جامعة المنصورة كلية العلوم - قسم الرياضيات المادة: رياضيات أساسية تفاضل وتكامل (ر112)		امتحان دور مايو2009م الفرقة الأولي – المستوي الأول: برامج* الزمن: ساعتان - التاريخ:2009/5/27 الدرجة الكلية: 80 درجة

*برامج: كيمياء –وكيمياء ونبات – ميكروبيولوجي – كيمياء حيوي – جيوفيزياء – جيولوجيا – كيمياء وحيوان – علوم البيئة

أجب عن الأسئلة الآتية

السؤال الأول: (20 درجة – 5 درجات لكل جزء)

(أ) أوجد مجال تعريف ومدي الدالة $f(x)=\sqrt{4-x^2}$

(ب) أوجد معكوس الدالة $f(x)=\dfrac{3}{2x-5}$

(ج) أوجد النهاية $\lim\limits_{x\to 1}\left[\dfrac{2}{1-x^2}-\dfrac{1}{1-x}\right]$

(د) أوجد النهاية $\lim\limits_{x\to 0}\dfrac{3^x-1}{x}$

السؤال الثاني: (20 درجة)

(أ) أوجد $\dfrac{dy}{dx}$, إذا كانت $y=\dfrac{(1+x)^5\sqrt{x^3+2}}{(x-1)^3(x^2+1)}$ [6]

(ب) أوجد قيمة الثابت A , بحيث تكون الدالة $f(x)=\begin{cases}\dfrac{x^2-4}{x-2} & x\neq 2\\ A & x=2\end{cases}$, متصلة عند $x=2$ [6]

(ج) أوجد معادلتي المماس والعمودي للمنحني $y=f(x)=\sqrt{2x+1}$, عند النقطة $(4,3)$. [8]

السؤال الثالث: (20 درجة- 5 درجات لكل جزء):

أوجد المشتقة الأولي $\dfrac{dy}{dx}$ لكل من الدوال الآتية:

(أ) $y=\operatorname{sech}\left(\cos^{-1}2x\right)$

(ب) $\cos(xy)=y^2+x$

(ج) $y=2\ln(\cot t),\ x=\tan t+t^3$

(د) $y=x^{\sec x}$

السؤال الرابع: (20 درجة- 5 درجات لكل جزء):

احسب التكاملات الآتية:

(أ) $\int_1^2\dfrac{x^3-3x^2+1}{\sqrt{x}}dx$

(ب) $\int\dfrac{\sqrt{9-x^2}}{x^2}dx$

(ج) $\int xe^{5x}dx$

(د) $\int\dfrac{2x-8}{x^2-3x}dx$

مع أطيب أمنيات أسرة التدريس بالتوفيق

Mansoura University
Faculty of Science
Physics Department

جامعة المنصورة
كلية العلوم
قسم الفيزياء

Second Term Examination June2009

Academic Level: First Level
Time: 2 Hours
Subject: Electricity & Magnetism &Optics
Full Mark: 60 Marks

Program: Geo&Chem Zool&,Bio Chem,Bot,Enviro,Chem
Date: 6 June. 09
Courses: Physics 102

Answer the Following Questions

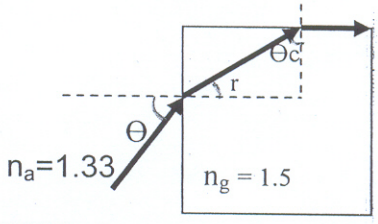
[1] a- Define the following terms: i - Refractive index , ii - Dispersive power, iii - wave front, iv - vergence , v - numerical aperture of optical fibers. **[5] Mark**

b- Through the electro static course, you obtained the electric field at a point located at a distance r from a positive point charge (Q) by different ways .Explain three methods of them in detail. **[10] Mark**

[2] a- Lens aberration is a problem facing the use of lenses. Explain how it occurs and the way to correct it. **[5] Mark**

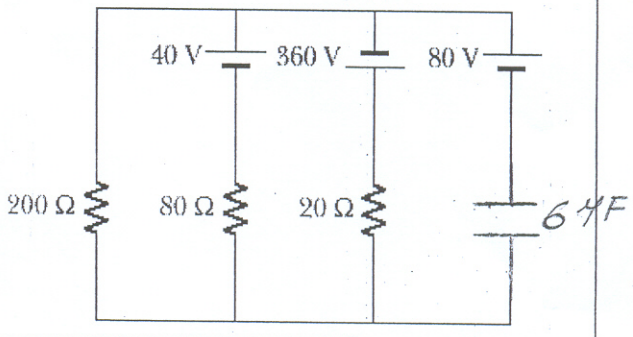
b- Explain how Pulfrich Refractometer can be used to measure the refractive indices of solids and liquids. **[5] Mark**

c- For the configuration and the data shown in the figure , use Snell's law of refraction to find the incidence angle Θ . **[5] Mark**



[3] a- Calculate the net torque τ on an electric dipole placed in a uniform electric field E ,where the dipole moment makes an angle Θ with the field. **[5] Mark**

b- In the circuit shown, determine the current in each resistor, after a long time of operation, and the energy stored in the capacitor. **[10] Mark**



[4] a- Define the following terms: i - Coulombs force, ii - Electric field, iii - Electric potential and electric potential energy difference, iv -Equipotential surface, v - Electric flux ,vi - Dielectric constant **[7] Mark**

b- An insulating sphere of radius ***a*** has a uniform charge density ρ and a total positive charge Q .Calculate the electric field at a point outside the sphere ($r \geq a$) , and at a point inside the sphere ($r < a$) . Comment on your answer **[8] Mark**

Examiners: 1- Prof. Dr. Fikry Reicha 2- Prof Dr. Maher Eltonsy
3- Dr. Mohamed Mansour 4-. Dr.Mohamed Kabeel 5-Dr. Hesham Gomaa
6- Dr Abd-Elkareem Abu Elwafa 7- Dr. Nabil Kinawy

علوم البيئه

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

جامعة المنصورة
كلية العلوم
قسم النبات
المنصورة - مصر

Final Examination in Botany
May 2009

Educational Year: First level **Program (Branch): Biology (Microbiology – Environmental sciences- chemistry/ Botany – Chemistry/Zoology)**

Subject: B (102) **Course(s): Fundamentals of Plant Physiology**

Time: 2 hrs **Date: 8/6/2009** **Full mark: 60** **Question mark: 15**

Answer the following questions

Q1: Account of each of the following:
- a- Two only of the colloidal properties. (5)
- b- Plant cell as an osmotic system. (5)
- c- Conversion of one mole of glucose into two moles of pyruvic acid. (5)

Q2: Compare between:
- A- Oxidases and dehydrogenases. (5)
- B- Permeability for electrolytes and non-electrolytes. (5)
- C- Competitive and non-competitive inhibitors of enzymes. (5)

Q3: Define each of the following terms: (15)
- a- Guttation. (3)
- b- Imbibition. (3)
- c- Ion antagonism. (3)
- d- Root pressure. (3)
- e- Terminal oxidation. (3)

Q4: Explain in details each of the following : (15)
- a- Mechanism of opening and closing of stomata. (5)
- b- General steps of CO_2 fixation in photosynthesis. (5)
- c- Mention **FIVE** factors affecting enzymes action. (5)

Examiners: Prof. Mohammed Abbas, Prof. Hamed Elshora, Prof. Afaf Gaber, Prof. Samya Haroun

Mansoura University
Faculty of Science
Zoology Department

First year- Biology
Subject: Taxonomy
Date: 30 May 2009
Time Allowed: 2hr
Total mark: 60 degree

Answer All the questions with labelled diagram

Question One: (15 degree)

Write about the general characters of phylum nematode, and describe the life cycle of two examples of this phylum.

Question Two: (15 degree)

Write briefly on General characters, classification and economic importance of annelida, arthropoda, mollusca and echinodermata.

Question Three: (15 degree)

Write short notes on three only of the following:

A- General characters of protozoa.

B- Nutrition and locomotion of *Euglena viridis*.

C- Nutrition and reproduction in sponges.

D- Reproduction and life cycle of *Entamoeba histolytica*.

Question Four: Answer three only of the following: (15 degree)

A- With labeled diagrams only illustrate the following: Metacercaria of *Fasciola* – Sea anemone- Cercaria of *Schistosoma*- Egg of *Ascaris*- Hexacanth of *Taenia* and isolated polyp of *Alcyonium*.

B- How can you diagnose the infections of *Fasciola*, *Schistosoma*, *Taenia*, *Ascaris* and *Ancylostoma*.

C- Compare between the medusa of *Obelia* and that of *Aurelia*.

D- Give an account on life cycle of *Fasciola* or *Taenia* or *Schistosoma*.

With best wishes of success,

Dr. Sayed A. El-Tantawy **Dr. Mohamed F. Abdelal** **Dr. Sherif Ramadan**