علاج أمراض	أ- القلب	ب- الروماتيزم	ج- العيون	د- اللثة
7- العلاج الوحيد لمرض الملاريا يستخرج من	أ- ورقة	ب- برعم	ج- قلف	د- جذر
8- تختلف الزيوت العطرية عن الزيوت الثابتة في قدرتها علي	أ- تحمل الحرارة	ب- التطاير	ج- تحمل الرطوبة	د- التبخر
9- لإنتاج واحد طن من عطر البنفسج يلزم استخدام طن من الازهار.	أ- 5	ب- 10	ج- 15	د- 20
10- تتكون الزيوت الدهنية السائلة من جلسرين وحامض دهني في الغالب يستخدم حامض	أ- الأوليك	ب- البالميكتك	ج- الستياريك	د- كل ما سبق
11- الزيوت المجففة تستخدم في حيث أنها تمتص الاكسجين عند تعرضها للهواء وتجف	أ- الصابون	ب- الدهانات	ج- ادوات التجميل	د- الشموع
12- تعتبر من اكبر دول العالم في إنتاج البن حيث تنتج ربع الانتاج العالمي.	أ- مصر	ب- كولومبيا	ج- اسيا	د - البرازيل
13- عند تصنيع الشاي تهدف عملية اللف والتقطيع الى نشر إنزيم على جميع اجزاء الورق.	أ- الليبيز	ب- الأميليز	ج- البروتييز	د - الأوكسيديز
14- القطن المصري من افضل انواع القطن في العالم حيث تحتوي الألياف على سيليلوز.	أ- 10%	ب- 50%	ج- 70%	د - 90%
15- عملية الكتان يقصد بها فصل الثمار عن السيقان.	أ- هدير	ب- تعطين	ج - حلق	د - نقض

السؤال الثاني:- وضح دور الكائنات الدقيقة في عملية إنتاج إثنان فقط مما يلي:- (20 درجات)

- 1- الكحول الأيثيلي.
- 2- حامض الخليك.
- 3- الأسيتون والبيوتانول.
- 4- البنسلين.

السؤال الثالث:- أذكر ما تعرفه عن ثلاث نقاط فقط مما يلي :- (15 درجات)

- 1- أنواع التحولات الكيميائية التي تحدثها الفطريات لإنتاج أنواع مختلفة من الهرمونات.
- 2- العقاقير المستخرجة من الاوراق النباتية.
- 3- طرق إستخلاص الزيوت العطرية.
- 4- صناعة الورق.
- 5- أنواع الزيوت الدهنية.

مع تمنياتنا بالنجاح والتفوق دائما

د. غادة عبد المنصف محمود



Answer the following questions

(50 Marks)

Section (A):Mycology

1- Put (✓) or (×) in front of the following sentences and correct wrong one/s:- (5 Marks)

- a. Biotrophic fungi have ability to grow on synthetic medium. ()
- b. Budding yeast divides by normal mitosis to produce two daughter cells of equal size. ()
- c. Fungal cell contains a well-developed Golgi bodies. ()
- d. Asexual reproduction in fungi involves the fusion of the sex cells or the gametes. ()
- e. Gametangial contact in which fusion occurs between two motile gametes. ()

2- Write with drawings on four only of the following:- (10 Marks)

- a. Life cycle of a holocarpic fungus, with special reference to its pathogenicity for plants.
- b. Various types of sexual sporocarps.
- c. Gradual evolution of sporangium to conidium.
- d. Types of plectenchyma.
- e. The role of flagellation in classification of zoosporic fungi.

3- Differentiate between five only the following:- (10 Marks)

- a. Chyamydospores & Arthrospores.
- b. The different families of mucorales.
- c. *Sorosphaera* & *Spongospora*.
- d. *Sclerospora* & *Basidiospora*.
- e. *Zygorynchus* & *Phycomyces*.
- f. Heterothallism & Homothallism.

Good Luck

Dr. Elhagag A. Hassan

من فضلك اقلب الصفحة

Section (B): Bacteriology

(I) Put (✓) or (×) in the front of the following with correction of the wrong one: (5 marks)

- 1- Viruses are considered as obligate cellular parasites ()
- 2- Peptidoglycan keeps the cell from drying out and helps it stick to food or other cells ()
- 3- Bacteria can reproduced by binary fission to give two bacterial cells have $2n$ of chromosomes ()
- 4- Sex pilus plays a critical role to transfere the genetic material from bacterial cell to another through transduction process ()
- 5- Chemotrophic bacteria can obtain energy from the oxidation of organic or inorganic compounds ()

(II) Choose the correct answer of the following: (5 marks)

- 1- N-acetylglucosamine (NAG)+N-acetylmuramic acid (NAM)+pentapeptide is formed
a) Murein b) porin c) glycan d) Teichoic acids
- 2- During.....phase, the number of dead cells exceeds the number of live cells
a) Lag b) Log c) Decline d) stationary
- 3- The bacteria that live in a close association with other organisms is
a) free-living b) parasitic c) saprophytic d) symbiotic
- 4-is A spiral-shaped bacteria cause gastritis and duodenal ulcer disease
a) *Pseudomonas sp* b) *Helicobacter pylori* c) *Vibrio cholera* d) a,b,&c
- 5- Cyanobacteria belong to
a) photautotroph b) chemoautotroph c) chemoheterotroph d) phatoheterotroph

(III) Discuss the following (7 marks)

- 1- Different position of flagella in the bacterial cells.
- 2- Relationship between the structure and function of bacterial endospore.
- 3- Antibiotic classification based on bacterial target site.

(IV) Compare between the following: (8 marks)

- 1- Lytic and Lysogenic cycle of Bacteriophage.
- 2- Cell wall of Gram positive and Gram negative bacteria.

With All my best wishes
Dr. Asmaa M. M. Mawad

Assiut University, Faculty of Science,

Botany & Microbiology Department



جامعة أسيوط . كلية العلوم
قسم النبات والميكروبيولوجي

First Term Exam, 2017/2018

Plant Morphology and Anatomy (221B)

Second level Students, Faculty of science

Exam Date: 31/12/2017

Time allowed: 2 hours.

Total Marks: 50 Marks.

Plant Anatomy (30 Marks)

Firstly: Answer THREE only of the following: (6 Marks for each)

- 1- Which of the secondary tissues are produced by the activity of vascular cambium? Describe with the help of diagrams how can dicot. root increases in thickness.
- 2- Classify meristems depending upon their function? Name the locations in the plant body where you can find meristems? List the characteristic features of meristematic cells?
- 3- What do you understand by **abnormal secondary growth**? Describe the process of **abnormal secondary thickening in Dicot. stems**? Giving examples?
- 4- A. Define and name compound tissues you are studied? Write an account of adaptation of structure to function of any tissue of them?
B. what are the various shapes of sclereids? What do you know about their origin and function?

Secondly: Answer SIX only of the following: (2 Marks for each)

- 1- Name different types of tissue systems found in the plant body?
- 2- What are the common locations where you can find Collenchyma and interfascicular cambium?
- 3- Write short notes on laticiferous tissue.
- 4- Any tissue you are studied support fast growing organs in plants? Why ?
- 5- **Differentiate** between:-
 - Porous and non porous wood.
 - Exarch and Endarch primary xylem.
- 6- **Name** :-
 - Two products obtained from bark and mention their uses.
 - Two compounds secreted by stinging hairs.
- 7- **Give reasons** for **ONE** only :-
 - Heart wood is more durable than sap wood.
 - Annual rings are more distinct in plant growing in temperate regions.

Good luck

Prof. M. A. Elnagdy



انظر خلفه

Plant Morphology (20 Marks)

Answer the following questions:-

Q1: Compare in table (with drawing) between four only of the following :- (8Marks)

- 1- A cladode and a phylloclade.
- 2- Ex-endospermic seeds and endospermic seeds.
- 3- Apical (dichotomous) and monopodial stems branching.
- 4- Aerial roots and pneumatophores.
- 5- Compound leaf and stem (branch of stem).

Q2: Draw a labeled diagram (only three) of the following: - (4.5 Marks)

- 1- The different types of phyllotaxy.
- 2- Types of buds according to location.
- 3- Steps of broad bean seed (hypogeal) germination.
- 4- Tap root system and adventitious (fibrous) root.

Q3: Enumerate three only the following: - (4.5 Marks)

- 1- External and internal factors required for seed germination.
- 2- Types of weak stems.
- 3- Functions of modified roots.
- 4- Stipules according to their structure and relation to leaves.

Q4: Define three only of the following: - (3.0 Mark)

- | | | |
|-------------------|-----------------------|----------|
| a) Stratification | b) Carnivorous plants | c) Veins |
| d) Caudex stem | e) Buttress roots | |

Good luck Prof.dr: Suzan A. Sayed



Answer the first question and TWO from the other questions, giving short notes with drawing when these assist:

I: a- Pseudobranching and movement in Cyanophyta.

b- Asexual reproduction in *Volvox* and amylum stars.

c- Role of monospores in the life cycle.

(20 Marks)

II: Exospores.

Nucule.

Palmella stage in *Chlamydomonas*.

Auxospores.

Cystocarp.

(15 Marks)

III: Vegetative structure and sexual reproduction in *Oedogonium*.

(15 Marks)

IV: Vegetative structure, life cycle and alternation of generation in

Ectocarpus.

(15 Marks)

Good Luck

Prof. M. S. Adam