Faculty of Science Botany& Microbiology Department		كلية العلوم قسم النبات والميكروبيولوجى
Plant Water Relations Course No. (343 B) Time allowed: 2hr 50 Marks	1st Semester final exam 2019/2020 3rd Level (Special Botany) Exam date: Thursday, 16/01/2020	

Question (1): Answer three only of the following: (15 marks)

a) Explain the relation between soil water potential (Ψ_{soil}) and hydraulic conductivity (K) for water flow in saturated and unsaturated soils.
b) Write equation of the soil water potential including forces contributing to water potential in soil solution.
c) Discuss development of water stress, mention the methods for measurement.
d) How chemical properties of water make it biologically important?

Question (2): Answer two only of the following: (10 marks)

a) What do you know about **three only** of the following:
Boundary water – Diffusion pressure deficit – Active uptake of water – Water use efficiency.
b) Write on ecological importance of root/shoot ratios and relative turgidity.
c) Mention the climatic factors affecting transpiration rate.

Question (3): Answer two only of the following: (10 marks)

a) Write on the pathway of radial water movement.
b) Compare between **two only** of the following :
Endo- & Exoosmosis – Molal solution & Pure water properties – Soil & Plant factors affecting water absorption
c) Explain the interaction between stomatal conductance and plant productivity.

Question (4): Answer three only of the following: (15 marks)

a) Mention the strategies related to plant water relations in chilling-hardened plant.
b) Define each: Soil hydraulic conductivity – Hydrostatic pressure.
c) Write the beneficial effects of water stress in relation to nitrogen and carbon metabolism.
d) How can you measure soil water potential (Ψ_{soil}), mention two methods at least?

BEST WISHES
Course coordinator and Examiner
DR/ Amany Abeed

Assiut University
Faculty of Science
Botany & Microbiology Department
First Semester 2019-2020
14 - Jan - 2020

Final Exam: Third Level
Course Code: 333 B
Course Title: Medicinal Plants
Allowable Time: 2 hours
Total Degree: 50 Marks

Answer the following Questions

Q1. Choose the correct answer (Answer 10 points only): (*10 marks*)

1 Which of the following is a disadvantage of medicinal plants cultivation:
(a) Economical improvement (b) Conservation of water (c) High cost of production (d) Environmental protection

2 The main chemical constituent present in *Ammi majus*:
(a) Flavonolignan (b) Phenol (c) Tannin (d) Coumarin

3 Hepanox capsules is a pharmaceutical preparation for:
(a) *Silybum marianum* (b) *Cyperus rotundus* (c) *Acacia nilotica* (d) *Portulaca oleracea*

4 Starch can be used as a starting material for some industrial products such as:
(a) Maltose (b) Acetone (c) Glucose (d) All the preceding

5 Which of the following is aggregate crystals:
(a) Micro Rosette (b) Acicular (c) Styloid (d) Twinned

6 When the drugs arranged according to ....., it will be divided into flowers, fruits, leaves, seeds.
(a) Therapeutic uses (b) Alphabetical (c) Taxonomy (d) None of preceding

7 The book which contains a list of the official drugs is known as:
(a) Pharmaceutical (b) Pharmacopeia (c) Pharmacology (d) Pharmacognosy

8 The book "Minhag ad-Dukkan" was wrote by:
(a) Ibn Sina (b) Abu Bakr ar-Razi (c) Ibn al-Rumiya (d) None of preceding

9 The volatile oil "anethol" in anise used as:
(a) Antispasmodic (b) Carminative (c) Anthelmintic (d) Diuretic

10 The author who writes the book "Canon of Medicine" is:
(a) Discorides (b) Ibn al-Baitar (c) Ibn Sina (d) Al-Ghassani

11 It is produced during ripening of fruits, has high molecular weight and it disperses in water as a viscous colloidal solution:
(a) Mucilages (b) Calcium Oxalate (c) Inulin (d) Pectin

Q2. Write briefly on the following medicinal plants, mention the part used, chemical composition, pharmaceutical preparations and folkloric uses for each one: (*12 marks*)

1- *Hyoscyamus muticus*
2- *Ricinus communis*
3- *Cyperus rotundus*

باقي الأسئلة في الخلف

Q3. Write short notes on 4 only of the following: *(12 marks)*

1- Inulin.

2- Plant Gums.

3- Discorides - Ibn al-Baitar - Dawud al-Antaki.

4- The economic value of phytomedicines.

5- Light, temperature, and allelopathy as factors affecting the variability of drug activity.

Q4. Write the *sources* and the *uses* of 4 only of the following chemical substances: *(16 marks)*

1- Ephedrine

2- Atropine

3- Caffeine

4- Vinblastine

5- Thymol

.....

End of the Exam

With My Best Wishes ..... Dr. Ahmed Faried

Assiut University
Faculty of Science
Department of Botany & Microbiology

جامعة أسيوط
كلية العلوم
قسم النبات والميكروبيولوجى

3rd level (Microbiology & Botany Students)
Pathogenic Microorganisms (397B)

Final ex: 25th December 2019
Time allowed: 2 hours

Answer the following questions (50 Marks)

I. Give a short account on 5 only of the following (10 Marks)

1. Koch's postulates
2. Infections of the eye
3. How do pathogens enter the body?
4. Risk factors of Candidiasis
5. Diagnosis of fungal diseases and refer to the most rapid technique for detection of pathogenic fungi.
6. Symptoms of HIV
7. Classification of Hepatitis viruses and describe their modes of transmission

II. Give the reason(s) for 6 only of the following (12 Marks)

1. Food-poisoning
2. Penicillin could not impair human body
3. Glucose and protein concentrations should be tested in CSF of a patient suffering from Meningitis
4. Normal flora may cause diseases
5. Humans have a high resistance against fungi
6. Stomach harbors small number of normal flora
7. Bladder infection by *Escherichia coli* is more frequently in woman than man
8. Rising body temperature following infection

III. Write one difference between 5 only of the following (5 Marks)

1. Endogenous & Exogenous pyrogens
2. Typical & atypical pneuomonia
3. Symptoms, Signs & Syndrome
4. Anthropophilic & Geophilic pathogens
5. Vector & Fomite
6. Exotoxin & Endotoxin
7. Receptors & Adhesins

IV. Write one example for 8 only of the following (8 Marks)

1. An antifungal drug binds to ergosterol in the plasma membrane
2. STDs
3. Gut normal microbiota
4. A fungal disease contracted via the respiratory tract
5. Exogenous infections

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6. A pathogen transmitted by contaminated water
7. Dermatomycosis
8. A disease acquired via insects
9. Protozoan diseases

V. Choose the correct answer for 10 only of the following (5 Marks)

1. Which of the following pathogens transmitted parenterally
   a. HCV b. *Microsporum canis* c. *E. coli* d. *Salmonella typhi*
2. Lumbar puncture is required during diagnosis of
   a. Cystitis b. Meningitis c. Pyelonephritis d. Pneumonia
3. The stage in which the host going to be recovered
   a. Convalescence b. Decline phase c. Incubation period d. None of the above
4. Cystitis is
   a. Upper UTI b. Lung infection c. Lower UTI d. Blood infection
5. Which of the following sites is free from normal microbiota?
   a. Nose b. Conjunctiva c. Bronchi d. Vagina
6. Which of the following drugs act to inhibit folate synthesis of bacterial cell
   a. Polymyxins b. Echinocandins c. Sulphonamides d. Azoles
7. Fungal infection of nails is called
   a. athlete's foot b. Pyleonephritis c. Tinea pedis d. Onychomycosis
8. Incubation period for influenza virus
   a. Two years b. Few weeks c. Two months d. Few days
9. Which of the following infections is caused by the varicella-zoster
   a. Cryptococcosis b. Tuberculosis c. AIDS d. Shingles
10. The infection site of kuru disease is
    a. Liver b. Skin c. Lung d. Brain
11. Which of the following pathogens could not infect human body
    a. *Microsporum gallinae* b. *Mycobacterium tuberculosis*
    c. *Candida albicans* d. *Epidermophyton floccosum*
12. Which of the following is only an exit portal of the pathogen
    a. Stool b. Oral cavity c. Parenteral route d. All of the above

VI. Define briefly 5 only of the following scientific terms (10 Marks)

1. Mycetoma
2. Antitoxin
3. Subclinical infection
4. Aspergilloma
5. Inflammation
6. Viremia

"انتهت الأسـئلة"

Best Wishes **Dr. *Nemmat A. Hussein***

Assiut University
Faculty of Science
Botany & Microbiology
Department

جامعة أسيوط
كلية العلوم
قسم النبات والميكروبيولوجي

بسم الله الرحمن الرحيم

Mineral Nutrition — First Term Exam 2019 – 2020
Time: 2 hours - 351 B — 3rd Level: Botany
Exam papers: Two

Answer the following questions:

Q1- Read carefully and choose the correct answer for only twenty:.....(20 marks)

1- ..... water is less dense.
a. Liquid b. Frozen c. Steam d. All of the previous

2- ..... is the diffusion of water through the plasma membrane.
a. Diffusion b. Imbibition c. Osmosis d. All of the previous

3- Water absorption and absorption of mineral salts are ..... processes.
a. independent b. dependent c. all of the previous

4- Aquaporin forms the ..... channel.
a. water b. cation c. anion d. all of the previous

5- Factors affecting the permeability of the cell membrane of a particular substance:
a. molecular size b. electrical charge c. solubility d. all of the previous

6- The plant can complete its life cycle with the ..... elements.
a. beneficial b. non-essential c. essential

7- ..... is the diffusion of water across a membrane.
a. Imbibition b. Diffusion c. Osmosis d. all of the previous

8- Mineral nutrients are classified according to:
a. amount b. metabolic need c. function(s) d. mobility e. all of the previous

9- The important nutrients in energy storage or structural integrity are the group:
a. one b. two c. three d. four

10- ..... elements make up less than 6% of the plant's dry tissue.
a. Three b. Seventeen c. Twenty d. Fourteen

11- These elements are beneficial for plants, except:
a. aluminum b. silicon c. selenium d. cadmium

12- Incorporation of mineral nutrients into organic substances means:
a. assimilation b. uptake c. translocation d. all of the previous

13- Ca^{2+} pump can be further characterized by the ..... pump.
a. electrogenic b. electroneutral c. all of the previous

14- ..... **serves as an electron donor to Fe in the nitrogenase enzyme.**

a. NADPH+H b. $FADH_2$ c. NADH+H d. Ferredoxin

15- ..... **bonds are formed due to the presence of a negatively charged group such as carboxyl on a carbon compound that attracts positively charged cations.**

a. Electrostatic b. Coordination c. All of the previous

16- **Phosphate is relatively unavailable to plant roots due to its .....**

a. low solubility b. sorption capacity in soil c. all of the previous

17- **Mycorrhizae filaments supply plant roots with:**

a. surface area b. minerals c. water d. all of the previous

18- **Many of the compounds secreted by the roots form stable chelates with iron except:**

a. malic acid b. citric acid c. sugars d. phenolics e. piscidic acid

19- ..... **consists of a protein shell with a core of 5400 to 6200 iron atoms.**

a. Porphyrin b. Phytoferritin c. All of the previous

20- **Oxygen is directly incorporated into an organic compound through all of them, except:**

a. respiration b. photorespiration c. photosynthesis

21- **The ..... is the voltage difference across the membrane.**

a. Water potential b. Membrane potential c. Diffusion d. Carrier

22- **Transport processes by the ..... transporters consume ATP and do not depend on the primary electrochemical gradient.**

a. ABC b. H^+-ATPase c. H^+-PPase

Q2- Write on <u>five</u> of the following:..... (15 marks)

1. Cystine synthesis.
2. Convert ammonium to amino acids.
3. Passive transport.
4. Transpiration is a necessary evil.
5. What makes an element essential?
6. Establishing symbiosis requires an exchange of signals

Q3- Compare between <u>five</u> of the following:..... (15 marks)

1. Symporter and antiporter.
2. Contact and carbonic acid exchange theories.
3. Vacuolar H^+-ATPase and H^+-pyrophosphatase pumps.
4. Transpiration and guttation.
5. Nitrate reductase and nitrite reductase enzymes.
6. The role of calcium and magnesium in plant life

والله ولى التوفيق..... أ.د/ عفاف محمد حماده

Assiut University
Faculty of Science
Botany & Microbiology
Department

First semester exam 2019-2020

Time: 2 hours
Course: Advanced Plant Anatomy
Date: 31/12/2019
Code: 321B
Marks: 50

The exam is of four questions in two pages

QUESTION ONE (10 marks):

Answer only two of the following questions:

1- Complete the following sentences (5 marks):

a- The advanced type of sieve tubes has ..... end walls with ..... in sieve plate.

b- The root apex of gymnosperms is differentiated into four histogens: ....., ..., ... and ..... .

c- ..... is a secondary meristem because it arises from living cells that have become permanent and it is a lateral meristem because it increases the diameter of the axis. It divides to give the periderm.

d- The meristem which is directly concerned with the formation of the primary vascular tissue is ....., while the meristem which is directly concerned with the formation of the secondary vascular tissue is.....

e- Latex cells arise from ....., while latex ducts originate from..... .

2- Write short account on (5 marks):

a- Types of meristematic tissues on the basis of its origin.

b- The different procambial developmental patterns.

3- Describe in detail the anatomic features of anomalous stems with cambium abnormal only in its activity (5 marks).

QUESTION TWO (16 marks):

1- Compare between (12 marks):

a- The two types of salt glands in halophytes.

b- Isobilateral vs. dorsiventeral leaves.

c- Primary type vs. secondary type of endodermis.

2- Describe in brief (4 marks):

a- The anatomy of *Vanda* (Orchid) root.

b- Differentiation of the sieve tube member.

Please turn your page →

QUESTION THREE (16 marks):

Answer only two of the following questions:

1- Define the following (8 marks):

Kranz anatomy – Tyloses – Hydathodes – Bulliform cells – Callose – Pilose indumentum – Epiblema – Diacytic stomata

2- Describe in detail the following (8 marks):

a. The chemical composition of the different membranes forming the epidermal cuticle.
b. The stomatal development in *Arabidopsis*.

3- Compare between (8 marks):

a. The apoplastic vs. The symplastic pathways
b. Tracheids in ferns vs. tracheids in gymnosperms and angiosperms.

QUESTION FOUR (8 marks):

1- Demonstrate if these sentences are right (√) or wrong (x), (2 marks):

a. For highly lipophilic organic substances, the cuticle is the preferred pathway of exchange even when the stomata are open. ( )
b. In dicotyledons roots and in abnormal monocotyledons stems such as *Dracaena* and *Aloe*, the phellogen usually originate from the pericycle. ( )
c. The endodermis layer in roots terminates the apoplastic pathway and forces all substances to pass through the cytoplasm by the symplastic pathway. ( )
d. The histogen theory explains clearly the growth pattern in the shoot apex of angiosperm. ( )

2- Describe in detail and provide illustrations when possible (6 marks, Answer only ONE of the following questions):

- The most common types of secondary thickening in stems (in *Ricinus, Aristolochia, Helianthus* and *Tilia*).
- The transition from root to stem.
- The evolution in the stelar structures.

****
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With my best wishes,

Dr. Asmaa Osama

Asmaa

Botany and Microbiology Department	First semester Final exam. (2019-2020) Plant Geography (Code : 341 B) For Under Graduate students (3th level) Date: 20/1/2020	Time allowed 2 hours
		Assiut University

Answer the following questions ..... 50 marks

I. Describe in details 2 only of the following..... (2×10 = 20 marks)

1. The principal factors seem to control the climate of the earth with highlight on the classificatic of earth climate according to the (i) duration of critical temperatures and (ii) precipitation.
2. Many species modified their dispersal organs to be carried by wind for considerable distances.
3. Climate, distribution and vegetation composition of Mediterranean and Desert regions.

II. Shortly explain 4 only of the following ..... (4×5 = 20 marks)

1. The environment is holocoenotic.
2. Types of floristic areas discontinuity.
3. Climatic barriers of migration.
4. Perpetuation depends on migration and development.
5. The concept of ranges limitation by species tolerance.
6. The presence of endemic families on the earth (Why?).

III. Define 5 only of the following ..... (5×2 = 10 marks)

1. Ecocline
2. Pantropic species
3. Ecotype
4. Heliophytes
5. Geographical relics
6. Ectozoic transportation

Best wishes

Dr. Ahmed Amro

Lecturer in Botany and Microbiology Department

Assiut University	Microbial toxins (393 N)
Faculty of Science	Final examination
Botany & Microbiology Department	Time: 2 hours
Date: 12/1/2020	Total marks: 50 marks

Answer All The Following Questions

(A) Choose the correct answer: (10 marks)

1- Sterigmatocystin is a toxic metabolite structurally closely related to….
(Ochratoxin – Citrinin – Aflatoxin)

2- **…….**named because of the bioassay used to detect them are often cultured mammalian cell line.
(Cytotoxins – Biotoxins – neurotoxins)

3- ……..is an algal toxin which inhibit protein phosphatases 1A and 2A in the liver
(Aphantoxins - Saxitoxin – Nodularin)

4- Zearalenone gives ……fluorescence by long uv (360 mn)
(blue green –yellow green– reddish brown)

5- Anatoxins are …… and target the nervous system
(alkaloids – macropeptides – cyclopeptides – proteins)

6- Alimentary toxic aleukia disease produced by ……
(Zearalenone– Deoxynivalenol – Trichothecenes)

7- Bacterial…….is the ability of bacterial cells to produce toxins.
(toxicosis – endotoxins – toxigenesis – enterotoxins)

8- Mycotoxins usually produced in ……
(lag phase – stationary phase – log phase – autolysis phase)

9- ……..is phytotoxic, damage cell membranes and reduces chlorophyll synthesis.
(Kojic acid – Rordins — Fumonisin - Satratoxin)

10- Cholera toxin is …….. bacteria toxin
(non-protein – protein – lipopolysacharied)

(B) Answer with (X) or (√) (10 marks):

1- *Bacillus anthricus* its mood of action effects on Adenylate cyclase enzyme and its target is ATP ( )

2- Patulin possesses wide-spectrum antibiotic properities ( )

3- The co-occurrence of aflatoxins with cyclopiazonic acid was reported ( )

4- Ergot alkaloids transferred to the milk of cows which consumed contaminated feeds. ( )

5- Tenuazonic acid its principle mode of action appears to be the inhibition of protein synthesis ( )

6- Measuring the AFB_1 quanine is more accurate for detecting Aflatoxins in human ( )

7- Kojic acid could present in fermented foods ( )

8- Cylindrospermopsin toxin is stable in water because of their chemical structure, surviving in both warm and cold water ( )

9- *Esherichia coli* effects on cholesterol and it causes gas gangrene as disease ( )

10- *Clostridium botulinum* produced enterotoxins and its mood of action effect on superantigen and causes food poisoning ( )

(C) Define all the following (4 marks):

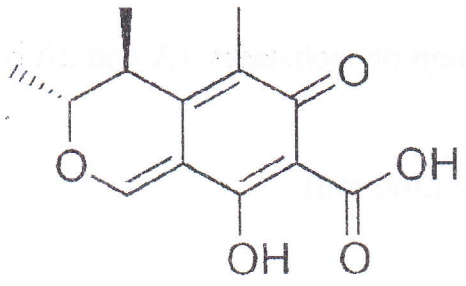
1] Amnesic shellfish poison (ASP)

2] Direct entry of protein toxins

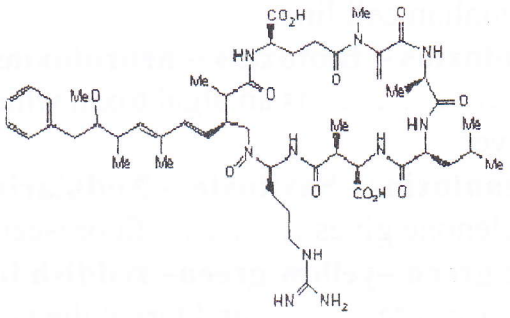
3] Bacterial endotoxins

4] Estrogenic toxin

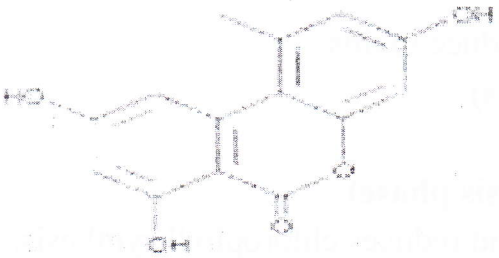
(D) Named all of the following microbial toxins and give the name of the producer (8 marks):-



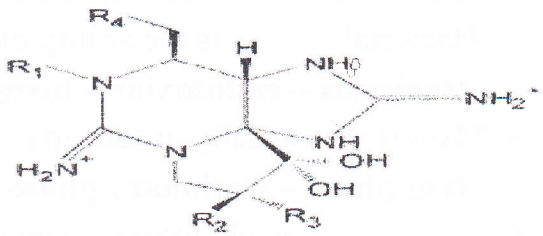
(A)



(B)



(C)



(D)

(E)Write on all of the following (12 marks):

1) Preparation of toxoids

2) Paralytic Shellfish Poisoning and how to control it

3) Biological effects of Ochratoxin A

4) Detoxification of aflatoxins

(F) Give reasons for all of the following (6 marks):

1- Clinical uses of ergot alkaloids in treatment of stop postnatal bleeding

2- Addition of clays to some animal feeds

3- Penicillic acid is unstable in orange juice, meet and chesses

Dr: Maysa M. A. Ali

Good luck

Assiut University Faculty of Science Botany & Microbiology Department		
Plant Cytology (Code: 323 B)		
For Under Graduate Students (3rd level)	First Semester 2019-2020	Time allowed :2 hours

Answer the Following Questions (50 Marks)

Question no(1): Put true √ or false × in front of each statement and correct the wrong statements (15 marks)

1. The first cell type on the earth was of fungi ( )
2. Mitochondria and chloroplasts are capable of producing their own ribosomes ( )
3. Rough endoplasmic reticulum synthesized lipids, while smooth ER synthesized proteins ( )
4. The liquid matrix of cytoplasm referred as the cytosol ( )
5. Phospholipid tails of cell membrane are hydrophilic in nature ( )
6. Water, carbon dioxide, ammonia, oxygen moved through the cell membrane freely without protein carrier ( )
7. Pili help bacteria during the attachment process ( )
8. Chloroplasts are usually small organelles (1 to 10 µm) found in plant cells ( )
9. The first stage of the photosynthesis take place in the stroma and the second stage in the thylakoidal membranes ( )
10. There is only one nucleolus per each plant cell ( )
11. Chloroplast moved and rearranged its position during the day depending on the light intensity ( )
12. Golgi apparatus could manufacture its own biological polymers ( )
13. Mitochondria produce the energy required to cell division, growth, and cell death ( )
14. Eukarotic ribosomes are 80S, while the prokaryotic ribosomes 70S ( )
15. Large cells have low surface area/ volume ratio ( )

Look in the back

Question no(2): Define five only of the following and put your answers in table
(10 marks, 2 for each)

Chromatin - Integral proteins – Proplastids – Kinetochores - Phospholipids - Chromosomes synapsis.

Question no(3): Compare in table between three only of the following
(12 marks, 4 for each)

1. **Different types of plant cell pits (with drawing).**
2. **Leucoplasts and chromoplasts.**
3. **Prokaryotic and eukaryotic plant cell.**
4. **Mitosis and meiosis cell division.**
5. **Cellulose and hemicellulose.**

Question no(4): Write on two only of the following
(13 marks, 6.5 for each)

1. **Ultra-structure and function of mitochondria.**
2. **Molecule transport by Golgi apparatus.**
3. **Interphase and prophase of mitosis and meiosis during the cell division.**

With My Best Wishes

Dr- Ghada Abd-Elmonsef Mahmoud

Assuit University
Faculty of Science
Botany & Microbiology
Department

Microbial toxins (393B)
Final exam :12-01-2020
Time allowed: 2 hours.
Total marks: 50

Q1: Place a tick √ in the correct answer. (15 marks)

1. Which one of the following is nephrotoxin and increases prenatal mortality of embryos chicken?
   a. zearalenone b. ochratoxin A c. penicillic acid d. alternariol

2. Which one of the following is related to difurocoumarolactone series?
   a. Afl. G_1 b. afl. B_1 c. afl. M_1 d. aflatoxicol

3. Which one of the following is derived from pentaketides?
   a. citrinin b. penicillic acid c. afl.G1 d. patulin

4. Which one of the following toxins can penetrate the target cell directly and / or by RME?
   a. anthrax b. cholera c. diphtheria d. tetanus

5. Which one of the following is required by small dose for inducing bacterial disease symptoms?
   a. endotoxins b. exotoxins c. polyamines d. H_2S

6. Which one of the following is the main producer of marine toxins?
   a. Chrysophyta b. Cyanophyta c. Phaeophyta d. Pyrrophyta

7. Which one of the following affects on the digestive system?
   a. zearalenone b. ochratoxin A c. aflatoxin B_1 d. alternariol

8. Which one of the following represents the range of LD_{50} (µg/kg) of anatoxin-a?
   a. 50-100 b. 20-50 c. 200-250 d. 50-150

9. Which one of the following can produce DSP toxins?
   a. *Oscillatoria* sp. b. *Dinophysis caudata* c. *Fucus* sp. d. *Nostoc* sp.

10. What does the A subunit in AB toxin stand for?
    a. Binding b. accumulation c. enzymatic activity d. penetration

11. Which one of the following is an esterogennic toxin?
    a. afl. B_1 b. citrinin c. zearalenone d. patulin

12. Which one of the following is the main producer of patulin on apples?
    a. *P. citrinum* b. *F. oxysporum* c. *P. expansum* d. *A. flavus*

13. Which one of the following is a cyanobacterial hepatotoxin?
    a. anatoxins b. nodularin c. hemolysin d. aphantoxins

Continue from page 1 to page 4

14. Which one of the following is the main producer of fumonisins in corn?
a. *P. citrinum* b. *F. oxysporum* c. *P. expansum* d. *F. virticilloides*

15. Which one of the following is involved in toxoids formation?
a. protein toxins b. lipopolysaccharides c. proline d. glucose

Q2. Give the scientific term for each of the following: (7.5 marks)

a. Closely related tetrahydropurine compounds which differ in toxicity.
(.....).

b. Microbial toxins that obviously bring about the death of animals.
(.....).

c. Microbial isolates that can produce toxins.
(.....).

d. Detoxified toxins which retain their antigenicity and their immunizing capacity.
(.....).

Q3: Explain briefly the mode of action of 3 only of the following (10 marks):

a. Cholera toxin

b. Brevetoxins

c. Fumonisin B_1

Continue from page 1 to page 4

d. Nodularin

Q4. Complete the missing data in the following table. (10 marks).

Microbial toxin	Producing microorganism	Chemical structure
Aflatoxin B_1		
Domoic acid		
Methyl mercaptan		

Continue from page 1 to page 4

Q5: Complete the following table (7.5 marks)

Microbial toxin	Toxic effects	Natural occurrence
Patulin		
Microcystins		
Zearalenone		

Best wishes

Prof Dr. Ahmed lofty El-Sayed

Continue from page 1 to page 4

Assiut University Faculty of Science Department of Botany & Microbiology		Course :Advanced Virology (B381) Exam: Final Written Exam Time :2hr.

Please Answer the Following Questions [50 Mark]

A- Comment [12 Mark]

1- Not any substance can act as antigen

2- Rabbits are preferable for antisera production

3- Advantages of tissue culture technique

4- Gastrointestinal tract as a natural barrier.

B- Show symptoms of : [13 Mark]

1- SARS

2- Bird flu

3- HAV

C- Difine : [15 Mark]

1- Coronaviridae

2- Haptens

3- Transformed cells

4- Titre

5- IgG

D- Give reason (s): [10 Mark]

1- Not all epitops are sharing at the same time in combination with paratopes.

2- Treatment of some antigens with formaldehyde.

3- Single radial immune diffusion test is not economic.

4- Animals are now rarely used for virus isolation.

Good luck

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Final Exam. For the 3rd level students (Microbiology) - Dec. 2019.

Subject: Biology of Aquatic Fungi (361 B) Maximum Allowed Time: 135 Min.

Answer The Following Questions:- (Note: 6 pages should be considered)

Q.1: Give the organism (s) name which is related to SIX Only:- (3 Marks)

a- A zoosporic fungus that attacks nematode eggs. (.....)

b- Gill rot disease of fish (.....)

c- Aquatic fungi that have high capability to degrade lignin (.....)

d- Zoosporic fungi which may be among the main reasons for the disintegration of a water blooms. (.....)

e- Potato wart disease which reduces crop yield and edibility. (.....)

f- Pythiomycoses for human. (.....)

g- A chytrid-infected frog causing chytridiomycosis and population declines worldwide.

(.....)

Q.2: Circle the correct answer (Give the fit word if it is missing) (5 Marks)

a- The association of organisms that live together and that exhibit well-defined nutritional or behavioral interrelationships.

(Communities – Ecosystems– Biodiversity – wetland - All of these)

b- An aquatic fungus which could be used as biocontrol agent for nematode

(*Coelomomyces* – *Olpidium* - *Aphanomyces* – None of all)

c- The physical location in the environment to which an organism has adapted

(Migrants – Mesosomes – Thermocline layer- lotic habitat – None of all)

d- The organisms which feed on a variety of food sources.

(Parasites – Saprophytes – Pathogens- Synergism- None of all).

d- The aquatic fungus which is an obligate parasite on some arthropods and thereby is emphasized the great potential in the biological control of mosquitoes larvae.

(*Olpidiopsis* - *Aphanomyces* – *Alatospora* – *Plasmidiophora* – Non of all)

Q.3: Give the scientific term which is related to TEN ONLY of the following (Put your answers in the next table):- (10 Marks)

a- Organisms that combat to capture of resources which have previously been captured by other organisms.

b- Group of metabolically related organisms that exhibit similar habitat requirements and that respond in a similar way to changes in their environment.

c- The community which held together by complex interactions between the biotic and abiotic factors in a given water area.

d- Variation of life forms, genera and species in an aquatic habitat.

e- The interaction between two different aquatic fungi at which one member benefits while the other does not benefit nor is it harmed.

f- It is a biological phenomenon by which an aquatic fungus produces one or more biochemicals that either positively or negatively influence the growth, survival, and reproduction of other organisms.

g- A natural aquatic environment which is lacking a continuous flow of water.

h- Aquatic fungi that move between aquatic and extra-aquatic habitats in haphazard rather than regular.

i- Description of certain aquatic habitat which should be considered in any sampling procedure and deals with depth, dimension, geology of shores, sediment distribution, currents, inflow and outflow of water, etc.

j- The buffer zone between the warmest and coolest layers in aquatic habitat which ordinarily prevents the mixing of the two layers.

k- Water ecosystems which are characterized by nutrient-deficient, relatively low productivity and support few microorganisms.

(Give your answers in the following table):-

No	Answer	No	Answer
a		g	
b		h	
c		i	
d		j	
e		k	
f			

Q.4: Define Briefly five only of the Following:- (10 Marks)

a- Resident or indwelling organisms:

b- Antagonism:

c-The light Profile of water ecosystem:

d- Energy and Nutritional Flow in Ecosystems:

e- Primary and secondary marine Ascomycetes:

f- Transient fungi-

Q.5: Give only one reason for each the following:- (3 Marks)

a- Superiority and predominance of aquatic hyphomycetes in aquatic ecosystem rather than terrestrial fungi and bacteria:-

b- The palatability of falling leaves and detritus which are colonized by aquatic fungi for aquatic invertebrates:-

Q.6: Write Briefly on each of the following:- (10 Marks)

a- Rumen fungi and its importance

b- Adapation of Zoosporic Fungi for aquatic habitats.

c- Occurrence, distribution and population of aquatic fungi as affected by turbidity, light and Water temperature.

d- Adaptation of Aquatic Hyphomycetes for water ecosystem:-

e- Adaptation of Aquatic Ascomycetes for water ecosystem:

Q.7: Write on only one of the following points: **(6 Marks)**

A- Different routs for origin of aquatic Ascomycetes:-

a-.....

b- .....

c- .....

B- The main difference between Ingoldian fungi and Aeroaquatic hyphomycetes:

Aeroaquatic hyphomycetes	Ingoldian fungi
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Q.8: Write Briefly on TWO ONLY of the following:- **(3 Marks)**

a- Interrelationship between aquatic fungi and stream invertebrates:

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b- Mycoremediation and its types:.....

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c- Potential counter-adaptations by fungi may involve hiding from invertebrates:

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The Best Wishes ***Prof. Abdel-Raouf Khallil***