Mansoura University
Faculty of Science
Botany Department

جامعة المنصورة
كلية العلوم
قسم النبات

Final Examination in Botany
Second Term in Botany May- 2016

Educational Year: First Level **Program (Branch): Biotechnology**
Subject: Bot. (104) **Course(s): Principles of Cytology and Genetics**
Time: 2 hrs **Date: 4/6/ 2016** **Full mark: 60** **Question mark: 15**

Answer the following questions:

Q1: Complete the following sentences using suitable words or phrases: **(15 marks)**

1- The four major classes of cellular macromolecules are……,……,…….and…..
2- Enzymes are unique to Endoplasmic Reticulum, used as marker enzymes such as ……,……and…….
3- …….are membrane bound structure that contains hydrolytic enzymes.
4- ……the site of detection and recognition of signals.
5- The inner membrane of a chloroplast is composed of flatted sacs called……. Collectively these sacs are termed…..
6- Organelles responsible for bioenergetic and metabolism are……..,……..and……..
7- ……cells which have a true membrane bounded nucleus.

Q2: Write on the following: **(15 marks)**

1- Functions of Endoplasmic Reticulum.
2- The fluid mosaic model of plasma membrane.
3- Cis-face and Trans face of Golgi apparatus.

Q.3 A- Give an account on the following:

1- Co- dominance and Incomplete dominance. **(5 marks)**
2- Complementary genes. **(5 marks)**

B- Determine whether the following statements are true or false and correct the false statement if present. **(5 marks)**

1- Recessive lethal genes modify the F2 ratio into 3:0 ( ).
2- Organisms with identical phenotypes will have different genotypes ( ).
3- Yellow mice are never true breeding ( ).
4- Coat colour in rabbits is controlled by multiple alleles ( ).
5- Dominance is the interaction between different alleles of the same gene ( ).

Q.4 Complete the following sentences using suitable words: **(15 marks)**

1- Duplicate Dominant epistasis modifies the Mendelian F2 ratio into……
2- Crossing of F1 individuals with one of the two parents……..
3- Test cross: Cross of an individual of unknown genotype to ……..
4- …….epistasis modifies the Mendelian F2 ratio into 12:3:1.
5- Interaction of genes controlling the same character is called…..
6- Blood groups in human are controlled by…….
7- Phenotypic and genotypic ratio is……..instead of …….in incomplete dominance.
8- F2 ratio is……in inheritance of Comb shape in poultry and there are four types in F2 progeny produced ……..,……,……..,……
9- Pure individuals have…… alleles whereas hybrid individuals have …….alleles.

Examiners: **Prof. Dr.** Magda I. Soliman **Dr.** Rehab M. Rizk

Mansoura University

Faculty of Science

Botany Department

Date: 21/5/2016

Final Exam for the 2nd Semester 2015/ 2016

Subject: Basics of Plant Physiology (B102)

1st level of Biotecnology Program

Time allowed: 2hrs

Full Questions Mark: 60 Marks

Answer the following questions:

***QI.* Multiple choice questions: (Circle all answer apply)** **(15 Marks)**

1-Movement of water between plant cells depends upon .....

a- Suction force b-Osmotic pressure c-Both of them

2- Electric charges on colloid is the charge of.....

a- Dispersal medium b- Dispersal phase c- Both of them

3. A cell is placed in a solution and swells. The solution is:

a. Isoosmotic to the cell
b. Hypoosmotic to the cell
c. Hyperosmotic to the cell
d. Isotonic to the cell
e. Hypertonic to the cell
f. Hypotonic to the cell

4- Colloidal solutions can be classified into.....

a- Lyophobic b-Lyophillic c- Both of them

5- Dialysis is the separation of.....

a- Colloidal from crystalloid b- Colloidal from suspension c- Colloidal from emulsion

6- Cytoplasm of plant cell is a complex.....

a- Colloidal solution b- True solution c- Suspension solution

P. T. O اقلب الصفحة

Q2. Mark true (T) or false (F) for the following statements: **(15 Marks)**

1-Transpiration is the loss of water in form of water vapor. ( )

2- Urease enzyme catalyzes degradation of urea to CO_2 and NH_3 in absence of water. ( )

3- About 10% of water loss as water vapor through stomatal transpiration. ( )

4- Stagnant wind increases the rate of transpiration from leaves. ( )

5- Active absorption of water depends on transpiration. ( )

6- Root pressure theory is the best one for explanation of ascent of sap in tall trees. ( )

7- Enzymes act in small ranges of P^H and temperatures. ( )

Q3. Write an account on: **(15 Marks)**

a- Plasmolysis and de-plasmolysis.

b- Transferases.

c- Permeation of non- electrolytes.

d- Competitive and non-competitive inhibitors.

e- Types of transpiration.

Q4. Explain each of the followings: **(15 Marks)**

a. Mechanism of stomatal movement.

b. Oxido-reductases.

c. Mechanism of passive absorption of water.

Examiners:

Prof. Heshmat S Aldesuquy ***Prof. Samy Abo-Hamed***

Mansoura University
Faculty of Science
Botany Department
El-Mansoura, Egypt

جامعة المنصورة
كلية العلوم
قسم النبات
المنصورة - مصر

Second Semester Examination in Culture Subject
May 2016

Educational Level: First level **Program: Biotechnology and Applications (New and Specific)**

Subject: CS (104) **Course(s): Principles of culture of human rights**

Time: 2 hrs **Date: 28 /5 /2016** **Full mark:** 80

أجب عن الأسئلة الآتية:

السؤال الأول ما هى مواصفات حقوق الانسان طبقا للاعلان العالمى لحقوق الانسان الصادر عن الأمم المتحدة فى ديسمبر ١٩٤٨. (٢٥ درجة)

السؤال الثاني

ما معنى اجراء تعسفى من منظور حقوق الانسان – اشرح كل معنى من معانى اجراء تعسفى. (١٥ درجة)

السؤال الثالث

تكلم بايجاز عن أسس تدريس مبادئ و ثقافة حقوق الانسان موضحا تطور الإطار الخاص بحقوق الإنسان. (١٥ درجة)

السؤال الرابع

"حقوق الانسان: مكفولة دوليا- تتمتع بحماية قانونية – تركز على كرامة الكائن الانسانى – لا يمكن التنازل عنها أو الحرمان منها"
اشرح كل خاصية من هذه الخصائص مع ذكر مثال واحد. (٢٥ درجة)

تمنياتى بالتوفيق

أستاذ المادة

أ.د/ محمد نجيب عبد الغنى حسنين

Mansoura University
Faculty of Science
Chemistry Department
Chemistry 141
Phys. Chem.
(BioTech.Program)

First Year Students.
Second Term (14/5/2016)
Time Allowed: 2 hrs
Full Mark: [60]

Final Exam

Answer the following questions: *(Each question = 15 marks)*

1- State and explain: i) Universal gas constant (R)

ii) Graham's law

A mixture of 16 grams of oxygen (O_2) and 16 grams of helium (He) has a total pressure of 0.9 atm. What is the partial pressure of both gases? (O = 16, He = 4)

2- Discuss the following:

i) Reversible and irreversible reactions ii) Apply Le-Chatelier's principle on the following reaction: $A + 2B \leftrightarrow AB_2$, ΔH = -ve value

What are the values of K_p and K_c for the reaction: $H_2O_{(l)} \leftrightarrow H_2O_{(g)}$ **given that vapor pressure of H_2O = 0.9 atm**

3- i) Write on: Law of mass action

ii) Define the following: pH, Solubility product, Active masses, Solution

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4- a) Write a scientific expression for:

i) A property of the solution which depends on the amount of solute and not on its nature

ii) The vapor pressure of any component in the solution is proportional to its mole fraction

b) Deviation of real solutions from ideal ones. Explain?

With Best Wishes

Prof.Dr. A. S. Fouda

Mansoura University
Faculty of Science
Botany Department

جامعة المنصورة
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Final Examination in Botany
Second Term - June 2016

Educational Year: First Level **Program (Branch): Biotechnology**
Subject :Bot (105) **Course(s): Plant Ecology & Taxonomy**
Time: 2 hrs **Date: 31 / 5 /2016** **Full mark: 60** **Question mark: 15**

Answer the following questions:

Q.1 **A- Mark the following sentences by true (√) or false (X)** **(5 marks)**

1- Obligatory halophytes are requiring salinity throughout their life.
2- In hydrosere succession, phytoplankton stage leads directly to reed swamp stage.
3- Drought escaping plants are short lived plants called ephemerals.
4- Xerophytes are growing in saline habitats while halophytes are growing in dry habitats.
5- Secondary succession starts on the extreme bare areas.

B- Complete the following sentences: **(5 marks)**

1- In evolution of vegetation, the first stage is called ..... while, the final stage is called ..... .
2- Xeric habitats may be physically or ..... dry.
3- Floating hydrophytes may be ..... or ..... .

C- Give an account on xerosere succession (with help of diagram).**(5 marks)**

Q.2

Write on each of the following:

A- Chemical process in soil development. **(7.5 marks)**
B- Transported soil parent materials. **(7.5 marks)**

Q.3 **A- Define and draw the following taxonomic terms:**

Corymb – Contorted aestivation – Tetradynamous stamens – Follicle – Samara.

B- Compare between the flower structure of:

i- Families: Gramineae and Cyperaceae.
ii- Subfamilies: Caesalpinoideae and Papilionoideae. Drawing is essential.

Q.4 **A- With clear labeled floral diagram describe** the flower of *Ipomoea* (Family: Convolvulaceae).

B- Draw only: Types of racemose inforescences with sessile flowers.

C- Discuss briefly the different forms of Androecium.

Best Wishes and Good Luck

Examiners: **Prof. Dr. Ibrahim A. Mashaly - Prof. Dr. Mohamed E. Abu-Zeiada**

Mansoura University Faculty of Science Zoology Department	

Final Examination, Second Semester, May, 2016.

Education Year: First
Time: 2 Hours
Date: 17 \ 5 \ 2016
Total mark: 60

Program: Biotechnology
Subject: Zoology
Courses: Biological Diversity Code: Z101

Answer the following questions

Question No. 1: Choose the correct answer: (25 Marks, each with 1 mark)

1. **Aristotle Classify animals according to:**
   A) Their way of living & habitat. B) Their body parts & type of food.
   C) Presence or absence of blood D- All of them E) None of them.
2. **He established the Binomial nomenclature:**
   A) Carl Linnaeus. B) MFA. C) Aristotle D) John Ray
3. **Asexual reproduction in Protozoa occurred by**
   A) Binary fission B) Budding. C) Conjugation. D) (A & B)
4. **The fresh water free-living Protozoa have a …… which regulates the osmotic pressure.**
   A) Food vacuole B) Contractile Vacuole C) Reservoir D) Nucleus
5. ***Amoeba proteus* lives in**
   A) Small intestine of Man. B) Large Intestine of Man.
   C) Blood D) Freshwater (ponds, lakes, slow streams)
6. **How many contractile vacuoles present in Amoeba proteus?**
   A) One B) Two C) Three D) NON
7. **It is a multiplication of *Amoeba proteus* without encystment during unfavorable conditions. Spores are formed internally.**
   A) Sporulation B) Binary fission C) Multiple fission D) Conjugation
8. ***Entamoeba coli* lives in**
   A) Small intestine of Man B) Large intestine of Man
   C) Blood D) Free-living in fresh water
9. **The infective stage of *Entamoeba histolytica* parasite is the**
   A) Cyst with 2 nuclei B) Cyst with 4 nuclei C) Trophozoite D) Cyst with 8 nuclei

10. ***Euglena*** **uses Saprophytic or saprozoic nutrition in**

A) The absence of sunlight B) Presence of sunlight

C) Presence of water D) Absence of water.

11. ***Euglena*** **shows some characters of plants such as**

A) Chloroplasts B) Pellicle C) Myonemes D) Binary fission

12. **The intermediate host of** ***Plasmodium*** **is**

A) Female Anopheles B) Tse tse fly C) Man D) Male Anopheles

13. ***Plasmodium*** **is an important protozoan parasite of man causing**

A) Malaria B) Sleeping sickness C) Dysentery D) Liver disease

14. ***Paramecium*** **moves by**

A) Cilia B) Flagella C) Pseudopodia D) Sliding movement

15. **The result of the conjugation process in** ***Paramecium*** **is the formation of**

A) 2 Paramecia B) 4 Paramecia C) 8 Paramecia D) 3 Paramecia

16. **Classification of Protests Phyla was done according to:**

A) Morphology B) Nutrition C) Locomotion D) Reproduction

17. **Spicules in Class Calcarea are made up of .....**

A) Calcium carbonate B) Silica C) Spongin fibers

18. **..... type of sponges is the simplest type.**

A) Asconoid B) Syconoid C) Leuconoid

19. **Asexual reproduction of sponges is through.**

A) Budding B) Conjugation C) Syngamy

20. **Locomotory structure in Mollusca is represented by**

A) Muscular foot B) Cilia C) Flagella D) Appendages

21. **Visceral hump in Mollusca is covered by a thin, fleshy fold called**

A) Mantle. B) Shell C) Foot D) Plate

22. ***Fasciola gigantica*** **is .....**

A) Endoparasite B) Ectoparasite C) free - living

23. ***Taenia*** **lives in .....**

A) Large intestine B) Small intestine C) Blood D) fresh water

24. **Locomotory organs in Arthropoda represented by segmentally arranged .....**

A) Cilia B) tentacles C) Muscular foot D) Appendages

25. ***Entamoeba histolytica*** **moves by pseudopodia and the number of them is:**

A) One pseudopodium B) Two Pseudopodia

C) Three Pseudopodia D) Many pseudopodia

Question No. 2

Mark (√) or (X) for the following statements: (10 Marks, each with 0.5 mark)

1) *Plasmodium* has two asexual cycles in the human body.
2) Protozoa are unicellular eukaryotic animals.
3) Encystment in Protozoa occurs under favorable conditions.
4) The infective stage of *Entamoeba coli* is the trophozoite.
5) The macronucleus in *Paramecium* has a major role in conjugation process.
6) The infective stage of *Plasmodium* is called merozoite.
7) The food vacuole in protozoan animals secretes the digestive enzymes.
8) The fever in *Plasmodium* infection is a result of complete cycle in RBCs.
9) Cnidaria are diploblastic animals.
10) Digestion in Cnidaria is both intracellular and extracellular.
11) One class of Cnidaria, the Hydrozoa consists of only polypoid forms.
12) In Platyhelminthes, the body cavity is absent.
13) *Fasciola gigantica* is a parasitic worm.
14) *Taenia* is hermaphrodite parasite.
15) Annelida has a closed circulatory system.
16) Digestive system in Annelida is complete.
17) Respiratory organs in Diplopoda are lungs
18) Protozoa are subdivided based upon their means of locomotion.
19) Memebers of Phylum Porifera are mostly terrestrial.
20) Porifera are primitive unicellular animals.

Question No. 3

Complete the Following sentences with the suitable words: (15 Marks, each 1 Mark)

1- The fast movement in Euglena is by .....
2- The result of binary fission in Paramecium is the formation of ..... individuals.
3- Cnidaria have hollow structures called tentacles used for ..... and .....
4- For locomotion, the Hydra utilizes three different methods, ..., ..., and.....
5- The habitat Fasciola gigantica are the ..... and the .....
6- Excurrent pores in Porifera are called .....

7- Spicules of Class Demospongia are made up of ……

8- The flagellated cells or collar cells in Porifera are called ……

9- There are three types of sponges; ……., ……. and ……

Question Number 4

Give reasons for the following: **(10 Marks)**

1- Male *Anopheles* can't transmit *Plasmodium* because? (1 Mark)

2- Why *Euglena* is considered as an animal? (2 Marks)

3- Female *Anopheles* pours saliva when biting Man? (2 Marks)

4- Individuals who don't eat pork can still get the chance to be infected with *Taenia solium*? (2 Marks)

4- What is the cause of fever in *Plasmodium* infection? (1 Mark)

5- Why Female *Culex* can't transmit *Plasmodium*? (1 Mark)

6- *Planaria* has a unique character? (1 Mark)

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إنتهت الأسئلة (الأسئلة فى 4 صفحات)

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With My Best Wishes

Dr. Mohamed Fathy Abouel-Nour

Mansoura University
BioTech Program

جامعة المنصورة
كلية العلوم
ادارة البرامج النوعية الجديدة

برنامج التكنولوجيا الحيوية وتطبيقاتها

Second Semester May 2016

Educational Year: 1st Year Chemistry.
Course (s): Organic Chemistry.
Date: 24/05/2016.
Course Cod. : Chem. 102

Subject: Biotechnology.
Full Mark: 60
Time: 2 hrs.

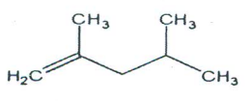
Answer the following questions

1 – Choose the correct answer,

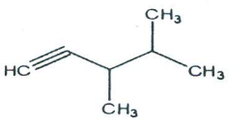
A) $CH_3\text{-}CHO + CH_3\text{-}CO\text{-}CH_3 \xrightarrow{B^-} CH_3\text{-}CH{=}CH\text{-}CO\text{-}CH_3$

1 – Aldol reaction 2 – Cannizaro reaction 3 – Wurtz reaction

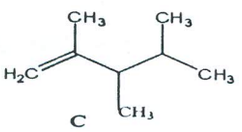
B) 2,4-Dimethyl-pentene



A



B

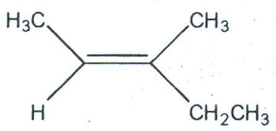


C

C) 4-Methylbutane

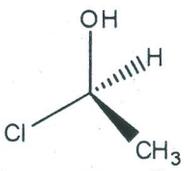
1) Correct 2) Wrong

H)



1 – cis 2 – trans 3 – Z 4 – E

K) What is the isomerism of the following



1 – Optical 2 – Geometrical

2 – Complete the following equations,

1- $CH_3\text{-}CH{=}CH_2 + HBr \longrightarrow$

2- $CH_3\text{-}\overset{\overset{O}{\|}}{C}\text{-}H \xrightarrow[HCl]{Zn/Hg}$

3- $CH_3\text{-}\underset{\underset{Cl}{|}}{CH}\text{-}CH_3 \xrightarrow[aq.]{KOH}$

4- $CH_3\text{-}C{\equiv}CH + H_2O \xrightarrow[HgSO_4]{H_2SO_4}$

5- $CH_3\text{-}CH_2\text{-}\overset{\overset{O}{\|}}{C}\text{-}CH_3 + NH_2\text{-}NH_2 \longrightarrow$

3 – How can you differentiate between primary, secondary and tertiary amines? Write your answer by equations.

4 – Write on the following name reactions,

A – Markonikov's rule B – Wolff-Kishner reduction C – Wurtz reaction

D – Gabriel synthesis E – Cannizaro reaction

Best Wishes from Prof. MM Abou-Elzahab.