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

المستوى الأول - فيزياء حرارة وخواص المادة ف ١٠١

Mansoura University Faculty of Science Physics Department	بسم الله الرحمن الرحيم Final Exam in Physics (Jan. –2012) المستوى الاول (١٠١)	Time Allowed :3 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 [7.5]

$F = k\,\xi^a\,V^b\,r^c$ where ξ coefficient of viscosity of the fluid. Use the dimension analysis to obtain a, b and c.

b)- A solid brass of dimension 5 cm , 4,cm and 6 cm is initially at pressure 1x10^5 N \ m^2 [7.5]

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.

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 [8]

Find the pressure at a point (b).

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 - مجموعة السولوس - جبر وهندسة ر 111

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