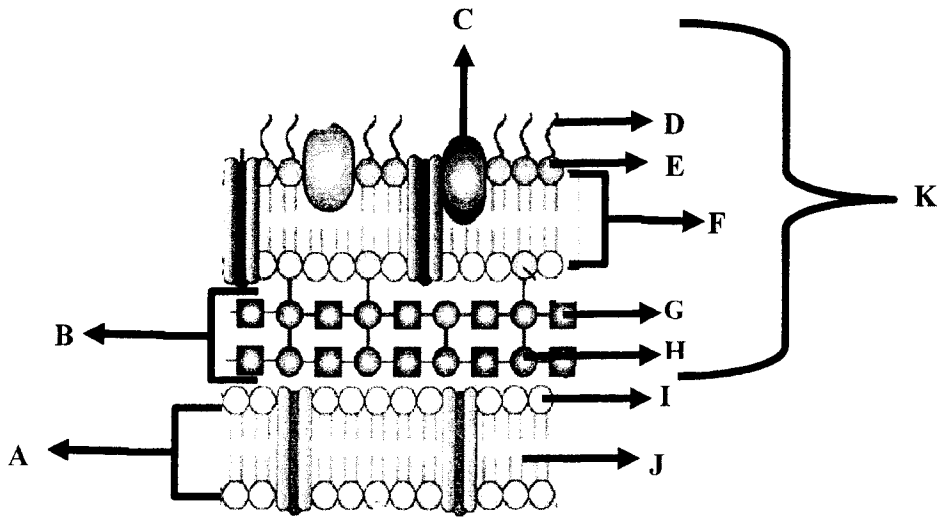
Q4. Look at the diagram provided and answer the following:

1. Identify each of the labeled structures from A-J in the diagram 5 Marks



A.....B.....C.....

D.....E.....F.....

G.....H.....I.....

J.....

2. Which of the above structures can cause toxic effects in a host? 1 Mark

.....

3. Which of the above structures is most hydrophobic and hydrophilic? 1 Mark

.....

4. What is the type of Gram stain reaction of the above structure? 1 Mark

.....

5. Write 2 functions for structure A. 1 Mark

.....

.....

6. Write 2 functions for structure K. 1 Mark

.....

.....

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

Prof. Dr. Mohamed Hemida Abd-Alla

14)The generation time of a culture that produces two generations per hour is
A.greater than that produces three generations per hour
B.lesser than that produces three generations per hour
C.equal to that produces three generations per hour
D.none of the above

15)Which of the following organisms typically get their carbon for biosynthesis from organic compounds
A.Aerobic, glucose-respiring bacteria (aerobic respiration)
B.Ammonia-oxidizing bacteria (chemolithotrophic bacteria)
C.Photosynthetic cyanobacteria (phototrophic metabolism)
D.None of the above

16)An organism is completely dependent on atmospheric O_2 for growth. This organism is
A.Osmotolerant
B.Acidophile
C.facultative anaerobe
D.obligate aerobe

17)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

18)Which of the following organisms typically get their carbon for biosynthesis from carbon dioxide?
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)

19)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

20)The organism which obtain their energy from chemicals are designated as
A.Prototrophs
B.Chemotrophs
C.Organotrophs
D.Autotrophs

26)specialized transduction is mediated by

a) Lytic phages
b) Lysogenjeyphages
c) Both a+b
d) T4 phages

27)
The unidirectional transfer of genetic material from donar bacterium to Recipient one is termed as

a) transformation
b) conjugation
c) transduction
e) genetic engineering

28)

Endospore formation is a method to tide over unfavourable condition

Which is generally seen in

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

29)

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.Each growth curve consists of four distinct phases

30)

The organism which grows best above 45°C are called
A.psychrophilic
B.mesosphilic
C.thermophilic
D.any of these

31)

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

Q4. Fill in the space with correct answer (Ten only). 10 Marks

1. *Treponema pallidum* is the causal agent of .....

2. The causal agent of Tetanus is.....

3. The causal agent of pharyngitis (sore throat)is ....

4. Sulfa drug block the conversion of.....to.....

5. The phosphonomycine is strucuture analaog to.....and blocks the formation .....

6. The antibiotic cycloserine is structure analog to.....and bind with.....

.....and.....

7. Halophilic bacteria require.....while Osmopiles are required.....

8. Oxygen is toxic to obligate anaerobic bacteria due to.....

9. Absence of glucose in medium activated conversion of..... to.....

by enzyme..... and resulted in full expression of lactose operon.

10. The *lac* operon is .....because require substrate while *Trp* operon is..... because turned off by end products

11. Ionizing radiation has.....and exerts its effect by.....and forming .....

Continued from page 1 to 4

الامتحـــان النهائى لمادة: أسس الوراثة (٢١٥ز)
الفصل الدراســـــي الاول
لطلاب كلية العلوم – ساعات معتمدة
للعـــام الجامعـــي ٢٠١٦-٢٠١٧
الزمن : ساعتان

السؤال الأول: (١٠ درجات)

أ- إذا كان ترتيب القواعد النيتروجينية فى جزء من شريط DNA هو 5-ATG GCT AGC TAA AGT GC-3

وضح ما يلى:

١) تتابع الشريط المتكامل معه فى جزئ DNA

٢) تتابع القواعد النيتروجينية المنسوخة من الخيط المكمل على mRNA

٣) عدد الأحماض الأمينية الناتجة من الترجمة مع تحديد شفرة البدأ و شفرة الايقاف

ب- أذكر المتطلبات اللازمة لعمل PCR ؟ - و إذا كان لديك ١٠٠ نسخ من الـ DNA في بداية التفاعل

فكم نسخة سيتم تخليقها بعد ٣٦ دورة PCR؟

السؤال الثانى : (١٥ درجة)

أ- أذكر فقط :

١- أهمية الهندسة الوراثية فى مجال الانتاج الزراعى؟

٢- الانزيمات المستخدمة فى عملية تضاعف الـ DNA

ب- اكتب المصطلح العلمى الذى تدل عليه كل عبارة من العبارات الاتية :

١- [ ] انزيمات تتعرف على مواقع معينة من جزىء DNA وتقطعه عندها

٢- [ ] جينات تعمل معا لإظهار صفة وراثيه معينة

٣- [ ] جزيئات صغيرة حلقية من DNA المزدوج توجد فى البكتريا تستخدم على نطاق واسع فى الهندسة الوراثية

٤- [ ] عملية حذف الانترونات وتجميع ولصق الاكسونات فى RNA الخاص بالكائنات الراقية

٥- [ ] المادة الكيميائة او الفيزيائية التى تسبب حدوث الطفرة

السؤال الثالث : (١٥ درجة)

أ- قارن بصورة مبسطة بين كل مما يأتي :

- Codon & Anticodon
- Nonsemse mutation & Missense mutation
- Trasversions & Transition
- النيوكليوتيدة & النيوكليوسيدة
- الصفة المرتبطة بالجنس & الصفة المتأثرة بالجنس

ب- فى حالة عدم التوافق الذاتي فى نبات الدخان إذا تم التهجين بين أفراد تركيبها ذكر S_1S_2 x S_2S_3 أنثى

فكم عدد الأفراد الناتجة ؟ فسر إجابتك

انظر خلفه

Assiut University
Faculty of Science
Department of Botany & Microbiology

جامعة أسيوط
كلية العلوم
قسم النبات والميكروبيولوجى

Chemistry/Zool. Students (4 Level) | First semester: 2016/2017
General Microbiology (291B) | Final exam.: 21/ January/ 2017
Prof. Mohamed Ahmed Abdel-Sater | Time allowed:2 hours (50 Marks)

I- Choose the correct answer for 10 only of the following: (10 marks, 1 each)

1- Which of the following fungus produces itaconic acid:
a- *Aspergillus niger* b- *Aspergillus terreus* c- *Aspergillus flavus*

2- Cell wall of Eubacteria consists of:
a- Glucose b- Chitin c- Peptidoglycan

3- The standard ending for class of fungi:
a-mycota b- mycetidae c- mycetes

4- Eukaryotic ribosomes are composed of:
a- 70S b- 80S c- 90S

5- Which of the following fungi causes infection of the skin in AIDS patients:
a-*Penicillium expansum* b- *P. italicum* c- *P. marneffei*

6- Oxidizes ammonia to nitrite with the release of energy:
a- *Nitrosomonas* b- *Nitrobacter* c- Sulphur bacteria

7- Reniform zoospores contain flagella in two types called:
a-Primary zoospores b- Secondary zoospores c- Aplanospores

8- A virus parasitizes some plants from some families:
a- Specilized b- limited c- Wide host range

9- When the counterstain is added, acid-fast bacteria stain:
a- Colorless b- Blue c- Red

10- Fungal hyphae is surrounded by a wall composed primarily of:
a- Cellulose b- Chitin c- Lipids

11- All viruses covered with sheath composed of:
a- Polysaccharide b- Protein c- Lipids

II- Identify 5 only of the following: (5 marks, 1 each)

1- Eucarpic fungi 2- Fimbriae 3- Homothallism

4- Central mesosomes 5- Merosporangium 6- Capsule

من فضلك أنظر خلفه

2. Explain with drawing five only from the following (20 marks)

1- Zones of nucleolus.

2- Stages of Prophase I in Meiosis

3- Ultra-structure and function of Golgi apparatus

4- The structure and chemical composition of the primary cell wall.

5- Ribosomes: structure and unit of measurement of their properties.

6- Shapes of the chromosomes according to the position of centeromer.

3. Compare with drawing "three only the following" (12 marks)

1- The plasma membrane in Archaeal, bacterial and Eukartotic cells.

2- Rough and smooth endoplasmic reticulum.

3- Grana in chloroplast and cristae in mitochondria

4- Paranemic and plectonemic coils of the chromonema.

4. Write briefly on four only of the following (8 marks)

1. Chromomeres
2. Karyotype
3. Satellite bodies
4. Leucoplast
5. Chemiosmosis

..... **Good Luck** .....

Dr. Ismail Ramadan Abdel-Rahim

III- Compare between 5 only of the following: **(20 marks, 4 each)**

1- **Gram positive and Gram negative bacteria.**
2- **Living and non-living characters of viruses.**
3- **Sexual and asexual fruiting bodies.**
4- **Transformation and transduction in bacteria.**
5- **Zygospores formation in *Rhizopus* and *Zygorrynchus*.**
6- **Autotrophic and heterotrophic bacteria.**

V- Write briefly (with illustration) on 5 only of the followings: **(15 marks, 3 each)**

1- **Medical importance of fungi.**

2- **Role of bacteria in agriculture.**

3- **Fragmentation in fungi.**

4- **Ascospores formation in a unicellular fungus.**

5- **Endospore formation in bacteria.**

6- **Genera related to Family: Mucoraceae.**

Good Luck **Prof. M. A. Abdel-Sater**

6)The ability of bacteria to change their morphological form frequently is termed as:

1. Lysogony
2. Pleomorphpsm
3. Alteromorphism
4. Non of these

7) Bacterial flagella is made up of

1. Microtubules
2. Tubules
3. Flagellin
1. Spinin

8) Surface appendage of bacteria meant for cell-cell attachment during conjugation is

1. Pili
2. Flagella
3. Spinae
4. Cilia

9) Extra chromosomal, circular, double stranded, self-replication DNA molecule in bacteria is called

1. 1.Cosmid
2. 2.Plasmid
3. 3.Phagmid
4. 4.Phasmid

10) membraneous infolding in bacteria that initiate DNA replication is

1) mesosomes
2)carboxysome
3)magnetosome
4)nucleosome

11)The period between inoculation of bacteria in a culture medium and beginning of multiplication is known as

A.stationary phase
B.log phase
C.lag phase
D.decline phase

12)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)

13)In the exponential phase, the cells and cell mass

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

Assiut University
Faculty of Science
Botany&Microbiology Department

Date: January 17, 2017
The time allowed: 2 hours
Total mark: _____
50

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 Which of the following is mediated specialized transduction?
a. Lytic phage b. Lysogenic phage c. Lytic and lysogenic phages d. T4 phage

2 Which of the following referee to the uptake of DNA fragments from surroundings by a bacterium
a. Transduction b. Conjugation c. Transformation d. HF Recombination

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 Which of the following organism has sterols in their cytoplasmic membrane?
a. *Clostridum* b. *Mycoplasma* c. *Proteus* d. *Bacillius*

5 Which of the following is not a characteristic of certain thermophilic bacteria?
a. Heat stable enzyme b. High G+C content c.High saturated fatty acids d. Peptidoglycan

6 Which one of the following enzymes can be destroyed the cell wall of Gram +ve Bacteria?
a. Lipase b. Lysozyme c.Pectinase d.Protease

7 Who was the first person observed bacteria using a microscope?
a. Joseph Lister b.Antoni van Leeuvenhoek c. Robert Koch d. Louis Pastuer

8 Which of the following is inhibited by erythromycin?
a. Protein synthesis b. Cell wall synthesis c. Nucleic acid replication d. enzymes

9 Which of the following describe cell division in three regular planes to form a cuboidal cells
a.Tetrad b. Sarcina c. Spiral d. Helica

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 biological weapons?
a.*Neisseria gonorrhoeae* b.*Treponema pallidum* c.*Bacillus anthracis* d.*Clostridium botulinum*

Your answer

1	2	3	4	5	6	7	8	9	10	11

Continued from page 1 to 4

20)
The cell walls of Gram positive bacteria contain two modified sugar, viz. N- acetylglucosamine (N, acetylmuramic acid (NAM). They are covalently linked by
A.α- 1,4-glycosidic bond
B.β-1,6-glycosidic bond
C.α- 1,6-glycosidic bond
D.β- 1,4-glycosidic bond

21)
Which of the following has Chinese letter arrangement?
A.*Bacillus anthracis*
B.*Mycobacterium tuberculosis*
C.*Clostridium tetani*
D.*Corynebacterium diphtheria*

22)
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.Phospholipid bilayer membrane

23)
The arrangement, in which flagella are distributed all round the bacterial ce known as
A.lophotrichous
B.amphitrichous
C.peritrichous
D.Monotrichous

24)

The common word for bacteria which are helically curved rods is
A.cooci
B.pleomorphic
C.bacillus
D.spirilla

25)

Name the component of flagellum

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

Second question

Effect of sulfur drugs on bacteria?

Good luck

Prof. Dr. Ahmed A. A. Shoreit

Section B: Mycology (25 Marks)

Answer the following questions:-

Question One:- 9 Marks

Choose the correct answer of the followings and write it in your notebook 1.5 mark each

1-Multinucleate primary plasmodium of *Plasmodiophora brassicae* in root hairs of cabbage plants is developed later into.....

a-Resting spores b-Sporangiospores c-Zoosporangia d-Zygospores

2-Lateral hair-like appendages that appear on tinsel flagellum are termed.....

a-Opisthocont b-Heterokont c-Mastigoneme d-Trichogyne

3-The fungal thallus in *Zygorhynchus* is.....

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

4-Pseudoconidia are formed in chains in.....

a-*Cunninghamella* b-*Syncephalastrum* c-*Blakeslea* d-*Aphanomyces*

5-Resting spores in *Plasmodiophora brassicae* are.....

a-Diploid b-Haploid c-Multinucleate d-Biflagellate

5-Sex elements in Ascomycetes are fused by.....

a-Planogametic copulation b-Spermatization

c-Gametangial contact d-Gametangial copulation

Question Two:- 16 Marks

Answer FOUR ONLY of the followings:-

A-Mention the general characteristics of Myxomycetes and give with illustration an account on the life cycle of a typical myxomycete. 4 Marks

Assiut University
Faculty of Science
Botany and Microbiology Department

Academic Year Final Examination 2016/2017
Second Level (Credit Hours System) - Subject of the Exam.: General Microbiology (291 B)
Students of Group One **Date of the exam.: Saturday 21/1/2017**
Examination Points: 50 Marks **Time allowed: Two hours**
الإمتحان فى خمس صفحات

Section A: Bacteria (25 degrees)

Answer Fifteen only of the following questions:-

1) Nuclear region present in cytoplasm is known as

1. pili projects
2. filopodia
3. nucleotide
4. flagellin

2)In 70S ribosoms,'S'stands for

1. S1 unit
2. Solubility factor
3. Svedberg unit
4. All of these

3)Prokaryotic cells have a specialized material with them called as

1. peptidoglycan/murein
2. pectin
3. peptidoglucose
4. peptidoaminose

4)All of bacteria fix Nitrogen except

1) Rhizobium
2) E. coli
3) Azotobacter
4) Cyanobacteria

5)which among the following is called as filamentous bacteria

1) Mycoplasma
2) S-piochetes
3) Actinomycetes
4) Vibrios

B-Compare with drawing between each two of the followings: **4 Marks**

1-*Achlya* and *Aphanomyces* **2-Cleistothecium and perithecium ascomata**

3-Rhizomorph and mycorrhiza **4-Arthrospores and chlamydospores**

C-Identify with drawing each of the following: **4 Marks**

1-Prosenchyma **2-The vegetative mycelium**

3-Zoosporangial proliferation in *Saprolegnia* **4-Polyplanetism phenomenon**

D-Describe with drawing the morphological features of the related genera in only two columellate families of the Order: Mucorales. **4 Marks**

E-Flagellation plays an important role in the classification of Sub-division: Mastigomycotina into classes. Discuss this statement. **4 Marks**

إنتهت الأسئلة

Good Luck - Prof. Dr. Esam Hosney Ali

بسم الله الرحمن الرحيم

AssiutUniversity

Faculty of Science

Botany &Microbiol.Dept.

Time required :2 hours

Bacteiolology 271

Finalterm 2016/2017

Final Degree 50 degree

Answer Fifty of the following questions:-

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 glucosamine 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 Genetic recombination has led to antibiotic resistance through the transfer of
a). pili.
b). endospores.
c). plasmids.
d). bacterial chromosomes

4). Prokaryotic organisms that obtain their energy by oxidizing inorganic substances are called
a). chemoautotrophs.
b). photoautotrophs.
c). chemoheterotrophs.
d). photoheterotrophs.

5) All the bacteria fix nitrogen except
a) Rhizobium
b) E.coli
c) Azotobacter
d) Cyanobacteria

6) The cell walls of many gram positive bacteria can be easily destroyed by the enzyme known as
A.lipase
B.lysozyme

11- 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

12- The "lock and key hypothesis" attempts to explain the mechanism of

a) Vacuole formation b) Sharing of electrons c) Enzyme specificity

13- The first stable compound of Calvin cycle is

a) Phosphoglyceric acid c) Malic acid
b) Glucose d) Phosphoglyceraldehyde

14- The final product in respiration is

a) Glucose b) O_2
c) H_2O d) CO_2

15- Conversion of Xylulose-5p to Ribulose-5P catylyze by

a) Epimerase
b) Isomerase
c) Amylase
d) Oxidase

16- The part of the enzyme where the substrate binds is called the

a) Active site b) Inhibitor c) Catalyst d) Cytoplasm

Q2) 1- Compare between <u>three</u> of the following: ***(6 Marks)***

a- Photosystem I and Photosystem II
b- Competitive inhibitor and non competitive
c- Aerobic respiration and anaerobic
d- Coenzyme and Cofactor

2- Define <u>two</u> of the following: ***(4 marks)***

1- Optimum temperature of enzyme activity
2- Ferrodoxin
3- Phosphorylation

Good Look

Dr. Abeer Radi Dr. Fatma Farghaly

السؤال الرابع: (١٠ درجات)

في التلقيح الاختباري التالي لإناث حشرة الدروسوفيلا خليطة في ثلاث مواقع كان النسل الناتج كما يلي:

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

A	*B*	*C*	*318*
a	*b*	*c*	*324*
A	*b*	*c*	*105*
a	*B*	*C*	*108*
A	*B*	*c*	*18*
a	*b*	*C*	*20*
A	*b*	*C*	*4*
a	*B*	*c*	*3*
TOTAL			*900*

١- احسب المسافة بين الجينات

٢- ارسم الخريطة الوراثية

٣- احسب معامل التوافق ومعامل التعارض (التداخل)

انتهت أسئلة الامتحان مع خالص التمنيات بالنجاح والتوفيق

دكتور / عبداللطيف هشام

دكتور / كرم عبدالنعيم

Assiut University
Faculty of Science
Botany and Microbiology Department

Course Title: Plant Cytology
Course Code: 323 B
Final Exam: Third Level
First Semester 2016-2017
Allowable Time: 2 hours
Total Degree: 50 Marks

Answer the following questions

1. Choose the correct answer (10 marks)

1- .....is the component of the 30S small subunit of a prokaryotic ribosome that used in the phylogenies

(a) 16S rRNA (b) 18S rRNA (c) 28S rRNA (d) 5.8S rRNA

2- ..... represent an objection to the cells theory.

(a) Coenocytic fungi (b) Bacteria (c) Virus (d) All mentioned

3- ..... are pre-granal immature plastids

(a) Amyloplasts (b) Chromoplasts (c) Etioplasts (d) Statolith

4- ..... are the extremities or tips of chromosomes which prevent the attachment between chromosomes.

(a) Trabants (b) Pellicles (c) Chiasmata (d) Telomeres

5- After the nuclear division, a barrel shaped plasma body called ..... is formed in the region of the equatorial plane of the dividing mother cell.

(a) Phragmoplast (b) plasmodismata (c) proplast (d) Aleuroplast

6- .....protect the chlorophyll from photo-oxidation

(a) Xanthophyll (b) Carotenoids (c) Phycocyanin (d) Phycoerythrin

7- Type of ribosomes in eukaryotic cell is .....

(a) 70 S (b) 77 S (c) 80 S (d) 60 S

8- It plays an important role as a carrier in the cytoplasmic membrane

(a) Lipids fraction (b) Protein fraction (c) Carbohydrates (d) All mentioned

9- Beside the cellulose, the tertiary cell wall consists of.....

(a) Arabinose (b) Mannose (c) Lignin (d) Xylan

10- The point at which crossing over and exchange of genetic material occur between the paired chromosomes

(a) Centeromers (b) Centrioles (c) Chiasmata (d) Chromomers

.....

Look at the next page

D.Trubidostat

38)

Organisms, using organic compounds as electron donors are called
A.lithotrophs
B.phototrophs
C.chemotrophs
D.organotrophs

39)

The cell reproduction in bacteria may occur by
A.binary fission
B.budding
C.fragmentation
D.all of these

40)

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

41)

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)

42)

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

43)

Which of the following is the suitable temperature range for mesophiles?
A.20-30°C
B.25-40°C
C.>40°C
D.None of these

14)

Gram positive cells have a
A.second outer membrane that helps to retain the crystal violet stain
B.multiple layer of peptidoglycan that helps to retain the crystal violet stain
C.thick capsule that traps the crystal violet stain
D.periplasmic space that traps the crystal violet

15)

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.outer membranes of gram negative bacteria

16)

Porins are located in
A.the outer membrane of gram-negative bacteria
B.the peptidoglycan layer of gram-positive bacteria
C.the cytoplasmic membrane of both gram-negative and gram-positive bacteria
D. the periplasmic space of gram-negative bacteria

17)

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

18)
Which of the following does not contain protein?
A.Pili
B.Flagellum
C.Lipoteichoic acid
D.Porin
19)
Chemically the capsule may be
A.polypeptide
B.polysaccharide
C.either (a) or (b)
D.none of these

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Faculty of Science
Botany &Microbiology Dept .

Final Exam in "Plant Ecology" (Bot.241)

Date : 3/1/2017 **Time Allowed :** Two Hours

Answer Four Questions Only:

I- Differentiate berween each two of the following:

a- Absolute and Relative Humidity .
b- Biotic and Abiotic Factors .
c- Soil Texture and Soil Structure .
d- Saturation Copacity and Field Capacity.

II- Define each of the following:

Zone of accumufation –Hygrospic moisture – Parent rock- Vapour Pressure Deficit – Fertile Soil – phototropism .

III- Discuss the relation between Soil texture and its capacity to hold Water:

IV- Comment on each of the Folowing :

a- Effect ef light on photoperiodism .
b- Effect of Red Light and Infra-red light on plants.
c- Origin of main types of Soil.
d- Response of Soil to Infrared light.

V- Answer each of the following by True (√) or False (x) giving a reason :

a- Wind effect is harmful to plants .
b- Transpiration rate is related to vapour pressure deficit of air .
c- Plant turgidity protects the plant against harmful effects of high tempecture.
d- Green light is beneficial to photosynthesis .
F- Chilling injury offect is Temporary but freezing injury is permanent .

(Good Luck)

H.M.El-Sharkawi

D.none of the above

50)

Autotrophic bacteria are those which
A.make their own food
B.form a long chain glycocalyx
C.are highly susceptible to penicillin
D.produce a blue-green pigment

51)

Which of the following organisms typically get their carbon for biosynthesis from organic compounds?
A.Aerobic, glucose-respiring bacteria (aerobic respiration)
B.Ammonia-oxidizing bacteria (chemolithotrophic bacteria)
C.Photosynthetic cyanobacteria (phototrophic metabolism)
D.None of the above

52)

An organism is completely dependent on atmospheric O_2 for growth. This organism is
A.osmotolerant
B.acidophile
C.facultative anaerobe
D.obligate aerobe

53)

The term obligate 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 oxygen is absent
D.prefers to grow without oxygen

54)

Which of the following is used to grow bacterial cultures continuously?
A.Chemostat
B.Coulter Counter
C.Hemostat
D.Petroff-Hausser chamber

55)

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

Q2. Give scientific term for each statement (Ten only). 10 Marks

No	Statement	Scientific term
1	Structures that provide buoyancy for prokaryotic cells	
2	Compound found in high concentrations in endospores	
3	Fiber like structures on the surface of bacteria that aid in attachment to surfaces.	
4	G-ve cell which has lost its peptidoglycan layer but remains intact	
5	Enzyme that protects bacteria from damage caused by hydrogen peroxide	
6	A high temperature used for a short time (72^0C for 14 seconds) to destroy pathogen in food	
7	Genes whose expression is turned off by the presence of some substance	
8	regulatory sequences that interact with regulatory proteins	
9	Compound found in the cell wall of acid- fast bacteria	
10	The time required for the formation of two cells from one	
11.	Bacteria require low concentration of oxygen for growth but cannot tolerate the level of oxygen in an air atmosphere	

Q3. Write the suitable definition for each scientific term (Ten only). 10 Mark

No	Scientific term	Definition
1	High frequency recombination	
2	Endoflagella	
3	Glcocalyx	
4	Aerotaxis	
5	Growth factors	
6	Hetertrophs	
7	Thermal death time	
8	Disinfection	
9	Pili	
10	Synthetic medium	
11	Plasmid	

Continued from page 1 to 4

32)

Some organisms can use reduced inorganic compounds as electron donors and are termed as
A.lithotrophs
B.phototrophs
C.chemotrophs
D.photo-organotrophs

33)

The growth is normally expressed as _____ in turbidimetric measurement
A.cells per ml
B.cfu/ml
C.optical density
D.mg N_2 /ml

34)

An organism that expends energy to grow in a habitat with a low water activity in order to maintain int
to retain water is
A.osmotolerant
B.acidophile
C.aerotolerant anaerobe
D.alkalophile

35)

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

36)

An organism has an optimal growth rate when the hydrogen ion concentration is very high. This organi
A.osmotolerant
B.acidophile
C.neutrophile
D.aerotolerant anaerobe

37)

Which of the following procedures uses a photocell to measure absorbance of a culture to regulate the
A.Coulter Counter
B.Hemostat
C.Petroff-Hausser chamber

Assiut University Faculty of Science Botany&MicrobiologyDepartment		جامعة أسيوط- كلية العلوم قسم النبات والميكروبيولوجى
First TermExam, 2016- 2017 Plant Morphology and Anatomy (221B) Second level Students, Faculty of science		Exam Date: 14/ 1/ 2017. Time allowed: 2 hours. Total Marks: 50 Marks

Part I: Plant Anatomy (30 Marks)

Firstly: Answer ALL the following questions:-

Q.1-A-Write in table the functions of each of the following: (4 Marks)

- Tracheids
- Hydathode
- Brachysclerids
- Lacticiferous tissue
- Cambium
- Trichomes
- Palisade tissue
- Dendrochronology

Q.1-B- Draw with labelled diagrams TWO only of the following:- (2 Marks)

a) Pattern of Lignification in protoxylem OR L.S. in regular phloem.
b) Any three types of Sclereids.
c) Any three types of unspecialized permanent tissue in plant body.

Q.2 Give in table one difference at least with drawing if possible between four only of the following:(4 Marks)

a) Xylem of Gymnosperms and Xylem of Angiosperms.
b) Fibres and Sclerids.
c) Graminae stoma and universal stoma.
d) Lateral branch and Lateral roots.
e) Conjoint vascular bundles and Radial bundles.

Q.3 Give reasons for FOUR only of the following: (8 Marks)

a) Parenchyma is considered simple and primitive tissue.
b) Collenchyma. support rapidly growing organs of plant.
c) Water conducting elements are hard and strongly lignified.
d) Food conducting elements have specialized perforated cross walls and sometimes loss their function.
e) i- A hollow hearted plant (in which heart wood is destroyed) continuous to live.
ii- Secondary growth does not occur in all Angiosperms.

Secondly: Answer THREE only of the following questions: (4 Marks each)

Q.4 What are the various criteria on the basis of which meristems can be classified? List four characteristic features of it. Name the locations in the plant body where you can find meristems?

Q.5 Differentiate between heart wood and sap wood? Which of the two is more durable? Why? List the changes that occur during transformation.

Q.6 Classify xylem depending upon the position of protoxylem in vascular bundles? Define, Compare and describe with drawing different types of vascular bundles characteristic old *Dracaena* stem.

Q.7 **A**-Define bark? Mention its types? Name two products obtained from it? Mention their uses? What happens if the bark is removed? Why?

B-Name two compounds secreted by stinging hairs?

Q.8-Write short notes on EACH of the following:-

a) Interxylary phloem b) Tyloses OR Annual rings.

Part II: Plant Morphology (20 Marks)

Answer the following questions:-

Question 1: Compare with drawing between seven only of the following:-(7 Marks)

1- Moncotyledon and dicotyledon seeds.
2- Compound leaf and leafy stem.
3- Arborescent and Caulescent.
4- Viviporus and wheat germination.
5- Layered and scaly bulbs.
6- Adventious and naked bud.
7- Deleguescent and Caespitose.
8- Cataphylls and prophylls.
9- Caruncle and endosperm.

Question 2: Discuss briefly each of the following points:-(10 Marks)

1- Types of spines in plants.
2- Roots above soil surface.
3- Seed dormancy.
4- Various types of stems modifications **(diagrammatically only)**.
5- Weak stems

Question 3: Draw with labelled diagram three only of the following:-(3 Marks)

1- Compound leaves
2- Stem branching
3- Leaf venation
4- Regions of root.

"Good Luck"

Prof. M.A.Elnagdy - Dr. Mona F.A.Dawood

	First-Term Examination 2016/2017	
Botany & Microbiology Department	**Plant Physiology (251 B) Second Level (Credit hours)**	**Time: 2 hours**

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

1- Which one of the following equation is correct?

a) DPD=OP - TP c) DPD= OP / TP

b) DPD=OP + TP d) None of the above

2- Diffusion pressure deficit (DPD) is,

a) Inversely proportional to suction pressure

b) Directly proportional to suction pressure

c) Synonymous to suction pressure

d) None of the above

3- A plasmolysed cell or tissue can best be deplasmolysed by putting it into,

a) Hypertonic solution c) Hypotonic solution

b) Isotonic solution

4- Osmotic pressure is higher in,

a)Isotonic solution c) Hypotonic solution

b)Hypertonic solution d) None of the above

5- A homogeneous and stable mixture of two or more chemical substances is called as,

a) True solution c) Suspension

b) Colloidal solution d) None of the above

6-A colloidal system with a fluid like consistency is known as,

a) Gel b) Semi-solid colloid c) Sol d) None of above

7- The stomata open when guard cells become,

a) Turgid b) Flaccid c) Plasmolysed d) None of the above

8- 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

9- Guttation occurs through,

a) Hydathodes c) Both (a) and (b)

b) Stomata d) None of above

10- What happens to plant cells placed in water?

a) They shrink b) They gain water and expand c) Nothing

11- The macronutrient, _____ , is important to the operation of stomata.

a) Magnesium b) Manganese c) Sulfur d) Potassium

C.pectinase
D.peroxidase

7)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

8)

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

9)

Cytoplasmic inclusions include
A.ribosomes
B.mesosomes
C.fat globules
D.all of these

10)

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

11)

The structure responsible for motility of bacteria is
A.pilli
B.flagella
C.sheath
D.capsules

12)

The bacteria deficient in cell wall is
A.*Treponema*
B.*Mycoplasma*
C.*Staphylococcus*
D.*Klebsiella*

13)

Which of the following bacterial genera (that produces endospore) have medical importance?
A.*Clostridium*
B.*Bacillus*
C.Both (a) and (b)
D.None of these

Q2: Identify the following: (7 marks)

1- **Necrosis**
2- **Hypertrophy**
3- **Chlorosis**
4- **Prions**
5- **Virion**
6- **Circulative transmission**
7- **Persistent transmission**
8- **Hypoplasia**

Q3: Write short notes on <u>TWO</u> only of the following: (6 marks)

A- **Types of proteins in viral particles**
B- **The visible symptoms of viral infection on host plant**
C- **Viral nucleic acids**

Q4: Illustrate the target from the following cryptogram: (5 marks)

R/2: 1.1/16 + 0.7/16: E/U: S/O

Q5: Explain <u>TWO</u> only of the following: (12 marks)

A-**Virus life cycle in plant cell**
B- **Basic principles of virus affecting on plants**
C- **Inactivation of virus particles in *vitro***

إنتهت الأسئلة وبالتوفيق والنجاح

Best Wishes

Dr. Naeima Yousef

Q2) Distinguish between <u>three</u> of the following: *(9 Marks)*

1- Exosmosis and endosmosis.
2- Active absorption and passive absorption.
3- Nitrogen and phosphorous functions in the plant.
4- Guttation and transpiration

Q3) Write short notes on <u>two</u> of the following: *(6 Marks)*

1- Gravitational water.
2- The relation between osmotic pressure , turgor pressure , and suction pressure (D.P.D.) when Opi > Ops.
3- Cohesion tension theory.

Q4): <u>Choose the correct answer</u>: *(15Marks)*

1- Acceptor of carbon dioxide in Calvin cycle is

a) RUBP b) ATP c) Glucose d) PGA

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) In 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- In noncyclic electron flow, electrons that leave the chlorophyll

a) Return to the chlorophyll
b) Produce only ATP
c) Are used to split water molecules
d) Are used to turn NADP+ into $NADPH_2$

6- Carbon dioxide released in respiration during

a) Glycolysis c) Krebs cycle
b) Dark reaction d) Electron transport

7-Cellular respiration starts by glycolysis in the

a) Cytoplasm c) Chloroplast
b) Stroma d) Matrix

8- Enzyme will combine physically with:

a) Product b) Substrate c) Inhibitor d) All the preceding

9- The reduced form of nicotinamide adenine dinucleotide is:

a) $NADH_2$
b) NAD^+
c) $NADP^+$
d) $NADPH_2$

10- Starch inter Krebs cycle in the form of

a) Citric acid b) Acetyl CoA
c) Pyruvic acid d) Succinyl CoA

44)

the exponential phase, the cells and cell mass
A.first increases then decreases
B.decreases
C.are constant
D.double at a constant rate

45)

What are the extrinsic factors for the microbial growth?
A.humidity
B.storage temperature
C.composition of gas phase
D.all of these

46)

Quantitative measurement of bacterial growth can be carried out by measuring
A.cell count
B.cell mass
C.cell activity
D.all of these

47)

Bacteria of genus*Nitrosomonas* use ..... as their electron source.
A.ammonia
B.H_2S
C.succinate
D.light

48)

All organisms require at least small amounts of carbondioxide, However, some can use CO_2 as their so
organisms are termed as
A.autotrophs
B.phototrophs
C.chemotrophs
D.photo-organotrophs

49)

The generation time of a culture that produces two generations per hour is
A.greater than that produces three generations per hour
B.lesser than that produces three generations per hour
C.equal to that produces three generations per hour