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

جامعة المنصورة
كلية العلوم
قسم النبات
المنصورة - مصر

Final Examination in Botany
First Term: Jan. 2013

Educational Year: First Level | **Programs: Biochem., Microbio., Bot./Chem., Zoo./Chem., Geology & Envi. Sci.**

Subject: Bot. (101) | **Course(s): Systematic Botany**

Time: 2 hrs | **Date:29/12/2012** | **Full mark: 60**

Answer the following questions:

Q1. Provide the missing word or words: **(15 marks)**

1- The binomial nomenclature system gives each organism two names including the genus and .....
2- The protein coat enclosing the viral genome is known as .....
3- Viruses that replicates inside bacterial cells are termed as .....
4- Eubacteria belongs to the kingdom .....
5- Bacteria that cannot grow in absence of oxygen are .....
6- Peptidoglycan ,a polymer composed of amino acid and sugars, is an integral component of the cell wall of .....
7- Fungi exist mainly in the form of slender filaments known as .....
8- ..... is a distinctive component of fungal cell wall.
9- Basidium carries 4 haploid basidiospores while ascus encloses .....
10- *Spirogyra* reproduces sexually by .....
11- In algal haploid life cycle all life forms are haploid except .....
12- The female (♀) sex organ of *Funaria* is known as .....
13- In the fern life cycle, the dominant generation is the .....
14- Plants producing naked seeds are taxonomically known as .....
15- In higher plants, the complete flower has sepals, petals, stamens and .....

Q2. Choose the most correct answer: **(15 marks)**

1- Eukaryotic, multicellular,and autotrophic organisms are grouped in the kingdom:
a- Monera b- Protista
c- Plantae d- Fungi

2- In animal viruses, the outer envelope is composed of:
a- capsomeres b- glycoproteins
c- peptidoglycans d- chitin

3- Under unfavorable growth conditions, bacteria reproduce by:
a- endospores b- exospores
c- binary fission d- conidia

4- *Spirulina* is a:
a- prokaryotic heterotrophe b- eukaryotic heterotrophe
c- prokaryotic parasite d- prokaryotic autotrophe

5- In some fungi, the dikaryon cell contains:
a- two diploid nuclei b- two haploid nuclei
c- one haploid & one diploid nucleus d- two haploid conidia

6- The yeast fungi reproduce asexually by:
a- cell fossion only b- zoospores
c- budding only d- a + c

7- *Fucus* is a:
a- multicellular chlorophyte b- multicellular rhodophyte
c- multicellular phaeophyte d- colonial phaeophyte

P.T.O

8- Sexual reproduction of some algae takes place through fusion of two dissimilar gametes, a process which is known as:

a- anisogamy
b- isogamy
c- oogamy
d- conjugation

9- All the following plants are tracheophytes except:

a- *Adiantum*
b- *Pinus*
c- *Cycas*
d- *Riccia*

10- Douple fertilizations occur in:

a- Bryophyta
b- Angiospermae
c- Ptredophyta
d- Chlorophyta

Q3. Answer the following questions: **(20 marks)**

1- With the help of labeled diagram, discus briefly the life cycle of *Rhizopus*.

2- Mention only **one** potential function of: bacterial capsule, akinete, heterocysts, thylakoid, zygospore, antheridium, and anthers.

3- Compare between:

a. Psychrophylls and Mesophylls
b. Conjugation and Oogamy
c. Virus and Viroids

Q4. Answer the following questions: **(10 marks)**

1- Using labeled diagram only, differentiate between monotrichous, lophotrichous, amphitrichous, and peritrichous bacteria.

2- Mention only **two** distinctive diagnostic characters of the followings:

a. Zygomycota.
b. Chlorophyta.
c. Ptredophyta.
d. Gymnospermae.
e. Protista.

*****************With Best Wishes for All of You*****************

Examiners:

Prof. Dr. Abdeldayem Sherief **Dr. Ahmed Abdelgawad**

المستوى الاول - فيزياء حرارة وخواص مادة ف ١٠١

Mansoura University Faculty of Science Physics Department	بسم الله الرحمن الرحيم Final Exam in Physics (Jan. –2012) المستوى الاول (١٠١)	Time Allowed : 2 hours Subject : PHYSICS (Heat and properties of Matter)

Answer the following questions

1-a) Define the following [5]

1- Thermal conduction 2-Coefficient of volume expansion.

3- Wien's displacement law 4-The black body and the black body radiator.

b- If 20 gm of ice at -5°C is dropped into a 50 g aluminum calorimeter cup containing 80 g of water at 70 °C. Find the final temperature after the system reaches thermal equilibrium . Specific heat of (water 1 cal\g, ice 0.5 cal\g and aluminum 0.2 cal\ g) and the latent heat of melting is 80 cal\ g. [10]

2) Answer (a, b) or (b,c)

a- Discuss the temperature distribution along a uniform perfectly lagged bar and show that the temperature decreases with increasing the distance X from the hotter face of the bar. [10]

b- A glass squar window of length 1,5 m and thickness 0.5 cm, if the temperature difference between its faces 30 °C , how much heat flow through the window in one minute.(K_{glass}= 0.8 watt\ m°k). [5]

c- A small blackened solid copper of radius 2 cm is placed in an evacuated enclosure whose wall are kept at 100°C . at what rate must energy be supplied to the sphere to keep its temperature constant at 127 °C. (Stefen constant =5.67x 10^{-8} W \ m^2k^4) . [10]

3-a) when a sphere of radius r moves through a fluid with velocity V, the viscous force given by $F = k\,\xi^a\,V^b\,r^c$ where ξ coefficient of viscosity of the fluid. Use the dimension analysis to obtain a, b and c. [7.5]

b)- A solid brass of dimension 5 cm , 4,cm and 6 cm is initially at pressure 1x10^5 N \ m^2 if the pressure becomes 1,5 X10^6 N \$m^2$. find 1- stress 2- strain 3- change in volume. (Bulk modulus 1.4 X10^{11} N \$m^2$. [7.5]

4-a) A pipe has a radius of 8 cm at a point (a) where the pressure 1.2X10^5 Pa and 5 cm at point (b) that is 3 m higher than point (a) . When oil of density 700kg \ m^3 flows in this pipe at a rate of 0.04 m^3 \ sec Find the pressure at a point (b). [8]

b) The position of a particle moving along x –axis is given by $x = 50\cos(10t + 0.4)$ cm [7]

1- Find : Amplitude, periodic time and frequency 2- Determine : position , velocity and acceleration at any time and the phase of motion at 1.5 sec.

Best wishes

المستوى الأول - كيمياء حيوية - ١١١ جبر وهندسة

الفرقة : المستوى الأول المادة : جبر وهندسة كود المادة : (ر111)	كلية العلوم – قسم الرياضيات	دور: يناير 2013 الزمن : ساعتان التاريخ : 2013/1/15

برامج: كيمياء حيويه- ميكروبيولوجى- كيمياء – حيوان و كيمياء- كيمياء ونبات - جيوفيزياء- جيولوجيا- علوم بيئه

أجب عن الأسئلة الآتية: الدرجة الكلية : 80

السؤال الأول:

أ – حلل الكسر $\frac{5x^3+12}{x(x^2-1)}$ إلى كسوره الجزيئية. (10 درجات)

ب – باستخدام مبدأ الاستنتاج الرياضي اثبت أن:

$$\frac{1}{1\times4}+\frac{1}{4\times7}+\cdots+\frac{1}{(3n-2)(3n+1)}=\frac{n}{3n+1}$$ (10 درجات)

السؤال الثاني:

أ – حدد نوع القطع الذي تمثله المعادلة $y^2-2y+3x+7=0$ ثم أوجد احداثيات كل من الرأس والبؤرة ومعادلتي الدليل والمحور وطول الوتر البؤري العمودي مع الرسم. (10 درجات)

ب – اوجد المقياس والسعة للعدد المركب $z=\frac{1+7i}{(2-i)^2}$ ثم اوجد قيمة z^4 . (10 درجات)

السؤال الثالث:

أ – اكتب معادلة القطع الناقص $x^2+4y^2-8y-4x-92=0$ في الصورة القياسية موضحا جميع المعلومات الخاصة به مع الرسم . (10 درجات)

ب – باستخدام طريقة كرامر اوجد حل المعادلات الآتية:

$$x+2y+3z=6,\quad x+3y+5z=9,\quad x+5y+12z=18.$$ (10 درجات)

السؤال الرابع :

أ- اوجد معادلة المستقيم الذي يمر بنقطة تقاطع المستقيمين $2x+3y+5=0$, $x+y+2=0$ وعمودي على المستقيم $x-2y+1=0$. (10 درجات)

ب – أوجد الجذور التكعيبيه للعدد المركب $z=1-\sqrt{3}i$. (10 درجات)

مع أطيب التمنيات بالتوفيق اسرة التدريس

المستوى الأول - التغذية ٢٠١٣

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

جامعة المنصورة
كلية العلوم
قسم علم الحيوان
المنصورة - مصر

First Semester, Jan. 2013

Educational year: First Level | **Program: Biochemistry**
Time: 2hr | **Subject: Nutrition**
Date: 12/1/2013 | **Course : Z 125**
Full Mark: 60

Q1- Choose the correct answer of the following: (15 marks)

1- Essential nutrients ----------

a- are made by the body. b- generally must be supplied by food.

c- include alcohol. d- are enzymes.

2- The riboflavin coenzyme is ----------

a- NADP. b- NAD. c- TPP. d- $FADH_2$.

3- A slice of bread with 1 gram of fat, 10 grams of carbohydrate, and 2 grams of protein contains ----------

a- 42 kcal. b- 57 kcal. c- 82 kcal. d- 102 kcal.

4- All B vitamins function as ----------

a-coenzymes. b- electrolytes. c- intrinsic factors d- sources of energy.

5- In which form are most dietary lipids found?

a- steroids b- phospholipids c-triglycerides d- monoglycerides

6- Which vitamin is fat-soluble and has carotene as its precursor?

a- vitamin A b- vitamin B6 c- vitamin D d- vitamin C

7- The main active form of vitamin D in the body is----------

a- $1,25(OH)_2$ vitamin D. b- calcitonin.

c- prohormone vitamin D. d- hydroxyapatite.

8- The chief function of carbohydrates we eat is to ----------

a- maintain body fat. b- provide energy.

c- provide essential amino acids. d- transport vitamin A.

9- Which of the following is not associated with antioxidant systems?

a- thiamin b- vitamin C c- vitamin E d- Selenium

10- ---------- is a polyunsaturated fatty acid.

a- palmitic acid b- palmitoleic acid c- linoleic acid d- oleic acid

11- Vitamin K is needed in the body for ----------

a- enzyme action. b- blood clotting.

c- energy production d- carbohydrate metabolism

12- Iodide deficiency results in ----------

a- anemia. b- scurvy. c- osteomalacia. d- goiter.

13- Calcium is used in the body for ----------

a- enzyme regulation in cells. b- blood coagulation.

c- excitability of nerves and muscles. d- all of the above.

14- Most water is lost daily via----------

a- the skin. b- the lungs. c- urine. d- feces.

15- A food that contains all nine essential amino acids is called a -------

a- incomplete protein b- complete protein

c- intracellular protein d- adequate protein

16- The cation (positive ion) found in highest concentration in intracellular fluid (inside the cell) is----------

a- Sodium. b- chloride. c- phosphorus. d- potassium.

Q2- (15 marks)

A- Fill in the blanks: (5 marks)

1- ---(1)------ is saturated fatty acid, while ---(2)------- is an essential amino acid.

2- Two examples of dietary polysaccharides are: ----(3)--- and ----(4)-----

3- Active forms of vitamin A in the body are: -----(5)-----,-----(6)------

4- Physiological significance of lipids are: -------(7) --------, ------(8)-----

and ----(9)-----

5- Two functions of water in the body are: ------(10)----- and ----(11)-----

6- From the symptoms of vitamin C deficiency are: -------(12)--------

and ------(13)---------

7- Micronutrients are ------(14)------ and ------(15)---------

B-Answer the following: (10 marks)

1- using table, compare between water-soluble vitamins and fat-soluble vitamins.

2- What are the functions of vitamin A?

3- Give one example of:

I- Macrominerals II- Phospholipids III- Antioxidants

IV- Simple proteins V- Omega-3 fatty acids VI- Monosaccharides

4- Compare between disaccharides and diglecerides

Q3: (15 marks)

A) Complete the following: (7 marks)

1) The hormones secreted by the intestine are ....., ...and .....

2) Lysozyme secreted by salivary glands function as .....

3) .....is the main absorptive organ, which supplied by many.....

4) Photolytic enzymes as.....and.....secreted by .... and activated by..... hormone.

5) Metabolism is the.....occurring in the.....

....., which include .....and .....

6) Factors affecting the enzyme activity are: ---------- , ---------- , ----------

7) After absorption, the body uses lipids in:

a- ..... b- .....

c- ..... d- .....

B) Write on the following: (8 marks)

1- Hormonal regulation of carbohydrate metabolism
2- Follow-up the protein digestion in the gastrointestinal tract
3- Write on the fate of the NH2 group which results during protein catabolism.
4- Explain Krebs cycle in a diagram

Q4: (15 marks)

A) Choose the correct answer: (5 marks)

1- During digestion, proteins are broken down into molecules of

a- glucose b- fatty acids c- amino acids d nucleic acid

2- Bile is produced in the ----------

a- liver b- small intestine c- pancreas d- stomach

3- All of the following are substances found in pancreatic juice EXCEPT:

a- pepsin b- trypsin c- amylase d- lipase

4- Salivary amylase secreted into the oral cavity starts the digestion of

a- proteins b- starch c- lipids d- amino acids

5- The conversion of one molecule of glucose to two molecules of pyruvate results in net formation of

a- 2 molecules of ATP b- 6 molecules of ATP
c- 3 molecules of ATP d- 38 molecules of ATP

B) Identify FIVE only of the following: (10 marks)

i- Glycogenesis ii- Beta oxidation iii- Gluconeogenesis
iv- Transamination v- Hyperglycaemia vi- Serous cells

Dr. El-sayed M. El-Habiby Dr. Hanaa Serag