Kafrelsheikh University
Faculty of Science
Level: 1st Year Chemistry
Subject: Microbiology

Date: 26/5/2016
Time allowed: 2 hrs.
final examination

Examiners': Dr. Mohamed Diab

Dr. Baher Elnogoumy

Second Part "Microbiology"

Answer the following questions:

Question 1. Give the scientific definition for the following: (9 marks)

Translocation - Chemotrophs - Psychrophiles - Lateral conjugation - Pilus - Prions.

Question 2. Write with drawing short notes on the following: (26 marks)

- Standard bacterial growth curve.
- Asexual reproduction of Diatoms.
- How viruses are classified based on shape?
- Functions of bacterial cytoplasmic membrane.
- Explain the process of surface sterilization.
- Environmental and economic roles of fungi in ecosystems.
- In a table: compare between prokaryotic and eukaryotic microorganisms.

With the best wishes

Dr. Baher A. El-Nogoumy

Kafrelsheikh University
Faculty of Science
Level : 1st year Chemistry
Subject : Physiology & Microbiology
Examinars : Dr. M. Dyab Dr.Baher Ngomy

Date : june 2016
Time allowed : 2 H
Full Mark : 70 marks
Final Examination

الأسئلة فى صفحتين

- 1 -

A – Physiology : (35 marks)

1- Choose the correct answer : **(10 Marks)**

انقل الجدول التالى فى كراسة الإجابة وأكتب فيه رقم الإجابة الصحيحة فقط

1	2	3	4	5

1 – A solution with particle diameter less than 0.001 micron and stable is :
a – suspention b – colloidal solution c – true solution

2 – The resistance of a liquid to flow called :
a – permeability b – viscosity c – osmosis

3 – The tendency of a substance to attract particles of another substance On its surface called :
a – absorption b – diffusion c – adsorption

4 – The movement of water through semipermeable membrane between two different concentrated solutions called :
a – plasmolysis b – osmosis c – viscosity

5 – If a plant cell placed into hypertonic solution it will :
a – turgid b – plasmolysed c – not changed

2 – Discuss the following : **(10 Marks)**

a - Define permeability and classify membranes according to permeability .

b – Tyndall effect .

3 - Write On : **(15 marks)**

a –Types of solutions.

b - Basis of diffusion .

c – Forces affecting osmosis of the plant cell .

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Kafrelsheikh University Faculty of Science Mathematics Department Final Exam of second Term 2015 - 2016	Abstract Algebra M105	Level : 1st year Mathematics Date : 26\5\2016 Time Allowed : 2H Total Marks :100 (70 Written, 10 Oral,20 Exercises) Exam in one Page

Answer the following questions

Question1

(21 Marks)

a) Write the true table of the following statement (show its kind)

$$((p \rightarrow \neg q) \wedge \neg r) \leftrightarrow (\neg p \vee (r \wedge p))$$

b) Prove that $\neg(p \vee q) \equiv (\neg p \wedge \neg q))$

c) Prove that $\overline{(A \cap B)} = \overline{A} \cup \overline{B}$

Question2

(24 Marks)

a) Define the following (Write all relations, which are used or given an example)

Equal sets - Equivalent relation - Bijective function – The group – The ring

b) If $A = \{1,2,3,4\}$

Write the following relations

$i)$ $R_1 = \{(x,y) : x \geq x - y\}$, $ii)$ $R_2 = \{(x,y) : x + 2y \text{ is divisible by } 5\}$

And find the following

1) Which the above relations are called equivalent relation? Why?
2) The inverse relations and the equivalent classes (if possible) ?
3) $R_1 \circ R_2^{-1}$

c) Prove that the unite element and inverse element in binary operation unique?

Question3

(25 Marks)

a) If $f : X \rightarrow Y$, $X = \Re - \{\frac{1}{3}\}$, $Y = \Re - \{1\}$

And defined the function as $f(x) = \frac{3x-2}{3x-1}$,Show whether f(x) is bijective function or not?

b) If Z the integer numbers and the following relation can be written as:

$$R = \{(x,y) : {}^{x-y}/_{4}, \quad x, y \in Z\}$$

Is R equivalent relation? find the equivalent classes?

c) Study the following Algebraic system : $< Z_6, \oplus, \otimes >$

With Best Wishes Dr.\ Amin Elfeky

Kafr El-Sheikh University
Faculty of Science
Chemistry Department
Level one, Second term

Date: 26 / 5 / 2016
Time of exam: 2 hour
Score: 70
Organic Chemistry

Answer The Following Questions

I: Explain by Equations the mechanism of preparation of the following compounds: (16 degrees)

(a) Toluene

(b) n - Butane

(c) Ethyl acetate

(d) Propanone

II: Write short notes on each of the following : (16 degrees)

(a) Pyrolysis of alkanes

(b) Geometrical Isomerism

(c) Chlorination of Acetic acid

(d) Aldol condensation

III: Draw the structures of the following compounds: (8 degrees)

(a) 3,3 – Diethyl – 5 – isopropyl – 4 – methyloctane

(b) 3,5 – Dimethylcyclohexene

(c) Acetophenone

(d) 2 – Propenoic acid

IV: (a) Determine the molecular formula of compound that has a molar mass of 78 and an emperical fomula of CH ? (4 degrees)

(b) Write the chain isomers of n - Heptane (C_7H_{16}) ? (6 degrees)

V: Choose the correct answer: (20 degrees)

Addition of HBr To Propene gives

(a) 2 – Bromopropane

(b) 1 – Bromopropane

(c) 3 – Bromopropene

Chlorination of Methane gives

(a) Methyl Alcohol

(b) Formaldehyde

(c) Chloromethane

Hydrogenation of Ethylene gives

(a) Ethyl Alcohol

(b) Acetaldehyde

(c) Ethane

Boiling of n – propyl bromide with ethanolic KOH gives

(a) Propane

(b) Propene

(c) Propanol

Reaction of Ethanol with I_2 in basic medium gives

(a) Iodoethane

(b) Iodoform

(c) Ethane

Reaction of 2 – Butene with Ozone and (water - Zinc) gives

(a) Acetaldehyde

(b) Formaldehyde

(c) Acetic acid

Catalytic hydration of Propyne gives

(a) Propanal

(b) Propanone

(c) Propene

Polymerization of Acetylene gives

(a) Hexyne

(b) Cyclohexane

(c) Benzene

Reaction of Formaldehyde with NaOH gives

(a) Formic acid

(b) Methyl alcohol

(c) Mixture of Formic acid and Methanol

Hydrolysis of Acetonitrile in acid medium gives

(a) Acetone

(b) Acetic acid

(c) Acetaldehyde

GOOD LUCK

Prof. Dr. Adel Attia

المستوى الأول الفترة المسائية الإثنين ٢٠١٦/٥/٣٠

Kafrelsheikh University
Faculty of Science
Physics Department
First level (جميع الشعب)
Second Term 2015/2016

Time: 2h
Subject: كهربية ومغناطيسية و ضوء
Date: 03/06/2015
Exam in one pages

Answer the following questions

السؤال الأول

(a) Prove that the electric field at point "O" due to electric dipole "p" can be expressed by the relation $E(r) = \frac{P}{2\pi\varepsilon r^3}$

Where r is the distance between "O" and the dipole center?

(b)Two negatively charged particles are fixed in place on an x axis. The charges are $q_1=1.6\times10^{-19}$ C and $q_2= 3.2\times10^{-19}$ C, and the particles separation is r=0.5cm. What is the magnitude and direction of Coulomb force F_{21}? ($\varepsilon_0=8.85\times10^{-12}$ $C^2/N.m^2$)

السؤال الثاني

(a) If an electric dipole is located in an electric field *E* as shown in Fig.1: Find three mistakes in Fig.1; and then draw Fig. 1 after correcting these mistakes.

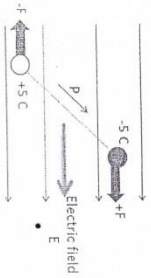

Fig.1

(b) In Young's double-slit interference experiment, prove that the path length difference between two waves emit from the two slits depends on the distance between these two slits.

السؤال الثالث

(a) Prove that *"although the speed and wavelength of light in medium are different from what they are in vacum, the frequency of the light in the medium is the same as it is in vacum"*.

(b) Define the following:
Huygens' principle- Lorenz force

السؤال الرابع

(a) Calculate the magnetic field strength *B* which may appears due to three static charges $q_1=-1.6\times10^{-19}$ C, $q_2=-3.2\times10^{-19}$ C and $q_3=+1.6\times10^{-19}$ C ?

(b) Figure 2 shows spherical shell with uniform charge Q= -16e and radius R=10cm. A particle with charge q=+5e is at the center. What is the electric field at point p1 and p2?.

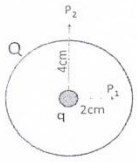

Fig.2

المستوى الأول — الفترة المسائية — الحل (١٦/٦/٢٠١٦)

جامعة كفر الشيخ -كلية العلوم قسم الرياضيات الفرقة الاولي : نبات و حيوان رمز المقرر: MATH 210 الدرجه : ٧٠ درجه		الاختبار النهائي الفصل الدراسي الثاني ٢٠١٥ -٢٠١٦م المادة : هندسه و تكامل التاريخ: الخميس ١٦ / ٦ / ٢٠١٦ م الزمن : ١-٣

Solve the following questions:

Question (1) (18 Marks)

a- Find the area A of the region between the graph of $y = \sin x$ and the $x-$axis from $x = 0$ to $x = \pi$.

b- Find the center and the radius of the circle $2x^2 + 2y^2 - 8x + 4y - 8 = 0$.

c- Evaluate $\int_2^{10} \frac{3}{\sqrt{5x-1}} \, dx$

Question (2) (18 Marks)

a- Find the vertex , the focus and the equation of the directrix of the parabola $5y^2 = 16x$.

b-Evaluate $\int x \sec^2 x \, dx$

c- Simplify the equation $y^2 - 6y + 5 = 4x$ by translation the axes to remove the first degree y and the constant term.

Question (3) (17 Marks)

a-Evaluate $\int_0^{\frac{\pi}{2}} \tan \frac{x}{2} dx$

b-Find the rectangular coordinates of $r^2 \cos 2\theta = 2a$ and the polar coordinates of $x^2 + y^2 = 4x$.

Question (4) (17 Marks)

a-Find the equation of the tangent and the normal lines to the circle $x^2 + y^2 - 8x + 10y - 15 = 0$ at the point $(4, -11)$.

b-Evaluate $\int \sin^5 x \, dx$

End Questions

Best regards

Prof. Dr. Ahmed EL-Maghrabi

Kafer El-Sheikh University
Faculty of Science
Mathematics Department

Second Semester 2015-2016
First level (Physics) & (Mathematics) + Geo
Integration and Geometry

Time : 2 hour

Answer the following questions:

[1] Find : (i) $\int \frac{4x-1}{x^2+x-2}\,dx$

(ii) $\int \frac{dx}{x^2+6x+25}$

(iii) $\int \sin^4 x \cos^5 x\, dx$

[2] **(i)** Find $\int e^x \sin x\, dx$, $\int e^x \cos x\, dx$.

(ii) Obtain $\int \frac{\sqrt{x-3}}{x-2}\, dx$

[3] **(i)** Find $\int \sqrt{a^2-x^2}\, dx$

(ii) Find $\int_{-\pi/4}^{\pi/4} \cos^3 \phi\, d\phi$

(iii) Find the length of the tangent from the point $P_1(x_1, y_1)$ to the Circle $(x-\alpha)^2 + (y-\beta)^2 = r^2$

[4] **(i)** Find the coordinates of the vertex, the focus, the length of the latus rectum and equations of the directrix and axis of the parabola

$$x^2 - 8x + 2y + 7 = 0$$

(ii) Determine the equation of the curve

$$5x^2 + 2xy + 5y^2 = 2$$

when the axes have been rotated 45°.

Kafrelsheikh University
Faculty of science
Mathematics Department

Date: 16 - 6 - 2016
Full Mark (70)
Subject: Analytic geometry & Integration

Time allowed: 2h
First Level "Chemistry"

Answer the following questions:

(1)(a) Find the point to which the origin must be translated in order that the following equation shall have no first degree terms

$$2x^2+4y^2+12x+8y+4=0$$

(b) Find the equation of the system of lines which passes through the intersection of the pair of lines $x-7y+3=0$ and $4x+2y-5=0$, and find the member of the family which has the slope 3.

(c) Transform the equation of the circle $x^2+y^2+4x-6y-3=0$ to the standard form then finds its center and radius.

(d) Find the vertex, focus, directrix, axis, and latus rectum for the equation of the parabola $y^2-4y+6x-8=0$.

(e) Find the center, foci, directrices, axes, and latus rectum of the following ellipse $x^2+4y^2-6x-24y+41=0$.

(f) Find the equation of the parabola given that the vertex is (4, 3) and the directrix is the line x=6.

(2)(a) Determine each of the following integrals:

(i) $\int \frac{x}{1+3x^2}\,dx$ **(ii)** $\int 3\sec^2 3x\tan 3x\,dx$ **(iii)** $\int \sin^2 x\cos^3 x\,dx$

(iv) $\int \frac{2x+1}{\sqrt{9-x^2}}\,dx$ **(v)** $\int \frac{x+8}{(x+3)(x+4)}\,dx$ **(vi)** $\int x\ln x\,dx$

(vii) $\int \frac{x^2}{x^2+4}\,dx$

(b) Determine the area between the curve $y=x^3-2x^2-8x$ and the x-axis.

Best Wishes, M.M.Khalifa

المستوى الأول الفترة المسائية الخميس ٢٠١٦/٦/٢

جامعة كفر الشيخ
كلية العلوم
قسم النبات
المادة: اخلاقيات البحث العلمي
الممتحن: د/ عواطف سعد

المستوى: الأول
الشعبة: نبات
الدرجات: 70
الفصل الدراسي الثاني 2016/2015

اجب عن الاسئلة الاتية

السؤال الاول

1- اكمل الاجزاء الناقصة فى الاتى

i. ..... يقصد بها الابتعاد عن التعصب والتزمت والتمسك بالرأي والذاتية.
ii. تصنف البحوث في معظم مجالات العلم حوث إلى بحوث ..... و ..... ، حيث يقصد بالاولى انها تلك ..... اما الثانية فهى تلك التى تهتم بدراسة .....
iii. ومن القضايا ذات العلاقة بأخلاقيات البحث ، التواصل مع إدارة المؤسسة التي طبق فيها البحث ، ومع كل ما تقدم يوجد اتجاه ضعيف إن لم يكن سلبيًا قد يكون مرده إلى عدة عوامل أهمها: 1) ..... و 2) ..... و 3) .....
iv. المنهج ..... ، ومؤداه تفتيت الكل إلى أجزاء، وتقويم الأجزاء لاختيار فرضيات معينة والوصول إلى نتائج جديدة ، اما المنهج ..... فمؤداه استخدام أسس وقوانين المنطق وإثبات نتيجة ما.
v. في توصية اليونسكو الصادرة في 1974 باجراءات مؤدية إلى نجاح المتشغلين بالبحث العلمي مؤكداً أنه ينبغي للدول الأعضاء عندما تقوم بمهمة أصحاب العمل الذين يستخدمون باحثين علميين: 1) ..... ، 2) ..... و 3) .....
vi. قبل القرن العشرين ، تادرا ما اجرى الباحثون تجارب طبية على البشر تعهدا بقسم ..... الذى ينص على عدم ايذاء الانسان بل تكريمه.

2- فرق بين كل اثنين مما يأتى

a. حق الطبع و الملكية الفكرية
b. أنشطة البحوث الرئيسية وأنشطة التطوير والبحوث التطبيقية في العالم وفي وطننا العربي.

السؤال الثانى:

A- وتتعدد مصادر الأخطاء في الخطوات المختلفة للبحث و تتراكم الأخطاء من مصادرها المختلفة ومنها أخطاء تعزى إلى الباحث . اشرح ذلك؟
B- ناقش مفهوم البحث المؤسسي بين العلوم الطبيعية والعلوم الإنسانية ، وهل يتناقض البحث الفردي مع البحث المؤسسي وما معايير البحث المؤسسي ودور فرق البحث وخصائص البحث المؤسسي وأهدافه؟
C- ناقش خمس من ركائز مدونة نومبرج 1949 و التى تنظم عملية التجريب على البشر.

مع اطيب التمنيات

جامعة كفر الشيخ
كلية العلوم
قسم الكيمياء

الفرقة الأولى : - برنامج الكيمياء
المادة :- أخلاقيات بحث علمى
كود المقرر : - ث ٢١٠
الزمن :- ساعتان

السؤال الأول : – تكلم بشكل موجز عن كلا ممايأتى :-

(أ) تكلم عن القيم والإعتبارات الأخلاقية الواجب توافرها فى شخصية الباحث أو جامع المعلومات؟ (٢٠ درجة)

(ب) تكلم عن الصفات والخصائص الإجتماعية الواجب توافرها فى الباحث أو جامع المعلومات. (٢٠ درجة)

السؤال الثانى: – تكلم عن كلا ممايأتى :-

(أ) الضوابط الأخلاقية فى البحث العلمى. (١٥ درجة)

(ب) حقوق الإنسان الذى يجرى علية أو معه البحث والتى لابد من عدم إنتهاكها. (١٥ درجة)

(ج) أهم المصاعب التى قد تواجه الباحث والتى ربما يؤدى عدم التغلب عليها إلى عدم الحصول على النتيجة التى يستهدفها الباحث؟ (١٥ درجة)

(د) الأخطاء المحتملة فى خطوات البحث التى تعزى إلى الباحث والتى قد تتراكم وتلحق أضرارا كبيرة بنتائج البحوث. (١٥ درجة)

مع خالص تمنياتى بالتوفيق والنجاح

أ.د./ أشرف الشهاوى
قسم الكيمياء – كلية العلوم – جامعة كفر الشيخ

Kafrelsheikh University
Faculty of Science
Subject: Scientific Research Ethics
Second Term 2015/2016
Grade: 1st level – Mathematics, Physics, Zoology, and Geology

Date: June 2nd, 2016
Time allowed: 2 hrs
Full mark: 100
Exam in ONE page
كود المقرر: (ث 210)

أجب عن الأسئلة الآتية:

1) عزيزى الطالب، هناك واجبات ومسئوليات أخلاقية ينبغي عليك الإلتزام بها وتحملها طوال فترة دراستك بالجامعة، أذكر: ---------- (10 درجات)
   a) خمسة من المسئوليات الأخلاقية الواجب إتباعها أثناء الدراسة
   b) خمسة من المسئوليات الأخلاقية الواجب إتباعها أثناء الإمتحانات
2) ماهى أنواع البحوث... من وجهة نظر أخلاقيات البحث العلمى؟---------- (10 درجات)
3) أكتب عن خمسة من الصفات التى تتوقع أن يتحلى بها الأستاذ الجامعى---------- (10 درجات)
4) من الضرورى بمكانوضعميثاق / لائحةلاخلاقياتالبحثالعلمي. تكلم عن أهم الإقتراحات التى يجب أنتؤخذبعينالاعتبارعندإعداد هذاالميثاق---------- (10 درجات)
5) عرف ما المقصود بالمصطلحات الآتية:---------- (10 درجات)
   a) إختلاق البيانات Fabrication
   b) السطو الأكاديمى Plagiarism
   c) التسجيل الرقمي (Digital Recording)
   d) سرية المعلومات(Anonymity)
   e) الإنسحاب (Withdrawal)
6) ماهى الموافقة المستنيرة ؟ أذكر خمسة من العوامل الضرورية لتحقيق الموافقة المستنيرة ----(10 درجات)
7) أكتب فى الأماكن الخالية أجزاء البحث التى تجيب على الأسئلة الآتية:---------- (10 درجات)
   a) What is the problem? .....
   b) How did I solve the problem? .....
   c) What did I find out? .....
   d) What does it mean? .....
   e) Whose work did I refer to? .....
8) أذكر فقط:---------- (30 درجة)
   a) شرطين من شروط العنوان الجيد للبحث
   b) ثلاثة ممن يجب عليك شكره عند إتمام البحث
   c) خمسة من خصائص وعناصر ملخص البحث الجيد
   d) خمسة من أعضاء لجان مراجعة أخلاقيات البحث العلمى
   e) خمسة من إجراءات السلامةالعامة للعمل مع المواد الكيميائية الخطرة
   f) خمسة من الخطوط العريضة للأمان الحيوى الواجب إتخاذها فىالمعامل البيولوجية
   g) خمسة من المهارات العامة التى يجب أن يكتسبها الباحث لإجراءبحثه بكفاءة وفاعلية

End of Questions *Good Luck* *Prof. Alaa Salem*

المستوى الأول الفترة المسائية الخميس ٢٣/٦/٢٠١٦

Faculty of Science
Chemistry Department
First level

Time: 2h
Subject: Physical Chemistry (70 Marks)
Date: 23/6/2016

Name: **Department:**

Part 1: ***Answer the following and comment your answer in few lines (each is 2 marks)***

1. Hydrogen gas burns in oxygen gas to form water describes..... property?
a) physical b) chemical c) magnetic d) none of these

2. Density of a gas is directly proportional to
a) pressure b) molar mass c) temperature d) rate of diffusion

3. At STP, 1 mole of any gas takes up .....of volume
a) 22.4 L b) 20.8 L c) 25.0 L d) 30 L

4. Gases have a ..... shape and a .....volume.
a) fixed, fixed b) fixed, flexible c) flexible, flexible d) flexible, fixed e) none of these

5. Which of the following characteristics does *not* describe an Ideal Gas?
a) Contains tiny, discrete particles that have mass but virtually no volume
b) Only attractive forces exist between the particles
c) When the particles collide, energy is conserved
d) No energy is lost when a particle collides with the container
e) None of the above

6. Consider a solution which is 0.10 M in CH_3COOH and 0.20 M in $NaCH_3COO$. Which of the following statements is true?
(a) If a small amount of NaOH is added, the pH decreases very slightly.
(b) If NaOH is added, the OH^- ions react with the CH_3COO^- ions.
(c) If a small amount of HCl is added, the pH decreases very slightly.
(d) If HCl is added, the H^+ ions react with CH_3COOH ions.

15. Which statement is false?

(a) The density of a gas is constant as long as its temperature remains constant.
(b) Gases can be expanded without limit.
(c) Gases diffuse into each other and mix immediately when put into the same container.
(d) The molecular weight of a gaseous compound is a non-variable quantity.

16. Which of the following gases effuses at the highest rate?

a) N_2 b) O_2 c) F_2 d) Ne e) CO

17. The conversion of a gas into a solid is called .....

(a) solidification (b) sublimation (c) deposition (d) ionization e) boiling

18. According to the Lewis theory, a base _____ .

a) is a proton acceptor.
c) is a proton donor.
c) makes available a share in a pair of electrons.
d) produces OH^- ions in aqueous solution.
e) accepts a share in a pair of electrons.

19. Which of the following statements is false?

(a) The properties of $N_2(g)$ will deviate more from ideality at -100°C than at 100°C.
(b) Van der Waal's equation corrects for the non-ideality of real gases.
(c) Molecules of $CH_4(g)$ at high pressures and low temperatures have no attractive forces between each other.
(d) Molecules of an ideal gas are assumed to have no significant volume.
(e) Real gases do not always obey the ideal gas laws.

20. Three 1.0 liter flasks are filled with H_2, O_2 and Ne, respectively, at STP. Which of the following statements is true?

(a) Each flask has the same number of gas molecules.
(b) The velocity of the gas molecules is the same in each flask.
(c) There are twice as many O_2 and H_2 molecules as Ne atoms.
(d) The density of each gas is the same. (e) None of these

المستوى الأول الفترة المسائية الإثنين ٢٠١٦/١٦/١٣

جامعة كفر الشيخ

كلية العلوم **المادة/** حقوق الإنسان

المستوى الأول **تاريخ الامتحان** ٢٠١٦/٧/١٢

أجب عن سؤالين فقط مما يلي:

السؤال الأول: أكتب في حرية العقيدة وممارسة الشعائر الدينية.

السؤال الثاني: أكتب في خصائص الحق المالي للمؤلف.

السؤال الثالث: أكتب في شروط استحقاق الأرملة للمعاش.

السؤال الرابع: أكتب في حق الإنسان في الزواج وتكوين أسرة.

مع أطيب التمنيات بالتوفيق

المستوى الأول الفترة المسائية الإثنين ٢٠/٦/٢٠١٠

Kafrelsheikh University *Faculty of Science* *Chemistry Department*		*Organic Chemistry (1)* *First Level* *2 hours – 70 mark*

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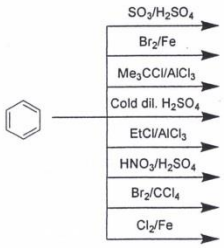
1. Write the products for the following reactions **(20 marks)**



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2. Starting with: **(40 marks)**

a. Ethylene, write equations to illustrate how the compounds below might be synthesized.

1. Polyethylene.
2. Cyclohexene.

b. 3-Methy-1-butene, write equations to illustrate how the compounds below might be synthesized.

1. 2-Chloro-2-methylbutane.
2. 1,2-Dibromo-3-methylbutane.

c. Benzene, write equations to illustrate how the compounds below might be synthesized.

1. 2,4,6-Trinitrotoluene.
2. Anthracene.

d. Naphthalene, write equations to illustrate how the compounds below might be synthesized.

1. 1-Nitronaphthalene.
2. 2-Naphthalene sulphonic acid.

---

6. Write a short communication about the following (explain by examples): **(10 marks)**

1. Types of hybridization.
2. Acidity of acetylene.

Good luck,,,,,,,,, Ahmed I. Khodair

ر الشيخ	امتحان مستوى اول	اليوم والتاريخ : الاثنين 2016/6/20
ـة العلوم	برنامج الرياضيات	الزمن : ساعتان
قسم الفيزياء	أسم المقرر : موجات واهتزازات	الدرجة الكلية : 70 درجة
	كود المقرر: ف 109	عدد الأوراق : ورقه واحده

أسم الطالب: ..... الرقم الأكاديمى: .....

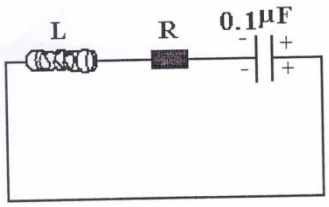
أجب عن الأسئلة الأتية:

س 1 (20درجة) عرف الحركة التوافقية البسيطة ومثل السرعة والعجلة لها بيانيا- اثبت ان سرعة تناقص الطاقة لحركة مضمحلة يساوى الشغل المبذول ضد قوى مقاومة الوسط خلال وحدة الزمن.

س 2 (20درجه) اثبت محافظه الطاقة للحركات الاهتزازيه المثالية – ثم بين محافظة الطاقة لدائرة مهتزة مثالية على مدى دور كامل للحركه.

س 3 (20درجة) استنتج المعادله التفاضليه لدائرة مهتزه مضمحلة بالنسبة للجهد على المكثف للدائرة.

س 4 (10درجة) فى الدائرة التاليه اذا كان $T'=62.5\mu S$ وبعد خمسة ادوار من بدأ الحركة تنخفض سعة الحركة الى النصف عين Q, δ, τ للدائرة.



⊛ تمت الأسئله / مع أطيب التمنيات بالتوفيق والنجاح ⊛

لجنة الممتحنين والمصححين: د محمد عراقى — ا د محسن مسعد

Kafrelsheikh University
Faculty of science
Mathematics Department

Date: 20 - 6 - 2016
Full Mark (70)
Subject: Introduction to Statistics & Probability

Time allowed: 2h
First Level

Answer the following questions:

(1)(a) The following scores represent a nurse's assessment (x) and physicians assessment (y) of the condition of 8 patients at time of admission to a trauma center

x	3	1	4	1	2	2	4	6
y	11	13	5	10	11	9	7	3

(i) Determine the coefficient of correlation and interpret the association between x and y. (ii) Determine the value of y when x = 7.

(b) For any two events A and B show that (i) $P(A \cup B) = P(A) + P(B) - P(A \cap B)$.
(ii) if $B \subseteq A$ **then P(B) ≤ P(A).**

(2)(a) Pollution of the rivers has been a problem for many years. Consider the following events:

A: the river is polluted, B: a sample of water tested detects pollution, C: fishing is permitted.

Assume $P(B) = 0.3,\ P(A|B) = 0.75,\ P(A|\overline{B}) = 0.2,\ P(C|B) = 0.4,\ P(C|\overline{B}) = 0.31$

Find (i) the probability that the river is polluted or a sample of water tested detects pollution or both.
(ii) the probability that fishing is permitted.

(b) State and prove the total probability law.

(3)(a) Let X be a random variable with the probability density function

$$f(x) = \begin{cases} \frac{1}{9}x^2 & 0 < x < 3 \\ 0 & otherwise \end{cases}$$

Find (i) F(X) (ii) P (0 < X < 3), P (X ≥ 4). (iii) E(X)

(b) A random variable X has a mean 8 and a variance 9 use chebyshev inequality to obtain $P(|X - 8| \geq 6)$.

(c) Human heights are one of many biological random variables that can be modeled by the normal distribution. Assume the heights of men have a mean of 69 inches with a standard deviation of 3 inches. What is the probability that a randomly selected man will be
(i) taller than 73 inches. (ii) between 66 inches and 72 inches.

Best Wishes, M.M.Khalifa

المستوى الأول الفترة المسائية الاثنين ٢٠١٦/٦/٦

Kafrelsheikh University
Faculty of Science
Math. Department
First level physics. And Math.

Time: 2h
Subject : Dynamic
Total Marks: 100 (70 Written, 10 Oral, 20 Exercises)
Date : 6/6/2016

اجب عن الاسئلة الاتية :-

س ١ - يتحرك جسيم حركه توافقيه بسيطه وجد ان المسافات المقطوعه اثناء جزء من الحركه في نفس الاتجاه مقاسه من بدء الحركه هي x_1, x_2, x_3 عند نهايته ثلاث ثواني متتاليه اثبت ان زمن الذبذبه الكامله $2\pi / \cos^{-1} \frac{x_1 + x_3}{2x_2}$ (١٥ درجه)

س ٢ - A,B رجلان البعد بينهما نصف كيلومتر حيث A تقع الي الشرق من B فاذا كان A متجه شمالا بسرعه 3k/m وكان الرجل يجري بسرعه 6k/m ليلحق بالاخر اوجد الاتجاه الذي يجري منه B وكذلك الزمن الذي يستغرقه (١٥ درجه)

س ٣ - عين الطاقه المفقوده للحركه لتصادم كرتين ملساوتين صغيرتين تصادم مباشر كرتان ملساوتان كتلته احدهما 10 Ib تتحرك بسرعه 15ft/ s والاخري كتلتها 4Ib وتتحرك بسرعه 2ft/ s في الاتجاه المضاد فاذا كان معامل الارتداد منها هو نصف عين سرعه كل منها بعد التصادم (٢٠ درجه)

س٤ أ- ادرس الحركة الراسية للصاروخ فى مجال الجاذبية

ب- صاروخ كتلته 7m نصفها من الوقود تكفى للاشتعال لمدة دقيقتين . فإذا كانت المادة المشتعلة تنطلق بإنتظام سرعه نسبة 200g رأسيا لاسفل فإذا انطلق الصاروخ بعد اربعين ثانية من اشتعال الوقود . اوجد اقصى سرعه يكتسبها الصاروخ (٢٠ درجه)

المستوى الأول الفرقة المسائية ، المنيا ٢٠١٦/٦/٩م

Kafrelshikh University
Faculty of Science.
Geology Department
Final exam.Of Second term

Subsurface Geology ,
(First Level)
Date: 9/ 6 /2016
Time: 2 Hours. Degree= 70

Answer the following questions

Discuss briefly the following :-

1- The subsurface geology may be defined as the study of geology in three dimensions from the surface into the subsurface, For determining what?

2- Economic aspects is one of the most important aspects (purposes) of subsurface studies.

3- Drilling and Well logging, as a sources of information for subsurface work.

4- Discuss briefly the following logs as one of the main types of drilling:-
   a. Sample logs,
   b - Mud logs,

Best wishes

Kafrelsheikh University
Faculty of Science
Math. Department
First level Phys.
Second Term 2015/2016

Time: 2h
Subject :Differential Equations
Total Marks :(70)

أجب عن الأسئلة الأتية:

Q.1.

Find the solution of the following differential equation

$$\frac{dy}{dx} = \sec(x+y) \qquad (10)$$

Q.2.

Solve $(x^2 + y^2)dx - 2xydy = 0$ (14)

Q.3.

Solve the linear differential equation $x\left(\frac{dy}{dx} + y\right) = 1 - y$ (14)

Q.4.

Solve the Euler differential equation

$$(1+x^2)\frac{d^2y}{dx^2} + (1+x)\frac{dy}{dx} + y = \sin 2(\log(1+x)) \qquad (18)$$

Q.5.

Find the solution of $\frac{d^2y}{dx^2} + y = \sec x$ by method of variation of parameter. (14)

Kafrelsheikh University
Faculty of Science
Zoology Department
First level (Zoology)
Second Term 2015/2016

Time: 2h
Subject: Protozoa & Invertebrates ()
Total Marks: 100 (70 Written, 10 Oral, 20 Practical)
Date:

Choose the right answer or answers

1- which body forms do Cnidarians have? 2 marks

1. Medusa body form, polyp body form
2. Medusa body form, asymmetrical body form
3. Radial, bilateral symmetry
4. Polyp, radial symmetry
5. Radial and bilateral symmetry

2- Flat worms are the first .... 2 marks

1. Animals having legs
2. Animals having eyes
3. Animals having coelom
4. Animals having radial symmetry
5. Animals that can be described as mobile hunters

3- Spicules help the sponge by: 2 marks

1. Helping to identify the type of sponge, gives it form, makes it rigid
2. Helping to identify the collar cells, makes it rigid
3. Makes it rigid

4- First group to have a head/brain? 2 marks

1. Bivalves
2. Flatworms
3. Roundworms
4. Cnidaria

5- What type of body plan to flatworms/roundworms have? 2 marks

1. Asymmetrical
2. Radial
3. Bilateral

6- Cnidarians exchange gas through: 2 marks

1. Diffusion
2. Water vascular system
3. Gills
4. Lungs

7- Overall body structure of both roundworms and flatworms? 2 marks

1. 5-part body plan
2. 4-part body plan
3. Segmented bodies
4. 3 tissue layers

Kafrelsheikh University
Faculty of Science
Geology Department
First level (Geol.+Chem)
Second Term 2015/2016

Time: 2h
Subject: Crystallography and Mineralogy (G103)
Total Marks: 100 (70 Written, 10 Oral, 20 Exercises)
Date: 6/06/2016
Exam in one page

Answer the following questions:

I- Define the following: (20 marks):

a- Polymorphism b- Rhombohedron crystal c- Hardness.

d- mineral's luster e- Bipyramid,

II- Write the name, Miller indices, clinographic and stereographic projections of the tetragonal system forms (Holosymmetrical class)**: (20 marks)**

III-Answer the following sentences True or False. (10 marks)

a. Table salt is not minerals.

b. The isometric system has the lowest degree of symmetry when compared to all the other crystal systems.

c. Cation mean that atom loss electrons

d. Liquids and gases are not minerals.

e) The symmetry of crystal faces with respect to a line, plane and/or point can be used to classify crystals into crystal habits.

IV- Define the endogenetic processes of minerals formation and explain the hydrothermal processes of mineral formation? **(10 marks)**

V- How can you determine specific gravity of mineral by using Heavy liquids? **(10 marks)**

لجنة الممتحنين والمصححين أ.د/ المتولي محمد على لبدة + أ.د./ عزيز محمود أبو شامة+أ. د/ ناهد حسين الشبينـــى

8- What are Flatworms? 2 marks

1. Acoelomates
2. Pseudocoelomate
3. Coelomates

9- What type of body plan to sponges have? 2 marks

1. Asymmetrical
2. Bilateral
3. Radial

10- The digestive system of a Cnidarian is 2 marks

1. 2 way
2. 1 way
3. 3 way
4. Multiway

11- What is a roundworm? 2 marks

1. Acoelomate
2. Pseudocoelomate
3. Coelomate

12- The digestive system of flatworms is 2 marks

1. 2 way
2. 1 way
3. 3 way
4. Multiway

13- Cnidarian brain is 2 marks

1. Similar to the human brain
2. Nerve net (cluster of nerves)
3. Similar to rotifer brain

14- Cnidarians reproduce: 2 marks

1. Sexually and asexually
2. Sexually
3. Asexually

15- How do Sponges reproduce? 2 marks

1. Sexually and asexually
2. Just by budding
3. Just sexually

16- Corals usually live in: 2 marks

1. Muddy freshwater pools
2. Warm shallow seas
3. Dry dusty deserts

17- How does a planarian consume food? 2 marks

1. By filter feeding
2. Diffusion across the cell membrane
3. Capturing with tentacles
4. Siphoning food through a pharynx

18- Where would you find a hydra? 2 marks

1. In water
2. In the digestive tract of other animals
3. In sand or dirt
4. On leaves of trees

19- Digestion occurs in which of the following? 2 marks

1. Flame cells
2. Tentacles
3. Gastrovascular cavity
4. Nephridia

20- Sponges have the following type of symmetry 2 marks

1. polyp
2. asymmetry
3. radial
4. bilateral

21- In sponges, water enters through the ____ and exits through the ___. 2 marks

1. ostia, osculum
2. osculum, ostia
3. choanocytes, osculum
4. amebocytes, ostia

22- Flatworms acquire oxygen by: 2 marks

1. incomplete respiratory system
2. diffusion across their skin
3. gas pockets within their body cavity
4. flatworms do not need oxygen

23- Which of the following is unicellular and heterotrophic? 2 marks

1. ameba

2. paramecium
3. algae
4. both ameba and paramecium

24- Which of the following is a free-living flatworm? 2 marks

1. schistosoma
2. ascarid worm
3. tapeworm
4. planarian

25- Which of the following has a complete digestive tract (mouth to anus)? 2 marks

1. roundworms only
2. flatworms only
3. roundworms and flatworms
4. neither roundworms or flatworms

26- What structure is used by planarians to suck food into the digestive system? 2 marks

1. eyespot
2. nematocyst
3. pharynx
4. flame cells

27- Cnidocytes are found in ..... 2 marks

1. phylum Porifera
2. phylum Coelenterata
3. phylum Nematode
4. phylum Platyhelminthes

28- What are flame cells? 2 marks

1. Respiratory cells
2. Reproductive cells
3. Digestive cells
4. Excretory cells

29- Radial, indeterminate cleavage: 2 marks

1. is observed in a few the most advanced ciliophorans.
2. is believed to be the primitive state in the Metazoa.
3. is not observed in either protostome or deuterostome animals.
4. All of the above.
5. (1) and (2) but not (3).

30- All living Protista possess: 2 marks

1. a membrane-bound nucleus.

الفتره المسائية المستوى الاول الخميس ٢٠١٦/١٥/٢٦

Kafr El-sheikh University | Firstly year student

Faculty of Science | Time allowed (2) hours

Chemistry Department | Final examination June (2016) | Organic Chemistry

Answer the following questions:

Question (1) : Complete the following equation {15 point}

1) $CH_3\text{-}\underset{\underset{OH}{|}}{CH}\text{-}CH_3 \xrightarrow[350C^o]{Cu} (A) \xrightarrow{NH_2OH} (B) \xrightarrow[-H_2O]{Heat} (C)$

2) $CH_3CH2OH \xrightarrow{KMnO_4 \setminus H^+} (A) \xrightarrow{Cl_2 \setminus NaNOH} (B) \xrightarrow{Cl_2 \setminus NaNOH} (C) + HCOONa$

3) $CH_3\text{-}CH_2\text{-}C \equiv C\text{-}CH_3 \xrightarrow{H_2 \setminus Pd} (A) \xrightarrow[peroxide]{HBr} (B) \xrightarrow{H_2O} (C) \xrightarrow{KMnO4 \setminus H^+} (D)$

Question (2) : **Write the reaction equation of the following {15 point}**

1)The reaction of acetone with methyl magnisum bromide .

2) The reaction of 2methyl – 3-butene with ozone .

3)The reaction of acetaldehyde with hydroxyl amine .

Question (3) : Write a short notce about the following & give an example{20 point}

1) Fridel – Craft of benzene

2) Markinokov"s reaction &it"s opposite

3) Aldol condensation

4)Cannizaro reaction

5) Wurtz reaction

Question (4) : **Write the chemical formula of the following {20point}**

1) m- Cresol 2) p –Toluidine 3) Picric acid 4)m – Xylene 5)Reolcinol

6)β - Naphthol 7) 2,5- Dimethyl- 5- ethyl-3- hexanol 8)2-Bromo -1- butanal

9)3,5-Dichloro toluene 10) 2,3 – Dimethyl -2- pentene

Good Luky

2. one or more mitochondria.
3. one or more chloroplasts.
4. All of the above.
5. (1) and (2) but not (3).

31- Sponges: 2 marks

1. do not exhibit true tissues.
2. do not possess a gut.
3. do not possess an endoderm.
4. All of the above.
5. (1) and (2) but not (3).

32- Syconoid sponges differ from asconoid sponges because: 2 marks

1. syconoid choanocytes may pump water in either direction.
2. the pumping of water by syconoid choanocytes is assisted by ciliated ostial (pore) cells.
3. syconoid choanocytes line the entire spongocoel.
4. None of the above.
5. (1) and (2) but not (3).

33- The planula is a larval stage observed in the: 2 marks

1. Cnidaria.
2. Platyhelminthes.
3. Arthropoda.
4. All of the above.
5. (1) and (2) but not (3).

34- What is the name (2-marks each) and the main function (2-marks each) of each of the two kinds of nuclei in the Ciliophora:

a) _____

b) _____

End of Exam

2. one or more mitochondria.
3. one or more chloroplasts.
4. All of the above.
5. (1) and (2) but not (3).

31- Sponges: 2 marks

1. do not exhibit true tissues.
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b) _____

End of Exam