



Final Exam. For the 2nd level students – Jan., 2024.

Academic Program: Botany and Microbial Biotechnology

Subject: Mycology (207 BT)

Maximum Allowed Time: 120 Min.

Answer the Following Questions (Illustrate your answers whenever possible)

Q1. Choose (T) for True sentence or (F) for False sentence) and correct the wrong words whenever possible (Answer 12 POINTS ONLY):- (12 Marks)

- 1- Psychrophilic fungi can live in wide range of temperature. ()
- 2- Ascocarps may be present or absent in the Ascomycota. ()
- 3- Thallospores are produced by transformation of pre-existing cells of the fungal thallus and are detached by decay of the hyphae, or disarticulation of the thallus. ()
- 4- Members of Basidiomycota produce sexual spores that are usually borne in groups of eight inside a sac-like structure. ()
- 5- Any fungus where a sexual stage has not been observed is not classified in the division Deuteromycota. ()
- 6- Cleistothecia represent the special structures in which conidiophores may be produced singly or united in the base (free in the top) in saucer-shaped structure. ()
- 7- The fungal taxa related to Oomycetes produce zoospores with single posterior whiplash flagella. ()
- 8- The cell wall of slime molds (Myxomycota) is made of chitin. ()
- 9- The female gametes are represented by haploid nuclei within definite structures known as ascogonia in Zygomyceteous fungi. ()
- 10- Imperfect (anamorphic) fungi produce thick-walled sexual spore known as zygospores. ()
- 11- Anteriorly tinsel uniflagellum is the characteristic features for Oomyceteous fungi. ()
- 12- The ostiolate flask-shaped conidiomata are known as perithecium. ()
- 13- Apothecium is a globose (spherical), completely closed fruit body with no special opening to the outside and contain scattered asci. ()
- 14- Fungi obtain their nutrients from other living or dead organisms. ()

Q.2: Give the Scientific term for 10 ONLY of the following:- (10 Marks)

- 1- The closed spherical sporocarps which are produced by some members of Ascomycota, in which the asci are usually scattered.
- 2- The amoeboid naked mass of multinucleate protoplasm lacking a definite form.
- 3- The fungal spores concerned with the fungal dispersal.
- 4- The fungal spores concerned with fungal with fungal survival.
- 5- Asexual, imperfect or conidial state of a fungal species.
- 6- The entire thallus converts into one or more reproductive bodies. Therefore, the vegetative and reproductive phases do not occur together.
- 7- The life cycle in which the main form of the life cycle is diploid.
- 8- The wide, open, saucer-shaped or cup-shaped sexual fruit body produced by some fungi.

- 9- Fungi in which the sexual stages are unknown and sexual spores are lacking.
- 10- The basidium that is divided into more than one cell by transverse or longitudinal setpa.
- 11- The main sterol found in the plasma membrane of fungi.
- 12- The fungal species in which a single mycelium is capable of reproducing sexually.

A Table for your answers:

1		2	
3		4	
5		6	
7		8	
9		10	
11		12	

Q.3: Choose the correct answer (A, B, C, or D), write the correct answer if it is missing:-
(Answer 14 points only) (14 Marks)

- 1- What is the cell wall of true fungi made up of?
 A. Chitin. B. Glucans. C. Mannans. D. Peptidoglycan.
- 2- The fungi which derive their food directly from dead organic matter are known as
 A. Predators. B. Decomposers. C. Mutualists. D. Parasitic fungi.
- 3- What is the name of the special hyphal tips through which parasitic fungi absorb nutrients directly from the cytoplasm of the living host?
 A. Haustoria. B. Mildew. C. Constricting ring. D. All of the above.
- 4- Which of the following statement is false about fungi?
 A. Unicellular or multicellar microorganisms. B. Fungi produce their own food.
 B. C. Some fungi are edible. D. Fungi grow on dead and decaying substances.
- 5- Fungi which do not produce sexual spores where the sexual reproduction is lacking are known as
 A. Myxomycota. B- Zygomycotina. C- Ascomycotina. D- None of all.
- 6- The highly resistant structures which are produced by some fungi under unfavorable conditions are referred as:-
 A- Chlamydospores. B- Cell wall. C- Zoospores. D- Antibiotics.
- 7- Copulation of two motile, unequal size and morphologically similar gametes is referred as
 A- Anisogamy. B- Oogamy. C- Fragmentation. D- Heterogamy.
- 8- The fungal cell is uniquely characterized by the presence of

- A- Lomasomes. B- Smooth endoplasmic reticulum. C- Both a&b D- Cell wall.
- 9- The naked multinucleate protoplasmic mass which represents the somatic structure in some slime molds (Myxomycota) is referred as:-
 A- Pseudoplasmodium. B- Plasmodium. C- Basidiospores. D- Mycotoxins.
- 10- Aggregation of large, erect and compact sporophores (compound conidiophores) are referred as
 A- Pycnidia. B- Synnema. C- Acervulus. D- Ascospores.
- 11- The endogenous sexual spores which are produced by some higher fungi are known as:-
 A- Arthrospores. B- Zygosporangia. C- Cleistothecium. D- None of all.
- 12- The fungal thallus which is entirely converted into reproductive structures is known as:-
 A- Heterothallic. B- Saprophytic. C- Eucarpic. E- None of all.
- 13- Mycorrhiza, a relationship between fungi and roots of higher plants is:-
 A- Parasitic relationship. B- Saprophytic relationship.
 C- Epiphytic relationship. D- None of all.
- 14- The small particles which located in pockets between the cell wall and the plasma-membrane of the fungal cell are known as:-
 A- Mesosomes. B- Trichomes. C- Zoospores. D- Ascogonium.
- 15- Yeasts are unlike bacteria in being
 A- Unicellular. B- Multicellular. C- Prokaryotic. D- Eukaryotic.
- 16- Fungi which reproduce only by asexual means, and produce conidia:-
 A. Are unable to undergo mitosis. B. Are members of the Deuteromycota.
 C. Lack an anamorphic phase. D. All of the above.

Q.4: Define briefly with labeled illustrations TWO ONLY of the following:- (4 Marks)

1- Stroma:

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2- Gametangial copulation:

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4- Sexual spores in both Ascomycota and Basidiomycota:

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Q.5: Give only one difference between each of the following (5 points only):- (10Marks)

1	Cleistothecium	Perithecium
2	Primary plasmodium	Secondary plasmodium
3	Ascomycotina	Basidiomycotina
4	Oogonium	Ascogonium
5	Hetero-basidiomycetinae	Eubasidiomycetinae
6	Plasmodiophora	Octomyxa

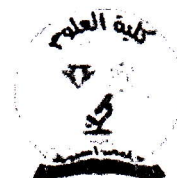
Good luck

Prof. Abdel-Raouf Khallil



Final Exam

2023/2024



Botany & Microbiology Department

Virology (281 B)

Faculty of Science

Second Level Students

(Credit hours)

Time: 2 hours

Answer the following: [Total 50 marks]

Q1: Choose the Correct Answer: (10 marks)

- 1- The first record of a plant virus disease is
a-TMV b-CaMV c-Tulip breaking virus d- Turnip Yellow Mosaic virus
- 2- Most plant viruses contain nucleic acid
a-DNA b- tRNA c- RNA d-RNA and DNA
- 1- Infection of induces antibodies and may cause inflammation.
a-viroid b-prions c- pseudovirion d-none of the mentioned
- 3- The chemical component that is found in all viruses is
a-RNA d-DNA c-lipid d-protein
- 4- Which of the most common capsid shape of the viruses ?
a-cub b-rod c-icosahedron d-cone
- 5- The structure component that is found in all viruses is
a-DNA b-capsid c-envelope d-spikes
- 6- Who purified TMV particles and awarded a Nobel Prize?
a-Purdy b-Beijerinck c-Stanley d-Ivanowski
- 7- Who suggested a *cryptogram* to add beside the abbreviated name?
a- Gibbs and Harrison b-Beijerinck c-Stanley d- Ivanowski
- 8- Which infectious particles that are composed only of protein?
a-virions b- prions c- pseudovirions d-viroids
- 9- Each plant virus group divided intomembers types.
a- three b- four c- two d- five

Q2: Put (V) or (X) on the following sentences: (5 marks)

- 1- The virus has non-metabolic activity away from host cells ()
- 2- Capsid is responsible for carrying genetic information. ()
- 3- Viruses consider acellular microorganism. ()
- 4- Viruses can infect all types of organisms. ()
- 5- Plant viruses infect whole plant tissues ()

Q3: Illustrate the target from the cryptogram and solve the following: (5 mark)

R/1: 1.1/16 + 0.8/16: E/U: S/Ap

Q4: Identify the following: (10 marks)

a-Prions b-Viroid c- Virology d- Necrosis e-Hyperplasia f-Virus source g-
Latent period h-Defective viruses i-Circulative transmission k-Nucleocapsid

Q5: Complete the following statements: (8 marks)

- 1- The visible symptoms of viral infection on host plant are and
- 2- Virus-like symptoms with other agents are and
- 3- Viral capsid consists of subunits called

Q6: Write on three only of the following: (12 marks)

- a- Characters of virus vectors
- b- Factors affecting transmission of viruses by contact
- c- Differences between virus and other microbial agents.
- d- Differences between Plant viruses and animal viruses
- e- Function of viral Capsid

Best Wishes..... Prof. Naeima Yousef

	Assiut University – Botany and Microbiology department	
	Final Exam (2024) for 2 nd level students (Biotechnology program)	
	Phycology (204 BT)	
	Time allowed: 2h	Total Marks:50

Exam in 4 pages

Question #1: Choose the correct answer: [Answer 10 only]

Q1		10
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- (1) Free floating aquatic algae are known as
 (a) Epiphytic algae (b) Epilithic algae (c) Phytoplankton (d) Symbiotic algae
- (2) Which are the most primitive group of algae.
 (a) Blue green algae (b) Green algae (c) Desmids (d) Diatoms
- (3) Water net is the common name for
 (a) *Ulva* (b) *Sargassum* (c) *Chara* (d) *Hydrodictyon*
- (4) Phycoerythrin is acolored pigment that can be found in.....
 (a) Blue-Cyanophyta (b) Red-Rhodophyta (c) Blue-Rhodophyta (d) Red-Chlorophyta
- (5) Asexual reproduction by the formation of daughter colony or autocolony is found in.....
 (a) *Hydrodictyon* (b) *Volvax* (c) *Pandorina* (d) All of the above
- (6).....algae are those that can produce both male and female gametes from the same cell.
 (a) Monoecious (b) Diecious (c) Both (a) and (b) (d) None of the above
- (7) Which pair of the following are wrongly matched?
 (a) Phaeophyta – Fucoidan (b) *Euglena* – Mesokaryote
 (c) Cyanobacteria – Glycogen (d) None of the above
- (8) Which is a globule?
 (a) An oogonium of *Chara* (b) Zygote of *Oedogonium*
 (c) An antheridium of *Chara* (d) A daughter colony of *Volvax*
- (9) Reserve food material as oils can be found in
 (a) Phaeophyta (b) Desmids (c) Green algae (d) Xanthophyta
- (10) Which of the following spores are found in *Oedogonium*?
 (a) Androspores (b) Zoospores (c) Akinetes (d) All of the above
- (11) Chlorophyll C is found in.....
 (a) Bacillariophyta (b) Phaeophyta (c) Xanthophyta (d) All of the above

Question #2: Complete the following sentences: [Answer 10 only]

Q2		10
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- 1- Polyhedral cells occur during asexual reproduction of
- 2- Diplontic life cycle is a characteristic feature of.....
- 3- Spermatia is.....
- 4- Quadriflagellated zoospores is found in.....
- 5- The cell wall of Bacillariophyta is composed of.....
- 6- Algae living on the surface of rocks are termed.
- 7- Unicellular algae which have two semi-cells are known as.
- 8- Eight-celled stage during asexual reproduction in *Volvox* is known as
- 9- Plurilocular sporangium is found in
- 10- Algae composed of indefinite number of cells is referred to as.....
- 11- Both *Chlamydomonas*, *Pandorina*, and *Volvox* haveshaped chloroplast.

Question #3: Identify 5 ONLY of the following terms and mention their function:
(Support your answer with drawings and give an algal example for each case)

1) Synzoospores

Q4		20
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2) Palmella stage

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3) Unilocular sporangium

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4) Isogamy

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5) Heterocyst

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6) Aplanospores

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(a) Sexual reproduction of centric diatoms and role of auxospores.

(a) Sexual reproduction of centric diatoms and role of auxospores.

(b) Asexual reproduction in *Hydrodictyon*.

With all best wishes..... Prof. Dr./ M. S. Adam & Dr./ Mohamed Gomaa



**Botany and Microbiology Department
For Students of the Second level**



{50Marks}

Plant Ecology (B 241)

Time: 2 hours

First Semester 2023/2024

Answer on the following questions:(15Marks)

I-Choose the correct answer of the followings:

1-I.R. waves are absorbed by:

- a- O_2 b- CO_2 c- O_3 d- NO_2

2- Level or degree of molecular activity means:

- a-heat b- temperature c- intensity d- gm. cal/ cm^2 /hr.

3-Proteins may be precipitated due to change in:

- a-light b- oxygen c- water d- pH.

4- Phenomenon of phototropism is affected by :

- a-red b- far red c- violet d- blue.....spectrum

5- Desertification is related to:

- a-altitude b- longitude c- latitude d- soil erosion

6- Plants grow on the rock surface are called:

- a- Chasmophytes b- Psammophytes c- Lithophytes d- Oxylophytes

7- Alluvial soil is transported by:

- a- wind b- gravity c- glaciers d- running water

8- In soil profile, "B" horizon is called layer of:

- a- accumulation b-eluviation c- sub- Soil d-alleviation

9-Water held in thin film around the surface of soil particle is:

- a- lattice b- hygroscopic c- gravitational d- capillary water

10-Water holding capacity of soil is high in the presence of:

- a-minerals b- organic matter c- sandy particles d- gypsum

11-PH of organic mull is:

- a-acidic b- alkali c- basic d- neutral

12-Reclamation of the white alkali soils by:

- a-gypsum b- lime c- CaCO_3 d- Na_2CO_3

13-Plants are wilted in soil at matric potential:

- a-0.9 Mpa b-1.2 MPa c- 1.4 MPa d-1.5 MPa

14-Fungi and bacteria are called:

- a-producers b- herbivorous c- scavengers d- carnivorous

15-Excess of CO_2 in the atmosphere caused:

- a-global warming b- flooding c- H_2CO_3 formation d-none

II-Define each of the followings: (15Marks)

1-Ecosystem, 2-luminous energy, 3-photoperiodism, 4-VPD, 5- residual soil, 6- soil porosity, 7-mull, 8-wilting coefficient, 9-C/N ratio, 10-oxylphytes.

III-Write on THREE only of the followings: (20Marks)

1-Give the differences between acidic and alkali soils.

2-Adaptional features which protect plants against high temperatures

3-Soil profile

4-Negative effects of wind on plant life and plant environment.

GOOD LUCK

Prof. K. A Farghali



First Semester Exam.
2023/2024



**Botany & Microbiology
Department**

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

Time: 2 hours

يتم طمس (تسويد) الإجابة المختارة من قبل الطالب باستخدام القلم الجاف فقط في ورقة الإجابة

(50 Marks)

Q1): Choose the correct answer:

1. Movement of water through the cell wall
a) Apoplast b) Symplast c) Tonoplast d) None of the above
2. What is true about osmosis?
a) Diffusion of water through a semi-permeable membrane
b) It is a passive process.
c) Both A and B
d) None of the above
3. What is active transport?
a) A transportation medium
b) No energy required.
c) Movement of molecules across a semi-permeable membrane with a protein
d) Movement of molecules across a semi-permeable membrane against a concentration gradient with a protein
4. How is isotonic defined?
a) When the amount of the solute is higher than the amount of water in a cell.
b) When the amount of water and solute in a cell are at equilibrium
c) By passive transport
d) Diffusion of water through a semi-permeable membrane
5. What is osmotic pressure?
a) The pressure caused by the movement of water across a membrane from low concentration of solute to high concentration of solute.
b) The pressure caused by the movement of water across a membrane from high concentration of solute to low concentration of solute.
c) The pressure caused by the movement of a solute across a membrane from high concentration to low concentration.
d) The pressure caused by the movement of a solute across a membrane from low concentration to high concentration.
6. Which of the following is a model for transpiration?
a) Cohesion-Adhesion transpiration model
b) Cohesion-Tension transpiration model
c) Tension transpiration model
d) All of there
7. Pressure on plant cell wall caused by the osmotic movement of water is called
a) Osmotic pressure c) Turgor pressure
b) Wall pressure d) Tonic pressure
8. In the process of Imbibition, the substance that imbibes water is called _____
a) Adsorbent b) Imbibant c) Osmosis d) Hydrophilic

9. How does imbibition depend on temperature?
- It decreases with a rise in temperature.
 - It increases with a rise in temperature.
 - It is not affected by temperature.
 - None of the above
10. The stability of lyophobic is consequence of the
- Van der Waals between particles
 - Small particles size
 - Shape of the particles
 - Electrical double layer at the surface of particles
11. The disperse phase in colloidal iron (III) hydroxide and colloidal gold is positively and negatively charged respectively. Which of the following is not correct?
- Magnesium chloride solution coagulates the gold sol more readily than iron (III) hydroxide sol.
 - Sodium sulphate solution causes coagulation in both sols
 - Mixing of the sols has no effect.
 - Coagulation in both sols can be brought about by electrophoresis.
12. Arsenic (III) sulfide forms a sol with a negative charge. Which of the following ionic substances should be most effective in coagulating the sol?
- KCl
 - MgCl₂
 - Na₃PO₄
 - Al₂(SO₄)₃
13. Which of the following minerals plays a major role in energy storage and transfer of ADP into ATP molecules?
- Phosphorus
 - Magnesium
 - Molybdenum
 - None of the above
14. Which of the following statements is false about nutrition?
- Nitrogen and phosphorus are macronutrients.
 - Plant hormones are nutrients.
 - Manganese and molybdenum are micronutrients.
 - Nutrition provides energy for carrying out various functions.
15. Chlorosis is yellowing of the leaves, caused due to the deficiency of
- Zinc
 - Potassium
 - Manganese
 - All of the above
16. Which of the following minerals is a constituent of cell membranes and nucleic acids?
- Zinc
 - Potassium
 - Phosphorous
 - Manganese
17. As light intensity increases, the transpiration rate _____. The stomata _____ to allow more carbon dioxide into the leaf for photosynthesis.
- Increases, close
 - Decreases, open
 - Decreases, close
 - Increases, open
18. What happens to the guard cells when water is not available within a plant?
- The guard cells open.
 - Guard cells close.
 - The guard cells become double.
 - The guard cells increase.
19. Pick the incorrect statement regarding apoplast movement.
- movement of water is through mass flow.
 - gradient-dependent
 - mass flow of water takes place because of cohesive and adhesive properties of water.
 - continuous water stream gets tension when water is absorbed by root hairs.
20. Most of the water flow in roots occur via the
- Symplast
 - Apoplast
 - Active transport
 - Imbibition

- 21. Pressure in roots develops due to**
 a) low osmotic soil potential
 b) rise in transpiration.
 c) active absorption
 d) passive absorption
- 22. Guttation is the result of**
 a) Root pressure
 b) Diffusion
 c) Transpiration
 d) Osmosis
- 23. Root pressure**
 a) Pushing pressure
 b) Negative pressure
 c) Tries to cope up with water requirements of well heightened plants.
 d) Effects are observed during the daytime and evening time.
- 24. Which of the following minerals is required for the synthesis of chlorophyll?**
 a) Copper b) Potassium c) Nitrogen d) Iron
- 25. Hygroscopic water is also called.**
 a) Adsorbed water
 b) Free water
 c) Structural water
 d) Held water
- 26. How many oxygen atoms xanthophyll contains?**
 a) Three b) Four c) One d) TWO
- 27. Dark reaction is termed as**
 a) Photolysis of water b) Formation of assimilatory powers
 c) C₃ pathway d) Point (a) and (c)
- 28. Formation of succinic acid occurs in**
 a) Chloroplast membrane b) Cristea c) Cytoplasm d) Matrix
- 29. Conjugated enzyme is composed of**
 a) Coenzyme b) Cofactor c) Apoenzyme d) All of the above
- 30. With oxygen, glycolysis allows cells to make huge amounts of ATP through a process called**
 a) Photophosphorylation b) Fermentation
 c) None of the above d) Electron transport
- 31. Without the presence of enzymes, the reactions necessary to sustain life would require _____ to occur**
 a) Larger cells b) Larger proteins c) Higher temperatures d) Smaller atoms
- 32. In the photosynthesis light energy converted into:**
 a) FADH₂ b) Fructose c) ATP & NADPH d) a and b
- 33. The Fermentation occurs in**
 a) Stroma b) Cytoplasm c) Cell wall d) Vacuole
- 34. The oxygen released during photosynthesis comes from the**
 a) Oxidation of water molecules b) Formation of ATP
 c) Formation of glucose d) Splitting of carbon dioxide molecules

35. The most important protein in the plant cell is:
 a) Isomerase b) Epimerase c) Oxidase d) Rubisco
36. The competitive inhibitor binds with
 a) Product b) Substrate site c) Oxidase d) Rubisco
 c) The site other than active site d) b and c
37. Carotenoids contains:
 a) Methyl group b) 40 C atoms c) Ammonia d) Peptide bonds
38. They are flattened disks and bounds by a membrane with a lumen
 a) Stroma b) Thylakoid membrane c) Matrix d) Ribosome
39. The transamination of α -ketoglutaric acid to form
 a) Glutamic acid b) Citric acid c) Fumaric d) Lactic acid
40. Which of the following is a produce of the light independent reaction
 a) Oxygen b) NADPH c) Malic acid d) Glucose
41. The oxidized form of nicotinamide adenine dinucleotide is:
 a) NAD b) NADPH₂ c) FADH₂ d) NADH₂
42. Electron acceptor of photosystem I is
 a) Cytochrome c b) Plastoquinone c) Ferredoxin d) None of the above
43. The oxidation of phenolic compounds to the quinone form in the atmospheric oxygen is catalysed by
 a) Peroxidase b) Sucrase c) Oxidase d) Amylase
44. Photosystems are functional pigment group located on the
 a) Stroma b) Thylakoids membrane c) Cytoplasm d) Matrix
45. Photons of light when striking chlorophyll (a) molecule can be
 a) Transmitted b) Absorbed c) Reflected d) All of the above
46. EC (1.11.1.11) is referred to the
 a) Oxidase b) Catalase c) Urease d) Ascorbic Peroxidase
47. Who termed the enzyme as ferments?
 a) Louis Pasteur b) Wilhelm Kühne c) Eduard Buchner d) J. B. Sumner
48. The enzyme reacts only with isomer is called
 a) Absolute specificity b) Relative specificity c) Optical specificity d) Inhibitors
49. Many enzymes require the presence of inorganic ions for full activity; that is called
 a) Inhibitors b) Activators c) Coenzyme d) Uncompetitive inhibitors
50. Acceptor of carbon dioxide in Calvin cycle is.....
 a) FADH₂ b) RUBP c) GAP d) Sucrose

Good luck

Dr. Abeer Radi & Dr. Fatma Farghaly



First Semester- Final Examination

Subject: Course B 271 (Bacteriology)

Students: (Microbiology; Chemistry and Microbiology sections)

General Instructions: -Answer All the following questions.

Q1. Place a tick $\sqrt$ in the correct answer (Ten only). 10 Marks

1 Which of the following dyes used in differential staining?

- a. Basic dyes b. Acidic dyes c. Acidic and Basic dyes d. Fluorescence dyes

2 Which of the following diseases is caused by an endospore-forming bacterium?

- a. Tuberculosis b. Cholera c. Tetanus d. Gonorrhea

3 Which one of the following is used by *Nitrobacter* as their electron source.

- a. NH_4 b. NO_2 c. NO_3 d. H_2S

4 Which of the following is an example of a bacterial species that lacks flagella?

- a. *Escherichia coli* b. *Salmonella enterica* c. *Streptococcus pyogenes* d. *Vibrio cholerae*

5 Which structure in bacterial cells is responsible for locomotion?

- a. Ribosomes b. Nucleoid c. Flagella d. Capsule

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 methods is suitable for sterilizing heat-labile liquids?

- a. Irradiation b. Autoclaving c. Pasteurization d. Filtration

8 What was Robert Koch's established during the golden age of bacteriology?

- a. Etiology b. Aseptic technique c. The first antibiotic d. Bacteriophage

9 Which phase in a growth curve that the bacteria are checking and adjusting to their environment?

- a. Stationary phase b. Log phase c. Decline phase d. Lag phase

10 Which kingdom of living organisms includes bacteria and cyanobacteria?

- a. Monera b. Protista c. Fungi d. Plantae

11 An organism that expends energy to grow in a habitat with a low water activity in order to maintain internal solute concentrations to retain water is?

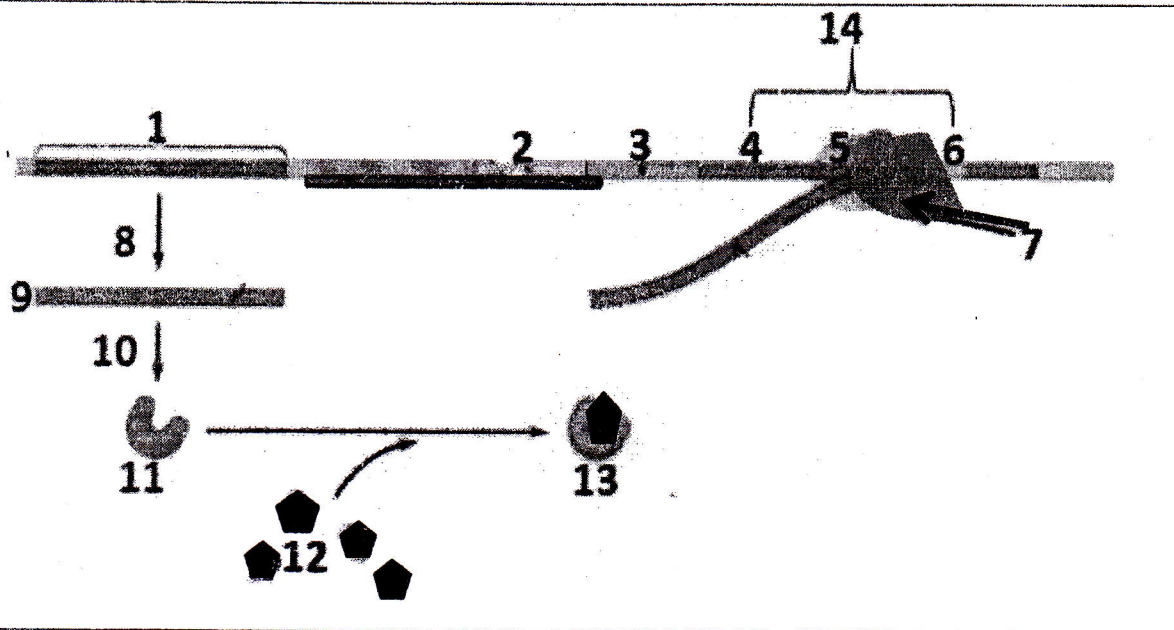
- a. Osmophile b. Acidophile c. Alkalophile d. Aerophiles

Q2. Write the suitable definition for each scientific term (Ten only).

10 Mark

No	Scientific term	Definition
1	Differential medium	
2	Glycocalyx	
3	Decimal reduction time	
4	Chemotaxis	
5	Growth factors	
6	Magnetosome	
7	Virulence plasmid	
8	Antiseptics	
9	Generation time	
10	Chemolithotrophs	
11	Transduction	

Q3. Look at the model provided and answer the following: 10 Marks



1. Identify each of the labeled structures from 1-14 in the model. 7 Marks

1	8
2	9
3	10
4	11
5	12
6	13
7	14

2. What is the name of this model and its state? 0.5 Mark

3. Where is the region of which component # 7 can start to bind? 0.5 Mark

4. What happens if substance # 12 is missing and what is the state of the model? 0.5 Mark

5. What are the products of regions # 4, 5 and 6 and their function 0.5 Marks

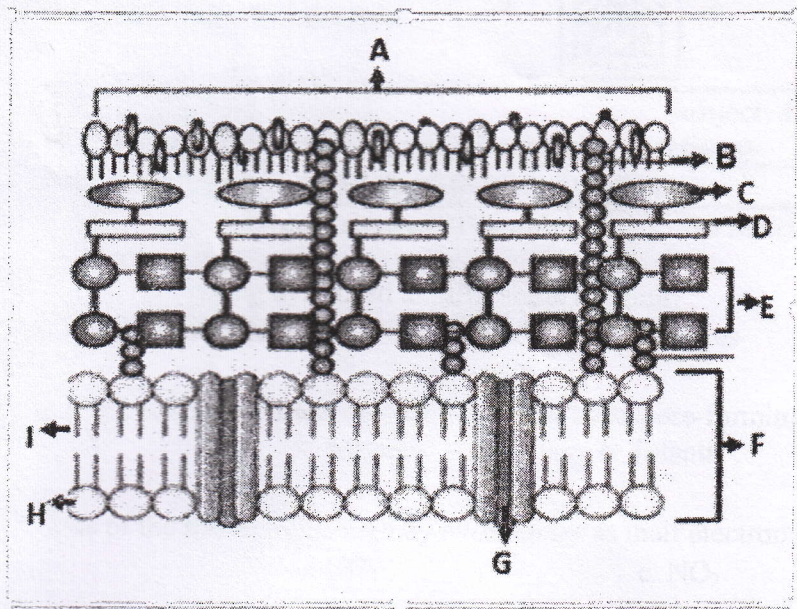
5. What are the goals of such system? 1 Marks

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

10 Marks

1. The causal agent of dental caries is
2. *Actinomyces bovis* is causal agent of.....
3. The erythromycin block bacterial growth by binding reversibly to
4. Meningitis is caused by.....
- 5..... is structure analog to P-aminobenzoic acid and blocks the formation of
6. The antibiotic Phosphonomycine is structure analaog to and blocks the formation of
7. The antibiotic D-cycloserine is structure analog to and bind with
8. Green non-sulfur bacteria belongs to group of.....
9. Psychrophilic bacteria adapted to their cool environment due to
10. Non-ionizing radiation hasand causes cell damage by forming
11. Integration of bacterial plasmid with bacterial chromosome is called

Q5. Look at the diagram provided and answer the following: 10 Marks



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 staining can be applied for diagnosis of these bacteria?

1 Mark

3. Give the scientific name of two species which have the above structure and their diseases? 2 Mark

4. Which of the above structures is hydrophilic and hydrophobic portions?

1 Mark

5. Write two functions for structure F.

1 Mark

6. Write two functions for structure E.

1 Mark

Good Luck

Prof. Dr. Mohamed Hemida Abd-Alla

Faculty of Science Botany & Microbiology Department		كلية العلوم قسم النبات والميكروبيولوجي
General Microbiology (291 B) Time: Two hours Total degree: 50 marks	First semester exam - the academic year 2023/2024 Second Level Exam date: Saturday, 20/01/2024	

Part I (Virology and Bacteriology)

Answer all the following questions:

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

1. Structure of Gram positive and negative cell wall.
2. Staphylococcal diseases.
3. Virus replication and transmission
4. Bacterial flagella

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

1. Pill and Fimbriae
2. Capsule and slime layer

The third question: Choose the correct answer (6 marks)

1. Bacteria can fix nitrogen due to the presence of enzyme.
 - a. Nitrogenase
 - b. Nitrate reductase
 - c. Catalase
 - d. Glutamine reductase
2. Endotoxin produced by gram negative bacteria is present in:
 - a. Peptidoglycan
 - b. Lipopolysaccharide
 - c. Teichoic acid
 - d. Inner membrane
3. *Mycobacterium tuberculosis* has positive response to:
 - a. Capsule staining
 - b. spore staining
 - c. Acid-fast staining
 - d. flagella staining
4. Extra chromosomal, circular, double stranded, self-replicating DNA in bacteria is
 - a. Cosmid
 - b. Plasmid
 - c. Capsid
 - d. Phasmid
5. Which among the following, the colony is "fried egg" appearance
 - a. Mycoplasmas
 - b. Spirochetes
 - c. Actinomycetes
 - d. Vibrios
6. Which of the following diseases can be caused by *Streptococcus pyogenes*?
 - a. Meningitis
 - b. Nasopharyngitis
 - c. Sepsis
 - d. Pharyngitis

Part II (mycology)

Q4:- Put (✓) in front of correct sentence or (X) in front of correct sentence on Ten only of the following:- (10 Marks)

1. The pathogenicity of *Cryptococcus neoformans* is attributed to capsule formation. ()
2. Follicolus fungi live on plant's bark habitats. ()
3. Sporangiospores are non-motile asexual units produced singly or in chains at the tip of specialized cells. ()
4. Biotrophic fungi have ability to grow on synthetic medium. ()
5. Chromagar medium is used for the differentiation between *Candida* species. ()
6. Oomycetes are known as Pseudofungi. ()
7. Basidiomycetes are characterized by crozier formation during sexual reproduction. ()
8. *Aspergillus niger* serves as model fungal organism in biological researches. ()
9. Rhizomorphs are thick strands, root like aggregations of somatic hyphae. ()
10. In Pseudoparenchyma, the fungal hyphae arranged loosely parallel to one another. ()
11. Fungi store their food in the form of glycogen. ()

Q5:- Write short notes on Three only (with drawing illustration if possible) of the following:- (9 Marks)

- a- Types of sporangium in Zygomycetes.
- b- Different types of mycelia in Basidiomycetes showing the types of basidia.
- c- Life cycle of *Rhizopus stolonifer*.
- d- Sexual fruiting bodies in fungi.

Q6:- Give the difference between Three only (with drawing) of the following:- (6 Marks)

- a- Sclerotium and cleistothecium.
- b- True conidium and sporangiole.
- c- *Saprolegnia* and *Dicthyuchus*.
- d- Zygosporangium of *Rhizopus* and *Zygorrhynchus*.

Good Luck

Dr. Amal W. Danial

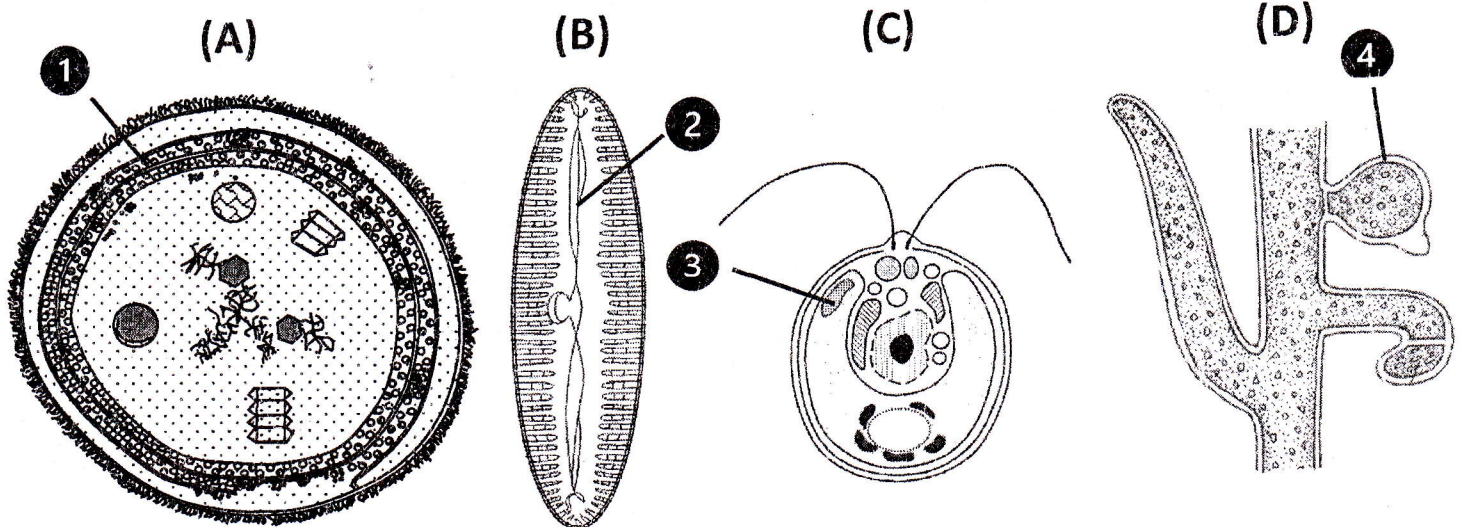
Dr. Elhagag A. Hassan

Answer the following questions

Exam in 4 pages

Q1
13

Question #1: Examine the following drawings and answer the following questions:



- (a) The drawing (A) belongs to phylum
Because the cell isand has.....
- (b) The drawing (B) belongs to phylum
Because the cell has
- (c) The drawing (C) belongs to phylum
Because the cell isand has.....
- (d) The drawing (D) belongs to phylum
Because the cell is
- (e) The pointed structures are:
 (1)
 (2)
 (3)
 (4)
- (f) The color of microalgae with the structure (A) is
Because.....
- The color of microalgae with the structure (B) is
Because.....

The color of microalgae with the structure (C) is

Because.....

The color of microalgae with the structure (D) is

Because.....

(g) The cell wall of microalgae with the structure (A) is composed of

The cell wall of microalgae with the structure (B) is composed of

The cell wall of microalgae with the structure (C) is composed of

The cell wall of microalgae with the structure (D) is composed of

Question #2: Complete the following table:

Q2
12

Algae	Thallus form	Asexual reproduction	Sexual reproduction	Type of life cycle
		Quadri-flagellated zoospores		
	Net-like coenobium			
<i>Ectocarpus</i>				
				Diplontic life cycle
			Aplanogametic isogamy (conjugation)	
	Unicellular motile			

Question #3: Write the scientific term for each of the following:

5

- (a) A reserve food material in Cyanobacteria, which is used as a bioplastic.
- (b) The reserve food material of Rhodophyta.
- (c) Unicellular algae which have two semi-cells.
- (d) The most primitive group of algae.
- (e) Algae living on the surface of mud.
- (f) Microalgae which live in a glass-like house.
- (g) Accessory pigments in algae which chemically has C, H, and O.
- (h) A mesokaryotic motile microalga.
- (i) Specialized cells for asexual reproduction in *Volvox*.
- (j) Algae which can only produce both male and female gametes from the same thallus.

Question #4: Identify 10 ONLY of the following terms and mention their function:

Q4
20

(Support your answer with drawings and give an algal example for each case):

(a) Unilocular sporangium

.....

.....

.....

.....

.....

(b) Carpogonium

.....

.....

.....

.....

.....

(c) Unilocular sporangium

.....

.....

.....

.....

.....

(d) Auxospores

.....

.....

.....

.....

.....

The color of microalgae with the structure (C) is

Because.....

The color of microalgae with the structure (D) is

Because.....

(g) The cell wall of microalgae with the structure (A) is composed of

The cell wall of microalgae with the structure (B) is composed of

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<i>Ectocarpus</i>				
				Diplontic life cycle
			Aplanogametic isogamy (conjugation)	
	Unicellular motile			



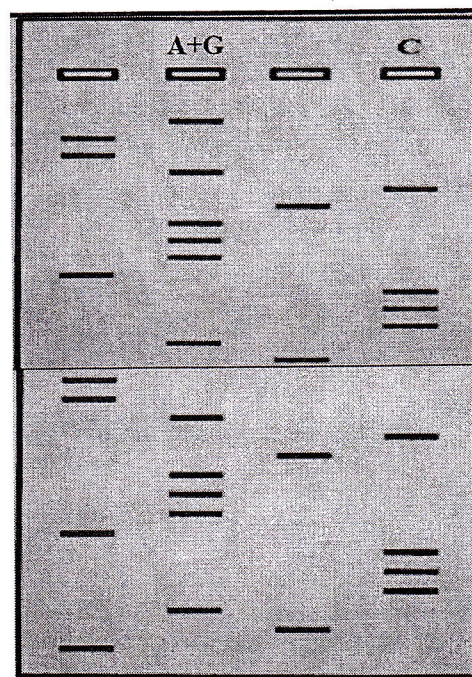
Molecular Biology (212B)	Final exam (17 th Jan 2024)	Time: 2 hours
Microbiology & Botany students		2 nd level

Answer the following questions (50 Marks)

I. Write on each of the following:

(10 Marks)

1. Read the following gel electrophoresis shown in the left, write the sequence of DNA and give the method of sequence analysis.
2. Strategies for DNA replication termination.
3. Processing of primary mRNA.
4. Blue/white screening.
5. Quaternary structure of DNA.



II. Compare between 10 only of the following:

1. Southern blot & Western blot
2. RNA & DNA
3. Plasmid & Cosmid as vectors
4. Chromosome in Eukaryotes and Prokaryotes
5. Promoter in Eukaryotes & Prokaryotes
6. Function of helicase & gyrase
7. Gene in Eukaryotes and Prokaryotes
8. Sense & Antisense strands
9. Z-DNA & B-DNA
10. Ribosome in Eukaryotes and Prokaryotes
11. RNA polymerase & DNA polymerase

III. Define 5 only of the following scientific terms:

(10 Marks)

1. Mastermix
2. Telomerase
3. Bacterial transformation
4. Gene cloning
5. Okazaki fragment
6. Charged- tRNA.

IV. Give the biological function for 10 only of the following:

(10 marks)

1. Reverse transcriptase
2. Sigma factor protein
3. Dideoxyribonucleotide
4. Gel electrophoresis
5. Thermal cycler
6. Helicase
7. Primer
8. Restriction enzyme
9. Topoisomerase
10. SSBP
11. Histones

V. Choose the correct answer for 20 only of the following:

(10 Marks)

1. Which of the following types of RNA codes for a protein?
a. tRNA b. mRNA c. rRNA d. dsRNA
2. The end of a nucleic acid strand with a free phosphate group is called
a. 3' prime b. 5' prime

"بقية الأسئلة في الصفحة القادمة"

3. Which of the following is not involved in the initiation of DNA replication?
 a. Helicase b. Gyrase c. SSBP d. Ligase
4. DNA with a low GC content is more difficult to denature than that with a high GC content.
 a. True b. False
5. The uptake of naked DNA from the surrounding environment takes place by
 a. Transformation b. Transcription
 c. Conjugation d. Translation
6. Which of the following is important for the initiation of transcription?
 a. Helicase b. Primer c. Promoter d. Telomere
7. All of the following are used in PCR EXCEPT:
 a. Taq polymerase b. Restriction enzymes
 c. Oligonucleotide primers d. dNTPs
8. Which of the following is not found within DNA structure?
 a. Phosphodiester bonds b. Amino acids
 c. Nitrogen bases d. Pentose sugar
9. The process of making a mRNA copy of a gene is called
 a. Replication b. Transcription c. Translation d. Gene expression
10. In eukaryotes, mature mRNA contains each of the following features EXCEPT
 a. Intron b. Exon c. 5' cap d. 3' poly-A tail
11. Which of the following types of RNAs translated into protein
 a. tRNA b. mRNA c. rRNA d. all of the above
12. If 20% of the bases within a DNA molecule are thymine, what is the percentage of Guanine in the same molecule?
 a. 30% b. 20% c. 50% d. 40%
13. More primers are used in lagging strand synthesis than in leading strand synthesis.
 a. True b. False
14. Which of the following is the name of the three-base sequence in the mRNA that binds to a tRNA molecule?
 a. P- site b. Triple codon c. Triple anticodon d. E- site
15. Ribosomes are composed of
 a. rRNA & DNA b. rRNA & tRNA
 c. rRNA & carbohydrate d. rRNA & protein
16. Which of the following techniques is used for detection of gene of interest:
 a. Southern Blot b. Northern Blot c. Western Blot d. PCR
17. During denaturation of DNA, which of the following happens?
 a. Hydrogen bonds between complementary bases break.
 b. Phosphodiester bonds break within the sugar-phosphate backbone.
 c. Glycosidic bonds within the sugar-phosphate backbone break.
 d. Phosphodiester bonds between complementary bases break.

----- "بقية الأسئلة في الصفحة القادمة" -----

18. The protein complex responsible for removing intron-encoded RNA sequences from primary transcripts in eukaryotes is called
 - a. Spliceosome
 - b. SS binding protein
 - c. Abortive initiation
 - d. Replisome
19. Which of the following statements about base pairing in DNA is INCORRECT?
 - a. Cytosine binds with guanine in double hydrogen bond.
 - b. Cytosine binds with thymine in triple hydrogen bond.
 - c. Thymine binds with adenine in double hydrogen bond.
 - d. Adenine binds with guanine in triple hydrogen bond.
20. carries an amino acid to the ribosome.
 - a. tRNA
 - b. mRNA
 - c. DNA
 - d. rRNA
21. What is the sequence of complementary mRNA, If a DNA template contains the sequence 5'-ATTCCGGATCGA-3'?
 - a. 5'-TAAGGCCTAGCT-3'
 - b. 5'-UAAGGCCCUAGCU-3'
 - c. 3'-TAAGGCCTAGCT-5'
 - d. 5'-AUUCCGGAUCGA-3'

Best wishes



Fungi (261B)	Final exam (Jan 2024)	Time: 2 hours
Botany students (2 nd level)	Degree: 50	

Question 1: Select the correct term for each statement

(20 degree, one for each)

Thallospores – Synnemata – Homothallic – Perithecium -Interbiotic –
Secondary mycelium – Aplanospores - Cleistothecium - Sporodochia -
Pseudoparenchyma – Pseudoplasmodium - Intracellular - Heterotrophes -
Obligate saprobes - Mycorrhizae - Planogametic copulation - Thallophyta-
Crptogamae – Pleomorphic –Tertiary mycelium.

1	Mycelia of some higher fungi becomes organized into loosely or compactly woven tissues.	
2	Fungi that enters in partnership or share benefit with plant roots.	
3	Fungi are reproducing by spores not by flowers.	
4	Fungi do not possess roots, stems or leaves.	
5	The fungal reproductive cycle that involves asexual and sexual phases.	
6	They lack chlorophyll and unable to manufacture their own food from inorganic material.	
7	They are mainly live on dead organic matter and are incapable of infecting of living organisms.	
8	Spores are produced by transformation of pre-	

	existing cells of the thallus.	
9	Mycelia that penetrates into the host cells.	
10	Large, erect reproductive structure borne by some fungi bearing compact conidiophores, which fuse together to form a strand resembling a stalk.	
11	Aggregation of uninucleate naked cells in Myxomycota.	
12	Flask-shaped ascocarp with clavate asci arranged on the walls.	
13	Acervulus-like body, in which the compact mass of conidiophores develop on a cushion-like mass of hyphae.	
14	Fusion of two naked, free gametes, one or both of which may be motile.	
15	If a single mycelium is capable of reproducing sexually.	
16	Mycelia that characterized by binucleate mycelia and the Clamp connections.	
17	Fungal thallus that attached to many hosts through the rhizomycelium.	
18	Completely enclosed ascocarp with globose or ovoid, scattered asci.	
19	Asexual non-motile sporangiospores.	
20	Mycelia that characterized by characterized by diplophase hyphae and forms basidiocarp	

Question 2: Mark true or false in front of each sentence of the following (20 degree, one for each)		T	F
21	In contrast to the vegetative mycelium, the spore is characterized by slow metabolism.		
22	In yeast budding the cells arranged in basipetal succession.		
23	Each germ tube elongates to form long, fine, branched filaments called mycelium.		
24	Fungal cell wall consists of cellulose only.		
25	Thallospores are produced by transformation of pre-existing cells of the thallus.		
26	Chlamydo spores are exogenous non-motile spores borne externally on special structure called the conidiophore.		
27	Pycnidia are globose or flask-shaped structure with a narrow ostiole.		
28	At the end of karyogamy dikaryon cells were formed.		
29	When the two fusing gametes are of the same shape and size, their fusion called anisogamy.		
30	Basidiospores produced endogynous in basidia.		
31	Classification proposed by Gwynne and Barners 1937 involved that Myxomycetes are not fungi.		
32	Hawker (1966) divide all fungi into lower fungi and higher fungi according to the hyphal septation.		

33	<i>Allomyces</i> causes hyperplasia and hypertrophy in potato.		
34	<i>Neocallimastigomycetes</i> characterized by zoospores with multiflagellates.		
35	Gemmae of <i>Achlya</i> are irregulars in shapes.		
36	In <i>Thraustotheca</i> the discharge of zoospores occurs by the disintegration of zoosporangial wall.		
37	Pycnidium, acervulus, sporodochium, and synnemata are sexual ascocarps.		
38	<i>Sphacelotheca sorghi</i> is the causal agent of sorghum smut.		
39	<i>Urocystis tritici</i> characterized by spores in groups.		
40	<i>Puccinia graminis</i> formed five types of spores during their life cycle.		

Question 3: Choose the correct answer and shadow it in the answer sheet
(10 degrees, one for each)

- 41) Fungi are characterized by presence of
(a) lomasomes (b) endoplasmic reticulum (c) a & b
- 42) *Ustilago maydis* caused black smut of
(a) wheat (b) corn (c) onion
- 43) Class includes fungi with naked ascocarp like yeasts.
(a) Hemiascomycetes (b) Plectomycetes (c) Pyrenomycetes
- 44) Mycotoxin of used in induction of child birth
(a) *Aspergillus* (b) *Penicillium* (c) *Claviceps*

- 45) All species are endoparasitoids, mainly on insects and other arthropods
(a) *Cordyceps* (b) *Agaricus* (c) *Claviceps*
-
- 46) The basidium gives yield of basidiospores since the nuclear content of the hypha-forming basidium goes to basidiospores.
(a) two (b) one (c) several
-
- 47) In club root diseases the occurs in the plant root hairs
(a) Primary phase (b) Secondary phase (c) a and b
-
- 48) *Puccinia graminis* f. sp. *secalis* caused rust disease on
(a) oat (b) barley (c) wheat
-
- 49) *Puccinia graminis* f. sp. *avenae* caused rust disease on
(a) oat (b) barley (c) wheat
-
- 50) When the oldest cell set at the base and the youngest at the tip of chain it calledsuccession.
(a) Acropital (b) Lateral (c) Basipital
-

With my best wishes

A. Prof. Ghada Abd-Elmonsef Mahmoud



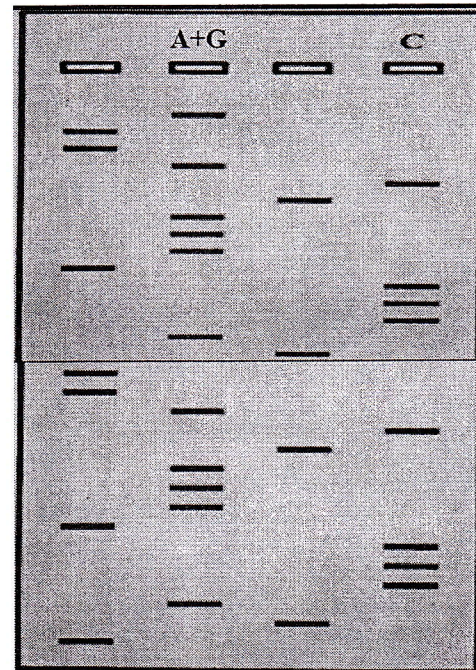
Molecular Biology (212B)	Final exam (17 th Jan 2024)	Time: 2 hours
Microbiology & Botany students		2 nd level

Answer the following questions (50 Marks)

I. Write on each of the following:

(10 Marks)

1. Read the following gel electrophoresis shown in the left, write the sequence of DNA and give the method of sequence analysis.
2. Strategies for DNA replication termination.
3. Processing of primary mRNA.
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II. Compare between 10 only of the following:

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6. Function of helicase & gyrase
7. Gene in Eukaryotes and Prokaryotes
8. Sense & Antisense strands
9. Z-DNA & B-DNA
10. Ribosome in Eukaryotes and Prokaryotes
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(10 Marks)

1. Mastermix
2. Telomerase
3. Bacterial transformation
4. Gene cloning
5. Okazaki fragment
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(10 marks)

1. Reverse transcriptase
2. Sigma factor protein
3. Dideoxynucleotide
4. Gel electrophoresis
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6. Helicase
7. Primer
8. Restriction enzyme
9. Topoisomerase
10. SSBP
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(10 Marks)

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----- "بقية الأسئلة في الصفحة القادمة" -----

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b. 5'-UAAGGCCUAGCU-3'
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Best wishes

**Faculty of Science
Botany & Microbiology
Department**



كلية العلوم
قسم النبات والميكروبيولوجي

كلية العلوم
جامعة اسبوط



المادة: نبات إقتصادي 211 ن
الزمن: ساعتان
الدرجات: 50 درجة

إختبار الترم الأول 2023- 2024
المستوي الثاني
تاريخ الإختبار: الأربعاء 3 / 1 / 2024

السؤال الأول: أجب علي الأسئلة الآتية (20 درجة)

1- ماهي خطوات إنتاج الكحول؟ مع ذكر النواتج الثانوية لصناعة الكحول؟

This image shows a full page of white paper with horizontal dotted lines, typical of primary school writing paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

2- كيف يتم إنتاج خميرة الخباز؟

[illegible]

3- تكلم عن أنواع المنتجات الميكروبية؟ 3 فقط

4- تكلم عن السريبتول مع الإشارة للبيئة المستخدمة في الإنتاج وكيفية الحصول على بادئ جيد؟

[illegible]

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

9- طريقة إعداد الشاي؟

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

10- طريقة صناعة الورق؟

[illegible]

السؤال الثاني: اختر الاجابة الصحيحة مما يأتي

(30 درجة)

- 1- صناعة الكحول الإيثيلي تعتبر من الصناعات الهامة التي تعتمد على
- (A) بكتريا هوائية (B) بكتريا لا هوائية (C) فطر الخميرة
- 2- يعد المولاس أقوى المصادر لإنتاج الكحول الإيثيلي حيث إنه مصدر اقتصادي يحتوي على نسبة سكر
- (A) 35-25% (B) 55-45% (C) 85-65%
- 3- هو كحول ثلاثي الهيدروكسيل (في الصناعة يحضر من البروبلين أو البروبيين) وأيضاً أثناء عملية تصين الزيوت والدهون في صناعة الصابون.
- (A) البنسلين (B) السوربيتول (C) الجلسترين
- 4- الخل هو حامض خليك مضاف له مواد متنوعة مثل الاسترات والجليسول والزيوت الطيارة المكسبة للطعم (نسبة حامض الخليك في اي منتج لا تقل عن.....).
- (A) 4% (B) 8% (C) 12%
- 5- في الطريقة لإنتاج الخل توضع نشارة خشب بالبراميل لتظل البكتيريا معلقة مما يزيد سطح الأكسدة وهنا ينتج الخل بنسبة 10% بمعدل 15 كيلوجرام في اليوم.
- (A) البطيئة أو الفرنسية (B) السريعة أو الألمانية (C) الدائرية
- 6- في الصناعات الميكروبية، الميكروب هو سلالة منتخبة من الكائن الدقيق المراد استخدامه ولا بد أن يكون قادر علي إنتاج المادة بكمية كبيرة، ذا صفات سريع النمو.
- (A) ثابتة (B) متغيره (C) متعادلة
- 7- في الصناعات الميكروبية نسبة البادئ أو اللقاح من بيئة التخمر المستخدم في الصناعة.....
- (A) 5-1% (B) 10-1% (C) 30-10%
- 8- في..... يوضع الوسط الغذائي في مخمرات كبيرة الحجم وإذا كانت تحت ظروف هوائية يمر الهواء المعقم أسفل المخمر ويوجد مقلب داخلية.
- (A) الطريقة السطحية (B) طريقة الإهتزاز (C) الطريقة العميقة او المغمورة

9- في الطريقة يتم اضافة السوربيتول بنسبة 15-25% ويستغرق التخمير 15-40 ساعة بسبب التهوية الجيدة ويصل ناتج السوربوز الى 90% من السوربيتول المضاف وتستخدم هذه الطريقة حاليا.

(A) السطحية (B) العميقة (C) الدائرية

10- يستخدم حامض في الأغذية، الورنيش، المنسوجات والاغراض الطبية لمعالجة نقص الكالسيوم ولمعالجة الانيميا.

(A) الخليك (B) اللاكتيك (C) اللايسين

11- البكتيريا المنتجة للبيوتانول والايتانول والاسيتون.....

(A) *Clostridium butricum* (B) *Clostridium peotinovarium* (C) *Clostridium acetebutylicum*

12- هو حمض أميني يضاف للتغذية في حالة النباتيين وأيضا للخبز والمواد الغذائية الأخرى.

(A) الخليك (B) اللاكتيك (C) اللايسين

13- عشب معمر في اوربا وشمال افريقيا، المادة الفعالة موجودة في الكورمات وهي من القلوانيات وتستخدم في علاج الروماتيزم.

(A) العرقسوس (B) اللحاح (C) الكينين

14- حامض ينتج على بيئة بها مواد كربوهيدراتية، املاح معدنية، بيوتين (تركيزة اساسي في الإنتاج عادة 2.5 ميكروجرام/لتر بيئة). يضاف للأغذية كمادة مكسبة للطعم والنكهة.

(A) اللاكتيك (B) الجلوتاميك (C) اللايسين

15- يستخدم هذا العقار في اضطرابات القلب وتنظيم ضرباته وتحسين الدورة الدموية ويستخرج من نبات عشبي معمر في جنوب ووسط أوروبا.

(A) الصنوبر (B) البلادونا (C) الديجيتاليس

16- الطريقة هي إحدى طرق تحضير اللقاح الفطري ينمي الفطر على وسط سائل ويحضر على هزاز ثم يجمع الكريات بالترشيح وتستخدم الكرات كلقاح.

(A) السطحية (B) المغمورة (C) الدائرية

17- يستخدم حامض كمادة مكسبة للطعم في الاغذية، في صناعة الحبر والاصباغ ويستخدم فطر *Aspergillus niger* في صناعته.

(A) الستريك (B) اللاكتيك (C) الجلوتاميك

18-.....عشب ينمو في جنوب أوروبا وأسبانيا ويستخدم كمادة مليئة وطاردة للغازات. وهو من العقاقير المستخرجة من الجذور.

(A) العرقسوس (B) اللحاح (C) الكينين

19-.....مادة بيضاء مرة تستخرج من اشجار دائمة الخضرة بأمريكا الجنوبية، المادة الفعالة موجودة في القلف وهي العلاج الوحيد لمرض الملاريا وتستخدم أيضا كمادة مقوية ومطهرة.

(A) العرقسوس (B) الإيفيرين (C) الكينين

20-..... يستخرج من نبات عشبي موطنه وسط وجنوب أوروبا وتستخدم هذه العشبة في ازالة الألم، توقف العرق الزائد والكحة.

(A) الصنوبر (B) البلادونا (C) الديجيتاليس

21-..... هو اللبن النباتي الجاف لثمرة نبات الخشخاش وهو مفيد وضار في نفس الوقت. تحتوي هذه المادة على 25 مادة قلوانية منها المورفين والكودايين ونظرا لتأثيرها المخدر تستخدم في تخفيف الألم ومنوم وباسط للعضلات.

(A) الكوكايين (B) الأفيون (C) الديجيتاليس

22- نبات يزرع خاصة في الجزائر ويستخلص بالتقطير. يستمر النبات في الانتاج لمدة تصل الى 6 سنوات ويمكن إكثاره في المشاتل.

(A) الورد (B) الجارونيا (C) الفنته

23- زيت بذرة..... اهم منتجيه الولايات المتحدة الامريكية - بدنت صناعته 1880 سنويا ينتج 1 مليار رطل سنويا. يصنع منه المارجرين الزيتي وبديلات الدهون ومخلفاته يصنع منها سماد وعلف، وصابون، ومساحيق غسيل، وجلسرين.

(A) الكتان (B) فول الصويا (C) القطن

24-..... شجيرة شائكة تزرع في جنوب فرنسا ومصر والجزائر تستخدم في الدهان ومساحيق التجميل.

(A) الورد (B) الجارونيا (C) الفنته

25- الزيوت تمتص الاكسجين ببطء وبعضها يصلح للأكل والآخر يستخدم في صناعة الصابون والشموع (نباتات المناطق الحارة).

(A) المجففه (B) نصف المجففه (C) غير المجففه

26- زيت بذرة..... يصنع منة المارجرين - يستخدم في صناعة الشموع والصابون ومشمع الارضيات - المبيدات الحشرية - مخلفاتة بها 40-48% بروتين لذلك هي علف مهم للماشية.

(A) الكتان (B) فول الصويا (C) القطن

27- بذرة تحتوي على 35-55% زيت سميك عديم اللون، يستخدم كملين، محركات الطائرات وتغليف المنسوجات. من أكثر الدول المنتجة البرازيل والمكسيك والصين.

(A) الذرة (B) الزيتون (C) الخروع

28- الزيوتتمتص الاكسجين وتجف عند تعرضها للهواء وتعطي طبقة رقيقة مطاطة لذلك تستخدم في صناعة الدهانات (توجد في نباتات المناطق المعتدلة).

(A) المجففة (B) نصف المجففة (C) غير المجففة

29-مادة قلوانيه تستخرج من شجيرات قصيرة في الولايات المتحدة تستخدم لعلاج البرد وازمات الصدر والحمى الربيعية.

(A) اللقاح (B) الإيفدريين (C) الكينين

30- الزيوت تظل سائلة في درجة حرارة الغرفة بعضها يستخدم في الاكل والاخر في صناعة الصابون والتشحيم (نباتات المناطق الحارة).

(A) المجففة (B) نصف المجففة (C) غير المجففة

With my best wishes

Prof. Dr. Hanaa Kamal Galal

Assiut University Faculty of Science Botany & Microbiology Department		جامعة أسيوط - كلية العلوم قسم النبات والميكروبيولوجي
First Term Exam, 2023 - 2024 Plant Morphology and Anatomy (221B) Second level Students, Faculty of science		Exam Date: 14/ 1/ 2024. Time allowed: 2 hours. Total Marks: 50 Marks

Part I: Plant Anatomy (25 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 |
| • Parenchym tissue | • Trichomes | • Palisade tissue | • Ground meristem |

Q.1-B- Draw with labelled diagrams FOUR only of the following:- (4 Marks)

- Pattern of Lignification in protoxylem.
- Any three types of Sclereids.
- Any three types of unspecialized permanent tissue in plant body.
- Two types of resin and oil glands.
- Various vascular bundles characterized stem of Angiosperms.

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

- Vascular tissue of Gymnosperms and Vascular tissue of Angiosperms.
- Fibres and Sclereids.
- Graminae stoma and universal stoma.
- Collateral vascular bundles and Radial bundles.

Q.3 Give reasons for FOUR only of the following: (4 Marks)

- Parenchyma is considered simple and primitive tissue.
- Collenchymas support rapidly growing organs of plant.
- Water conducting elements are hard and strongly lignified.
- Food conducting elements have specialized perforated cross walls and sometimes loss their function.
- 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: (3 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?

Q.6 Classify xylem depending upon the position of protoxylem in vascular bundles? Name, 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 an account of adaptation of structure to function of Vascular tissue system.

Part II: Plant Morphology (25 marks)

Question (1): Answer three only of the following: (13 marks)

- Define seed dormancy, mention its causes and breaking methods.
- How can leaves develop into some unusual types, explain with drawing.
- Some plants develop non-green underground stems, illustrate the different types and mention the purposes of such modification.
- Often a compound leaf is mistaken for a leaves-bearing stem, how do you differentiate?

Question (2): Answer two only of the following: (12 marks)

- Write with drawing what do you know about four only of the following:
Insectivorous plants – storage tap root – weak stems – oxygen essentiality for germination – epigeal germination.
- Buds contribute stem to perform a variety of special functions, explain with drawing.
- Compare between three only of the following:
compound pinnate & compound palmate leaf – leaf venation in monocots & dicots – endospermic & exendospermic seed – monopodial & sympodial branching in stem.

“Good Luck”

Prof. M. A. Elmagdy - *Dr. Amany Elmed*