Faculty of Science
Zoology Department
Date:28 /12/ 2015
Time/ 2 hours

Program:Chemistry/Zoology
Subject : Physiology(1)
Academic year: 3rd level
Course: Z301

PART I [30 Mark]

[I] Write (T) on the correct statement and (F) on the incorrect statment (with providing correction for the false one): **[10] Mark**

1-Posterior lobe of pituitary has endocrine function in the lower vertebrates.
2-Type 2 diabetes occurs due to decreased secretion of insulin.
3- Increased secretion of oxytocin causes higher blood pressure..
4-Protein hormones act faster than steroid hormones.
5-Adrenocorticotropic hormones are glycoprotein hormones..
6- Somatomedins are produced in response to growth hormone to increase lipids synthesis.
7- An example of catabolic hormones is thyroxin.
8-Excessive secretion of prolactin inhibits spermatogenesis.
9- Hormones produced by adrenal medulla are non- steroid hormones.
10-ADH is synthesized and stored in hypothalamus.

[III]Complete each of the following **[15] Mark**

1-Insulin is a protein hormone consisting of ……., held by two disulfide bonds which are important for……..
2-Organs such as…… , ……., ……are not endocrine glands, however they can produce hormones because ……..
3-PTH keeps constant concentration of ……..through its action on……., ……& ……..
4-Hormones which affect lipid metabolism includes……., ……&. ……
5-Corticotropes secrete large protein that is hydrolyzed to form ……, ……&……
6-Hormones derived from cholesterol includes……&……..
7-……is an examples for glycoprotein hormones , which is important for…… ……..
8-MSH is secreted from ……in lower vertebrates & from……in humans.
9-Glucagon is a……...hormone consisting of …… amino acids.
10-Amines are hormones derived from……,while peptide hormones consist of …… (give one example for each).

[II]Choose the letter (S) correosponding to correct answer: **[5] Mark**

1-Throxin is important for growth process :
a-after birth. b-during childhood. c- during pregnancy d-at lactation

2The hormone inhibits insulin secretion is termed as:
a-pre-hormone. b-pro-hormone c-somatostatin. d-non.

3-Tyrosine is important for synthesis of :
a-adrenalin. b-thyroxine. c-glucagon. d-oxytocin.

4-Hormones which increase blood glucose are:
a. glucagon &growth hs b-estrogens c-insulin&growth hs. d-anabolic hs.

5-Chemical messengers produced by endocrine glands are:
a-hormones. b-steroid hs. c- protein hs. d-all .

Best wishes

Prof. Dr. Azza El-Wakf

PART (II)

I- Complete the following spaces: [15 mark]

1- Ketone bodies include: ……, …… and ……
2- From the high energy phosphate compounds ……, ……. and ……
3- To measure the basic metabolic rate the following conditions must be taken in consideration:
   a) …….. b) …….. c) ……
4- High liver glycogen content is important for:
   a) …….. b) …….. c) …… d)……
5- The fate of pyruvic acid is:
   a) …….. b) …….. c) …… d)……
6- Fatty liver means …… due to …….. due to ……, ……. and ……
   It can be treated by ……., …… and ……
7- The amino group (NH2) is excreted by the …… as …… in aquatic invertebrates and …….. but changes into …….. in insects and changes to urea in ……..

II- Discuss 3 only the follow: [15 mark]

1- The body response when blood glucose level lower than normal.
2- The fate of non nitrogenous residue of amino acids.
3- B-xidation of fatty acids.
4- The energy released from Kreb's cycle.

Best wishes

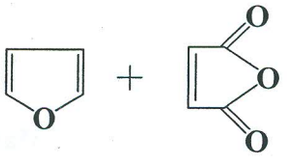
Prof. Dr./ Wfaa El-Koly

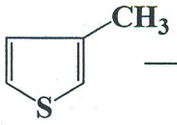
Mansoura University Faculty of Science Chemistry Department Subject: Chemistry Course(s): Org.Chem.337	1st Term 3rd Level Students Date: 31 / 12 / 2015 Time Allowed: **2** Hours Full Mark: **80** Marks

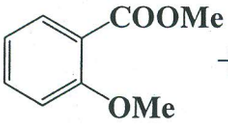
Answer All Questions

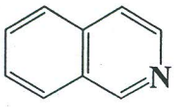
1- Suggest the organic product(s), indicating the reaction mechanism of it is possible: [27 Marks]

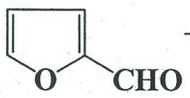
i)  + $CHCl_3$ $\xrightarrow{NaOH}$ .....

ii)  $\xrightarrow{heat}$ .....

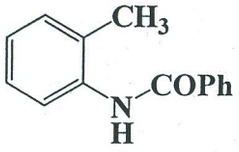
iii)  $\xrightarrow[POCl_3]{DMF /}$ ..... $\xrightarrow[reduction]{Wolf\text{-}Kischner}$ .....

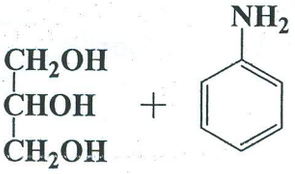
iv)  + $PhCOCH_3$ $\xrightarrow{CH_3O^-}$ ..... $\xrightarrow{HI}$ ..... $\xrightarrow{-H_2O}$ .....

v)  + $NaNH_2$ $\longrightarrow$ .....

vi)  $\xrightarrow{alc.\ KCN}$ ..... $\xrightarrow{[O]}$ .....

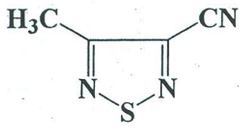
vii) $Cl{-}CH_2{-}CH_2{-}NH{-}CHO$ $\xrightarrow{\bar{O}H}$ ..... $\xrightarrow{-H_2O}$ .....

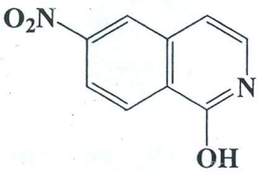
viii)  $\xrightarrow{Me_3CO^-}$ ..... $\xrightarrow{H^+}$ .....

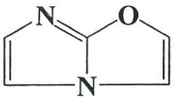
ix)  + conc. H_2SO_4 $\longrightarrow$ ..... $\xrightarrow{PhNO_2}$ .....

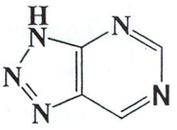
P. T. O.

2- a) Give acceptable name of each of these heterocycles: **[8 Marks]**

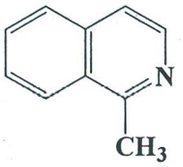
i) 

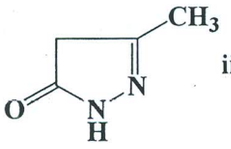
ii) 

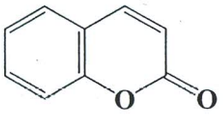
iii) 

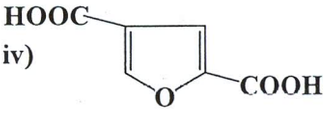
iv) 

b) Design one synthesis for each of the molecules below: **[18 Marks]**

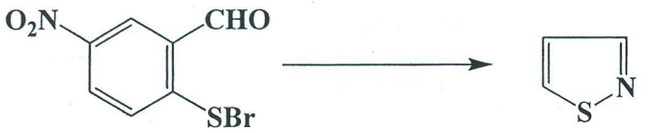
i) 

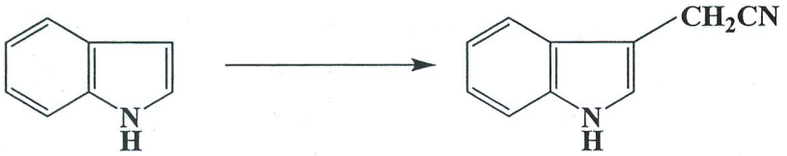
ii) 

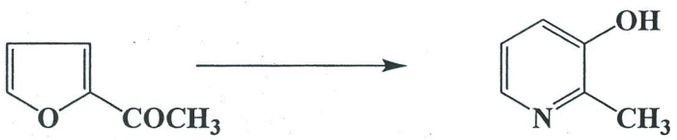
iii) 

iv) 

3- a) Diagram these conversions: **[9 Marks]**

i) 

ii) 

iii) 

b) Show the following: **[18 Marks]**

i) Knorr synthesis of 2,4-dimethylpyrrole

ii) Preparation of saccharine

iii) Conversion of pyridine to penta-1,3-diene

iv) Fischer synthesis of 2-methylindole

Best Wishes and Good luck

Examiners: Prof. Dr. Ez Kandil, Prof. Dr. Evelin Boshra, A.Prof. Dr. Eman Kishk

Mansoura University Faculty of Science Chemistry Department Subject: Biology & Biochemistry Course(s) : Transition Elemts. & Complexes Chem.(323)	كلية العلوم جامعة المنصورة	First Term 3rd Level Students Date : Jan., 2016 Time Allowed : 2 hours Full Mark : 80 Marks

Answer the Following Questions

1. a) Complete the following equations : **[20 Marks]**

i) V_2O_5 + oxalic acid $\xrightarrow{\Delta}$

ii) $2\ VCl_4 \rightarrow$

iii) $La_2O_3 + Al \rightarrow$

iv) $Zr\ Cl_4 + H_2O \rightarrow$

v) $Cr + F_2 \rightarrow$

vi) TiO_2 + conc.$H_2SO_4 \rightarrow$

b) Give reason(s) for the following :

i) ScC_2 is paramagnetic and electrically conductor

ii) The hydrated forms of $TiCl_3$ have different colors

iii) The colour of $[Mn(H_2O)_6]^{2+}$ is pale whereas of $[Mn(CN)_6]^{4-}$ is intense

iv) The hydrolysis of $TiCl_4$ is complete whereas $ZrCl_4$ is incomplete

2. a) How to extract the Cr and Ti from their main ores. **[20 Marks]**

b) Write briefly on the catalytic properties and oxidation states of transition elements.

3. a) Write the name, type of isomerism and the isomers of the following complexes : **[20 Marks]**

i) $[Co\ Cl_2(NH_3)_4]\ NO_2$ **ii)** $[TiOCl_4]^{2-}$ **iii)** $[Fe\ (ac.ac)_3]$

b) Write the formulae of the following :

i) Potassium penta cyano nitrosyl ferrate (III)

ii) μ- dihydroxy tetrakis ethylene diamine dichromium (III) chloride

4. a) Give one example for each type of monodentate and bidentate ligands **[20 Marks]**

b) How to prepare the following complexes :

i) $(Pt\ (py)_2\ Cl_2]$ **ii)** $[Fe(ac.ac.)_3]$

c) Explain two methods for the detection of complex formation

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مع أطيب التمنيات بالنجاح

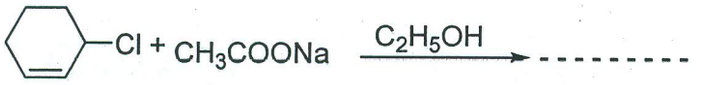
أ.د جابر أبو الريش

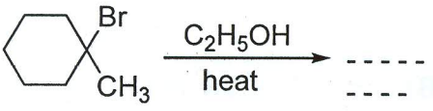
Mansoura University Faculty of Science Chemistry Department Subject: Chemistry	First Term Time Allowed: 2 Hours Date: Jan. 2016 Full Marks: 80

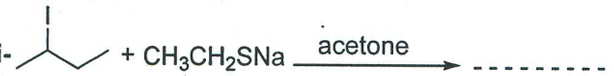
Course(s): Chem.336 Physical Organic Chemistry for 3rd Level Biochemistry, Chem. Zool. and Chem. Bot. students

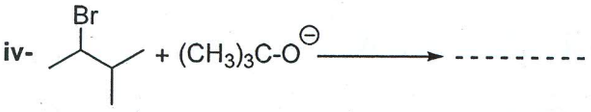
Answer All Questions

Q1: A) Draw the expected organic product(s) in each of the following equations, please remember to ***discuss reaction mechanisms*** in each reaction **(28 Marks)**

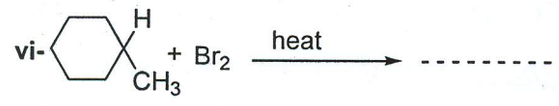
i- 

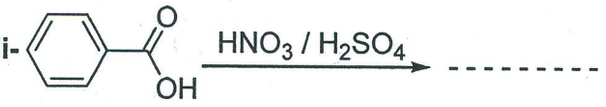
ii- 

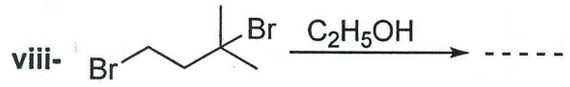
iii- 

iv- 

v- 

vi- 

vii- 

viii- 

Q2: A) Show each of the steps used in the mechanism of chlorination of ethane. Calculate heat of reaction in propagation step knowing that hemolytic bond dissociation energy (DH^o) are shown below **(8 Marks)**

DH^o value	Cl_2	58 Kcal/mole	DH^o value	C-H	100 Kcal/mole
	HCl	103 Kcal/mole		C-Cl	84 Kcal/mole

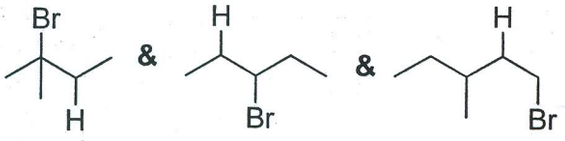
B) Which compound of each pair of the following would you expect to be more rapid toward nucleophilic substitution reaction? ***Explain*** **(9 Marks)**

i- 

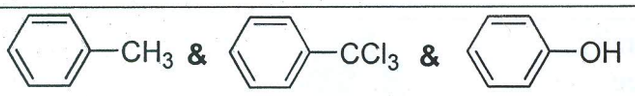
ii- 

iii- 

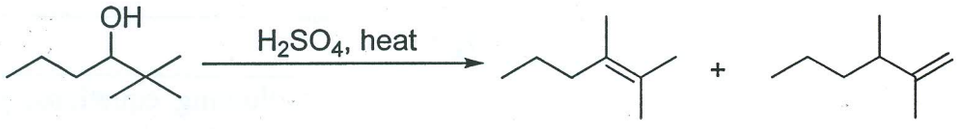
C) Arrange the following alkyl substrates in a decreasing order toward **(8 Marks)**

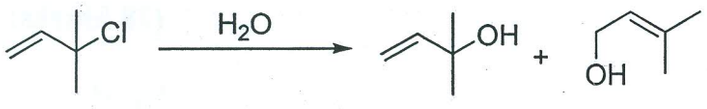
i - E^2 reaction with strong base 

Please Turn to Next Page

ii - mononitration reaction  &

Q3: A) Provide a mechanism for the following reactions indicating the major and minor products **(8 Marks)**

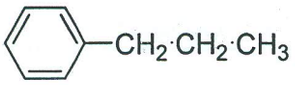
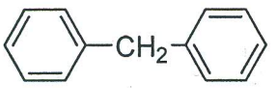
ii - 

ii - 

B) For each of the following pairs determine the ***stronger nucleophile***, ***why*** **(6 Marks)**

i - CH_3ONa & CH_3COONa **ii** – NH_3 & PH_3 **iii** – H_2O & HO^-

C) Show by equations how you would synthesis the following compounds starting from ***benzene*** any other needed reagents **(8 Marks)**

i -  **ii-** 

D) Using 2-methylbutane with Br_2 in presence of light, draw all the expected products and indicate the relative amounts of products you expect to be formed **(5 Marks)**

With our Best Wishes

Examiners: Dr. Ebrahim Abdel-Galil, Dr. Soha M. Abdelmageed, Dr. Saad Shaaban

Mansoura University
Faculty of Science
Zoology Department

First term, Final exam, January, 2016

Education year: Third level | **Program: Chemistry/Zoology**
Subject: Zoology | **Time: 2 hours**
Course: Embryology | **Date: 14/ 1/ 2016**
Code: Z 302 | **Full Mark: 60**

Answer all the following question:

Q1- A) Rewrite 12 sentences only in your answer sheet after correction: (12) marks

1- The first appearance of trophectoderm tissue in embryonic vertebrates represented in class .....
a- amphipia b- avis c- mammal

2- ..... actively supports trophoblast by secreting proteins cause it divide.
a- ICM b- chorion c- amnion

3- The human zygotic genome is first activated between ..... stage.
a- 2-4 cells b- 4-8 cells c- 8-16 cells

4- The primary optic vesicles arise as lateral dilation of prosencephalon in chick embryo .....
a- 48 hours b- 24 hours c- 33 hours

5- The first heart beat of chick embryo starts about ..... hours.
a- 25 b- 29 c- 33

6- Human embryo proper comes entirely from .....
a- trophoblast b- hypoblast c- inner cell mass

7-Internal fertilization in birds occurs in the oviduct ..... the albumen is secreted.
a- before b-after c- within

8- Morula of yolky egg absorbs water from the surrounding albumen and secrets a fluid to form.....
a- blastocoel b- subgerminal cavity c- archentron

9- At the end of area pellucida formation, it is represented as a layer of ..... thick.
a- one-cell b- two-cells c- multi-cells

10- Hensen's node functionally is similar to the ..... of blastopore of amphibians.
a- ventral lip b- dorsal lip c- micromeres

11- The first cells migrating through Hensen's node and remaining between epiblast and endoderm are.....
a- prechordal plate b-pharyngeal endoderm c- chordamesoderm

12- While mesodermal ingression continues, Primitive streak starts to ..... posterior.
a- ingress b- progress c- fix

13- During the developing of optic cup, the lens of eye arises from .....
a- neural ectoderm b- epidermal ectoderm c- paraxial mesoderm

Q1-B) Discuss the importance of TWO of the following: **(4) marks**

a- The hypoblast in both birds and mammals.

b- Trophoblast cells.

c- The amnion.

Q1-C) Give a reason for incidence the following phenomenon: **(6) marks**

a- The hind gut develops as a closed tube at the posterior end of the chick embryo 48hours.

b- Mesencephalon appears in the front of chick embryo 48 hours incubation.

c- Developing of the fifth embryonic membrane (placenta) in mammalians only.

Q2-A) Give a short note of ONE of the following, adding labeled diagram : **(8) marks**

a- Chick embryo of 48 hours incubation.

b- The embryonic membranes in avis.

Q2-B) Answer the following using only labeled diagrams: **(14) marks**

a- The development of the eye in Toad.

b- Early development of heart in amphipians.

c- Fate map of amphioxus and toad.

Q3- A) Identify : **(6) marks**

pregastrulation movement – involution - chordomesodermal mantle.

Q3-B) Write short note: **(10) marks**

1-Development of the mouth.

2-Development of the olfactory organ.

.....

With our best wishes ..... Dr. Manal Ramadan, Dr. Heba EL-Ghawet

جامعة المنصورة – كلية العلوم
قسم الرياضيات
التاريخ :18 / 1 / 2016 م
الدرجة الكلية : 80
الزمن : ساعتان

امتحان دور يناير 2016 م
المستوى : الثالث
اسم المقرر : احصاء حيوى
كود المادة : ر 301

برامج: فيزياء حيوى- ميكروبيولوجى - كيمياء و حيوان - كيمياء و نبات - علوم بيئة

Answer the following questions:

[Q1] a- Compute the Pearson's correlation coefficient r for the following data. Explain the reason for this value of r. (10 Marks)

x	1	2	3	4	5
y	3	5	7	9	11

b- Let X be the number of heads when a coin is tossed three times. (12 Marks)

Find i)The cumulative distribution function $F(x)$ ii) $E(2X+1)$ and $Var(3X+5)$

c- If the average number of visitors to a web server per minute is 6 . What is the probability that (8 Marks)

i) The number of visitors in one minute will be less than two ?

ii) There are exactly two visitors in 30 seconds ?

[Q2]a- The heights of 1000 students in a certain college are normally distributed with mean 68 inches and standard deviation 3 inches. How many of these students would you expect to have heights: i) More than 64 inches ii) Between 67 and 71 inches.

$(\Phi(1.33)=0.908\ ,\ \Phi(-1.33)=0.092\ ,\ \Phi(1)=0.841\ ,\ \Phi(-0.33)=0.371\ )$ (10 Marks)

b-The contents of seven similar containers of sulfuric acid are 9.8 , 10.2 , 10.4 , 9.8 , 10.0 , 10.2 , 9.6 liters. Find 95 % confidence interval for the population mean μ , assuming the population is normally distributed.

($t_{(0.025,6)} = 2.447$, $Z_{0.025} = 1.96$) (15 Marks)

[Q3]a- The following table shows the weights (in kilogram) of 60 children (18 Marks)

weight	9.5 –19.5	19.5 –29.5	29.5– 39.5	39.5 –49.5	49.5– 59.5
frequency	5	10	18	20	7

Find i) The sample mode by two different methods. ii) The sample median.

iii) Graph the cumulative frequency and deduce the median from it.

b-If we choose randomly two tubes in succession from a shipment of 86 tubes of which 12 are defective. What is the probability that both tubes will be defective? (7 Marks)

مع أطيب التمنيات بالنجاح د. فاتن شيحه – د. عبد الفتاح مصطفى - د. محمد عبدالرحمن

Mansoura University
Faculty of Science
Zoology Department
Subject: Toxicology Z310

First Term
January, 2015
Date: 21/1/2016
Time: 2 hours

Final examination for 3rd level students, program Chemistry & Zoology.

Answer all the following questions

First question: **[30 mark]**

(A) Fill in the spaces: **(15 mark)**

1. Exposure over a long period of time is called.....
2. The functional group added in.....serves as a site for.....in phase II reactions.
3. The non-ionized form of a drug is more readily absorbed than the ionized form because.....
4. Intoxication with aflatoxin causes.....
5. Transport is saturable at high concentration gradients is a characteristic of.....
6. The enzymes catalyzed the reactions of phase II metabolism are called.....
7. The fraction of an administered dose of unchanged drug that reaches the systemic circulation is called.....
8. Zone 1 in the liver is located around .....where the blood.....
9. A reversible change in cells, which may include an altered size, shape, and/or organizational relationship is known as.....

10.  ⟶ ..... ⟶ .....

Biotransformation of benzene

(B) Put (√) or (X), and correct the false sentences: **(15 mark)**

1. All administered xenobiotics should be exposed to phase II reactions.
2. Target organ dose is the actual amount of a toxicant that is absorbed into the organism and distributed systemically throughout the body.
3. Pinocytosis is not specific process by which the cell engulfs certain substances.
4. The interactions of a toxicant or its active metabolite with a molecular target and the resultant toxic effect are known as phase I reactions.
5. Most of phase II enzymes are located in the cytoplasm of cells.

6. Cholestasis is a condition characterized by replacement of liver tissue by fibrosis, scar tissue, and regenerative nodules.
7. Glutathione is used for oxidation reactions in phase I reaction.
8. Salicylate as an acidic drug can easily diffuse back into the blood from an alkaline urine, resulting in prolonged and perhaps intensified activity.
9. The changes in the plasma concentration of a toxicant over time are known as toxicokinetic.
10. Long-term exposure to small doses of drugs of a very low $T_{1/2}$ can produce severe toxicity.

Second question: **[30 mark]**

(A) Write short notes on each of the following subjects: **(15 mark)**

1. Factors affecting the action of poison (five only).
2. Role of CYP450 in phase I reactions.
3. Classification of hepatotoxicity.

(B) Identify each of the following terms: **(15 mark)**

1. Biological half life ($T_{1/2}$) 2. Anaplasia 3. Apoptosis 4. Xenobiotics 5. First-Pass Metabolism

Third question: **[20 mark]**

(A) Complete Four only to form correct scientific sentences? **(8 Marks)**

1. **PPM** is the abbreviation of....., while PPT is the abbreviation of .....
2. **PPM** is a measure of the concentration of a .....
3. In weight/volume (w/v) terms, **1ppm = 1g/..... = 1...../L = 1µg/.....**
4. In weight/weight (w/w) terms, **1ppm = 1...../kg = 1...../g.**
5. The routes by which organisms are exposed to pesticides are .....

(B) Answer according to the question between brackets? **(4 Marks)**

1. The dose corresponding to **probit 5** is found out to determine LD_{50}. **{Give reason}.**
2. The ability to cause cancer. **{Give scientific term}.**
3. The ability to cause heritable change in the DNA. **{Give scientific term}.**
4. Median Lethal Concentration. **{Identify}.**

(C) What mass in milligrams of potassium nitrate is present in 0.25kg of a 500ppm $KNO_{3\,(aq)}$? **(4Marks)**

(D) Describe how can you determine the LD_{50} of thymoquinone practically? **(4Marks)**

========== **End of questions** ==========

Dr. Faried Hemieda **Dr. Mamdouh El-Sawi**

Mansoura University
Faculty of Science
Zoology Department

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1st Semester Exam
21st Jan 2015
Egyptian Fauna
3rd level Students of Chemistry/ Zoology
Time Allowed / 2 hours (80 MARKS)

Answer the following questions: (30 Marks)

Q1- A) Briefly, discuss the characteristic of following fauna that makes them able to breed and reproduce successfully in Egypt.

1. Sahara Birds
2. Scorpion
3. Camel
4. Fox

B) Compare in at table giving at least one example for each:

1. Food chain & food web
2. Ecosystem & Community
3. Acclimation & Acclimatization

Q2- A) MCQ: (20 Marks)

1. The toxic levels of chemicals like DDT in the tuna, that ate some small fish, that ate some zooplankton, that ate some phytoplankton is due to ----------
   a. biological magnification
   b. biotic potential
   c. carrying capacity
   d. environmental resistance

2. In a community, producers are ---------- which convert light energy to chemical energy in a process called ----------.
   a. heterotrophs, photosynthesis
   b. autotrophs, photosynthesis
   c. heterotrophs, respiration
   d. autotrophs, respiration

3. Which of the following lists include only abiotic environmental factors?
   a. food, temperature, fire, wind
   b. soil minerals, oxygen level, light, predators
   c. wind, rainfall, temperature, soil minerals
   d. light, food, predators, competitors

4. The biome concept illustrates: ----------
   a. dominant plant communities
   b. insect populations
   c. old field succession
   d. animal diversity

4. An organism's "trophic" level refers to ----------.
   a. the rate at which it uses energy
   b. where it lives
   c. what it eats
   d. whether it's early/ late in ecological succession

Kindly, follow the exam in the next page

5. Which sequence accurately describes the carbon cycle?

a. Carbon in carbon dioxide breathed out by you>carbon dioxide contributes to global warming>carbon released as heat and exits system
b. Carbon in carbon dioxide breathed out by you>carbon dioxide absorbed by tomato plant>carbon stored in carbohydrates in tomato>tomato eaten by you
c. Carbon in carbon dioxide is captured by chlorophyll in a tomato plant>chlorophyll converts carbon into chemical energy>energy used to grow tomato>tomato energy consumed by you>you release energy as heat
d. Carbon in the soil is fixed by bacteria into carbon dioxide>carbon is converted into nitrates>carbon absorbed by a plant>when plant dies carbon returns to soil

6. These cows are grazing on grass: If a cow consumes 1000 J of grass energy in a day, approximately how much of this energy will be stored in its body tissues?

a. 1000 J
b. 600 J
c. 300 J
d. 100 J

7. Energy --------- an ecosystem.

a. flows through b. cycles within
c. transfer to d. absorbed within.

8. Computer models that forecast the effects of global warming predict ---------.

a. sea levels will rise
b. coastal areas will experience much greater rainfall
c. agricultural yields will fall as inland area experience more droughts
d. all of the above

9. Exposure to in :reasing amounts of UV radiation which might ultimately lead to an increase in the incidence of skin cancer is a concern associated with

a. ozone depletion b. the greenhouse effect
c. global worming d. biomagnification

10. What is the ultimate source of energy for the ecosystems on Earth?

a. Plants b. The Sun
c. Oxygen d. Nutrients

B) predict three general effects that may influence the biome distribution and diversity within the climate change phenomenon. (5 Marks)

Q3- A) Diagram and identify the processes involved in water-nutrient-energy cycle. (15 Marks)

B) Briefly explain the energy partitioning in a link of the food chain. (10 Marks)

Good luck

Examiner:
Assoc. prof. Dr. Zeinab Abou-Elnaga

Mansoura University **Faculty of Science** **Chemistry Department** **Subject code: Chem. 314** **Course: Volumetric analysis, Gravimetric analysis and Chromatography**		**First semester examination** **3rd level students** **Program: Chemistry/Zoology, Chemistry/Botany and Microbiology** **Date: 28/1/2016** **Time allowed: 2 hours** **Full mark: 60 marks**

Answer the following questions: (الأسئله في صفحتين)

Section A: (Volumetric analysis and Gravimetric analysis) (30 marks)

Question 1: (14 marks)

A. Put true (√) or false (×) and correct the wrong one: (5 marks)

1. The phenol phethaline indicator is suitable for the titration of NH_4OH against HCl.
2. The **ppb** unit for concentration can be expressed as **µg/L**.
3. For precipitation reactions, the ionic product should be higher than the solubility product.
4. The complexometric titration between **EDTA** and Ca^{2+} shouldn't be carried out at pH=3.
5. The equivalent weight = Molecular mass for $NaHCO_3$.

B. Write on the properties of metallochromic indicators. (2 marks)

C. A 0.5 g sample containing Ca and Mg carbonates was dissolved in diluted HCl and completed with distilled water to 250 ml. 10 ml of the resulting solution were titrated with 0.01M EDTA solution. Using EBT indicator, 19 ml of EDTA were consumed, while on using murexide indicator, 8 ml of EDTA were consumed. Calculate the percentage of both Ca and Mg carbonates in the sample. **(3 marks)**

D. Define each of the following: (4 marks)

i- Peptization. ii- Co-precipitation. iii- Post precipitation. iv- Digestion.

Question 2: Choose the correct answer: (16 marks)

1) What do you understand by the term "Quantitative analysis"?
   - **a.** Involves determining the individual constituents of a given sample.
   - **b.** Involves the determination of the relative or absolute amount of an analyte in a given sample.
   - **c.** Involves the addition of measured volume of a known concentration of reagent into a solution of the substance to be determined (analyte).
   - **d.** Involves determining the level of purity of an analyte.
   - **e.** Involves determining the quality of a sample.

2) If the concentration of H^+ ions in an aqueous solution is 2.5×10^{-4} then,
   a-Its pH <7 b-The solution is acidic c- Its pOH >7
   d-Its OH^- concentration is less than the concentration of OH^- in neutral solution e. All

3) The chemical formula of the indicator formed at the end point in volhard's method is:
   a- $FeCl_3$ b- $[Fe(SCN)_6]^{2+}$ c- $Fe(OH)_3$ d- none

4) Which one of the following considered as a monodentate ligand:
   a- $H_2N\text{-}CH_2\text{-}CH_2\text{-}NH_2$ b- NH_3
   c- EDTA d- $C_2O_4^{2-}$

5) 3.60 M Sulphuric acid solution that is 29% H_2SO_4 (Molar mass = 98 g mol^{-1}) by mass, the density (in g.mL^{-1}) will be:
   a- 1.45 b- 1.64 c- 1.88 d- 1.22

6) In the precipitation of Ag^+ as AgCl, which one of the following can be used as a washing solution?
   a- HNO_3 b-H_2O c-NaCl d-$Ba(NO_3)_2$

7) Mohr's titration should be carried out at pHs:
   a- 7 b- 9 c-12

8) Indicator used in complexometric titration is…….
   a- Eriochrome black T b- Xylenol orange c- Murexide d- all

Please turn the page→