المستوى الثالث - الكيمياء الحيوية
كيمياء حيوية - كيمياء عضوية ٣٤٦
كيمياء نبات
كيمياء بيولوجية

Mansoura University
Faculty of Science
Chemistry Dept.
3rd Year Gen. Chem.

2d Semester 2013
Chem. ~~364~~ 346
Full Mark **[80]**
Time Allowed 2 hr

Final Examination

Answer the Following Questions:

1) Identify the **INCORRECT** statement below [5]

a. The molecules must collide to react.
b. There must be enough energy for the two molecules to react.
c. The pre-exponential factor is a measure of the rate at which collisions occur in the gas.
d. The more complex the reacting molecules, the higher the value of P.
e. The molecules must be orientated with respect to each other correctly.

2) What are the units of k for the rate law: Rate = $k[A][B]^2$? [5]
(a) s^{-1} , (b) s, (c) L mol^{-1} s^{-1} , (d) L^2 mol^{-2} s^{-1} (e) L^2 s^2 mol^{-2} .

3) Sketch a diagram for the consequences of light absorption. [5]

4) Derive a rate constant equation of the second order reaction;
A + B → Products. Assume A and B have equal initial concentrations.
[10]

5) Distinguish between each of the following: [15]
a. Characteristics of fluorescence and phosphorescence.
b. Relation of [B] with time for parallel and consecutive reactions.
c. Intermediate and active complex (transition state).

6) A certain system absorbs 3.0 x 10^{16} photons of light per second. On irradiation for 10 minutes 0.002 mole of the reactant was found to have reacted. Calculate the quantum yield. [10]

7) The following data were obtained for A + B → product at 100°C:

من فضلك اقلب الصفحه

$[[A]_o$ (mol L^{-1})	$[[B]_o$ (mol L^{-1})	Initial rate (mol $L^{-1}s^{-1}$)
$1.0x10^{-4}$	$1.0 x10^{-4}$	$2.8 x10^{-6}$
$1.0 x10^{-4}$	$3.0 x10^{-4}$	$8.4 x10^{-6}$
$2.0 x10^{-4}$	$3.0 x10^{-4}$	$3.4 x10^{-5}$

Determine for this reaction [15]

(a) Over all order, (b) The rate law and (c) Half-life time.

8) If the reaction, $SOCl_{2(g)} \rightarrow SO_{2(g)} + Cl_{2(g)}$, is first order with a half-life of 3.2×10^4 s and activation energy 150 kJ at 327°C.Calculate [15]

(a) rate constant, (b) time required to decompose 30.0 % of $SOCl_2$.

(c) temperature at which the rate constant is 1.00×10^{-3} s^{-1}.

N.B. $N_A=6.02 \times 10^{23}$ mol^{-1}, $h = 6.626 \times 10^{-34}$ Js, $C = 3 \times 10^8$ ms^{-1}, $k = 1.381 \times 10^{-23}$ JK-1.

GOOD LUCK

Prof. Shawky Hassan Prof. Hamed Abo El-Nadar

الفرقة الثالثة - كيمياء - كيمياء المنتجات الطبيعية ك ٣٣٥
كيمياء حيوى - كيمياء نبات - كيمياء ميراه

Mansoura University
Faculty of Science
Chemistry Department
Mansoura, Egypt

جامعة المنصورة
كلية العلوم
قسم الكيمياء
المنصورة – مصر

Second Semester May 2013

Educational Year: 3ed Year Chemistry.
Course (s): Natural Products.
Date: 03/06/2013.
Course Code: CH 335.

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

Answer the following questions

1 – a) Explain how α - terpenole is biosynthesized from acetyl-Co A. (10 marks)
b) Write the chemical structure of the following compounds and their classification (5 marks)
1- Cholic acid. 2- Codeine. 3- Ephedrine. 4- Oestrogen. 10- Myrcene.

2 – a) How biosynthetic pathway of ergosterol is converted to Vitamin D_2 ? explain your answer by chemical equations. (5 marks)

b) Nicotine is an alkaloid elucidate its chemical structure. explain your answer by chemical equations. (10 marks)

3 - Illustrate by chemical equations the conversion of the following: (15 marks)

a) Dehydroepiondrosterone into testosterone.
b) p-Toluic acid to α-terpineol.
c) Shikimic acid to cinnamic acid.

4 – Clearly show the structure elucidation of the following: (15 marks)

a) α - Terpineol
b) Geraniol.
c) Hygrine.

Prof. Dr. MM Abou-Elzahab, Prof. Dr. M Berghot & Dr. M Elsayed

المستوى الثالث - كيمياء وزو - طفيليات ٢٠١٣

Mansoura University
Faculty of Science
Zoology Department
Subject: Parasitology Z 308
Courses' Parasitology Z 308

Second Term
3rd Level: Chem./Zool.
Date: 6-6-2013 الخميس
Time Allowed: 2hr
Full Mark: (60)

Answer all Questions: Each Question [20] Mark
Illustrate your answer with labeled diagram

1- Write short notes on Two of the following:

A- Life cycle of *Plasmodium Spp.*
B- Life cycle of blood digenea.
C- Life cycle of *Faciola Spp.*

2- Try TWO of the following :

a- Life cycle of *Trypanosoma gambiense.*
b- Life cycle of *Ascaris Spp.*
c- Life cycle of *Leishmania Spp.*

3- Fill the spaces with the correct answers:

a- According to their habitats, the parasites are divided into ------(1)------ and ------(2)----- while according to their mode of life, the parasites are divided into -------(3)--------and -------(4)---------

b- There are four types of hosts: -------(5)--------, -------(6)---------, -------(7)--------- and -------(8)---------

c- Sexual reproduction in protozoa takes place by --------(9)--------- and -------(10)---------

d- The genus *Leishmania* includes three species that infect man: -----(11)-----, ---(12)------ and -------(13)-------.

e- *Trichomonas vaginalis* lives in ------(14)-------, --------(15)-------- and -------(16)---------

f- The infective stage of *Heterophyes heterophyes* is ------(17)--------, while in *Taenia saginata* is-------(18)---------.

g- The infective stage of *Balantidium coli* is ------(19)---------, while in *Ancylostoma* is ------(20)-------.

Prof. Dr/ Sayed ahmed El-Tantawy

الفرقة الثالثة كيمياء حيوان أحياء مائية ع ٢٠١٣

Mansoura University
Faculty of Science
Zoology Department
Second term- Final exam
Code : Z 304

May 2013
Third year- Zoo/Chem
Subject: Aquatic Fauna (z304)
Date: 10 June 2013
Time Allowed: 2hr
Total mark: 60 degree

Answer ALL questions with labeled diagrams

Question One: **(15 Marks)**

Write briefly on general characters of Annelida, Arthropoda, Rotifra, Nemertinia and Ctenophora.

Question Two: **(15 Marks)**

A- Write about the most important five characters of phylum cnidaria and explain one of these characters.
B- Describe the reproductive cycle of fresh water sponge.
C- Define cyclomorphosis and reproduction in Rotifera.

Question Three: **(15 Marks)**

A- As you have been studied give examples for each of the following: Copepoda, Ostracoda, Cirripedia, Branchiura, Leptostraca, Stomatopoda, Decapoda, Polyplacophora, Univalvia, Lamellibranchia, Scaphopoda and Cephalopoda.

B- What do you know about each of parasitic copepods and parasitic barnacles ?

Question Four: **(15 Marks)**

Give an account on each of the following :

A- Foot in Mollusca
B- Spiral coiling and torsion in Gastropods
C- Shell , Ctenidia and pearl formation in Pelecypoda

With best wishes of success,

Prof. Dr. Mohamed Fathy Mansour **Dr. Sherif Ramadan**