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real answer

	TANTA UNIVERSITY - FACULTY OF SCIENCE - MATHEMATICS DEPARTMENT		
	EXAMINATION for 2TH LEVEL (CHM-ENTOMOLOGY)		
	COURSE TITLE: Applied Statistics (MA2122)		TIME ALLOWED: 2 Hours
DATE: 1 January 2018	TERM: First	TOTAL ASSESSMENT MARKS: 50	

Answer the Following Questions:

Q1: The following data are sorted in an ascending order; find X, Y, Z and W;

if the mean = 11, the median = 7.5, the mode = 7 and the range = 20:

3, 4, 6, 7, X, Y, Z, 18, 20, W (10 Marks)

Q2: (i) Let $S = \{a_1, a_2, a_3, a_4\}$ and p be a probability function on S:

(a) Find $p(a_1)$ and $p(a_2)$ if $p(a_3) = p(a_4) = \frac{1}{4}$ and $p(a_1) = 2p(a_2)$.

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(ii) For the events $C, D \subseteq S$; if $P(C \cap D) = \frac{1}{4}$, $P(C/D) = \frac{1}{3}$, $P(D/C) = \frac{3}{5}$

Find: (a) $P(C)$ (b) $P(D)$ (c) $P(C/D')$ (d) $P(C/C \cup D)$

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Q3: If the probability distribution of the random variable X is defined by:

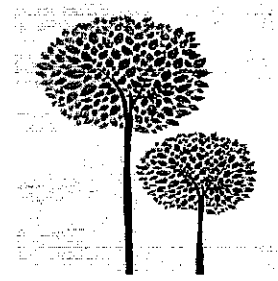
(10 Marks)

x	8	12	16	20	24
p(x)	$\frac{1}{8}$	$\frac{1}{6}$	$\frac{3}{8}$	k	$\frac{1}{12}$

Find: (i) the value of k (ii) $E(X + 1)$ (iii) σ^2

Q4: Some leaves of a certain tree are collected to extract a drug from them.

A study is done to determine if there is a correlation between the height of the leaves and the concentration of the drug.



Height (X)	2	4	7	5	3	5	6	4	7	3
Concentration(Y)	3	5	9	7	4	6	7	6	8	5

- i. Find Pearson correlation coefficient.
- ii. Find the equation of the regression line.
- iii. Estimate the value of Y when $X = 10$.

(10 Marks)

Q5: If X is a random variable following a normal distribution such that $X \sim N(50, 25)$, calculate the

following probabilities:

(i) $P(40 < X < 60)$ (ii) $P(X > 60)$ (iii) $P(X < 45)$ (iv) $P(55 < X < 65)$


Note that: $A(1) = 0.34134$, $A(2) = 0.47725$, $A(3) = 0.49865$

(10 Marks)

WITH ALL MY BEST WISHES

Dr. Wafaa Anwar

o *real applied*

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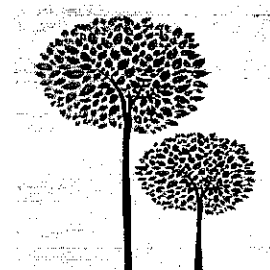
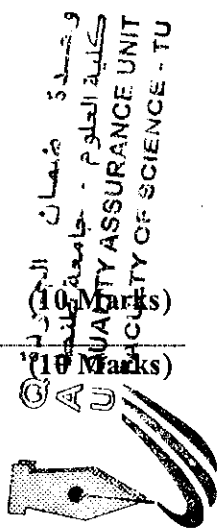
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Dr. Wafaa Anwar

EXAMINARS : 1- DR.WAFAA ANWAR ABD EL LATIF

2- PROF. MOHAMED MOHAMED EZZAT



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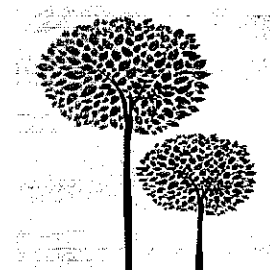
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o *ipb*
real world

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2- PROF. MOHAMED MOHAMED EZZAT

		TANTA UNIVERSITY FACULTY OF SCIENC CHEMISTRY DEPARTMENT			
FINAL EXAM FOR 2nd LEVEL STUDENTS (ALL SECTIONS)					
COURSE TITLE		CHEMISTRY OF THE MAIN GROUP ELEMENTS		TIME ALLOWED 2 H	
CODE		CH2107			
DATE: JAN 3, 2017		TERM: FIRST	TOTAL ASSESSMENT MARKS		100

[I]. Give reasons for the following. (20 Marks)

- 1- Water has abnormal low volatility and the stability of hydrides decreases down group VI
- 2- Silanes are strong reducing agents, but alkanes are chemically unreactive.
- 3- Li and group II metals form nitrides on heating in air
- 4- PCl_5 is known but PH_5 is not.

[II]. Draw and explain the structure of the following: (20 Marks)

- 1- Phosphorus trioxide and pentaoxide
- 2- Orthoborates and metaborates
- 3- Beryllium halides and hydrides
- 4- Diborane
- 5- Silicones

[III]. Rank "FOUR ONLY" of the following series from high to low according to the given criteria and explain reasons: (20 Marks)


- | | |
|-------------------------------|-----------------------------------|
| 1- NaCl, $MgCl_2$, $AlCl_3$ | (Polarization and polarizability) |
| 2- NH_3 , PH_3 , AsH_3 | (Donor properties and stability) |
| 3- HF, HCl, HBr, HI | (Acidity Strength) |
| 4- BF_3 , BCl_3 , BBr_3 | (Lewis acid strength) |
| 5- Li, K, Cs | (Reaction with water) |

[IV]. Compare between the following: (20 Marks)

- 1- Trimethylamine and trisilylamine in structure and donor properties.
- 2- Group I and II elements in softness.
- 3- Diamond and Graphite.
- 4- SO_3 , SO_2 and SeO_2

[V]. Choose the correct answer "FIFTEEN ONLY" with REASON: (20 Marks)

- 1- In which of the following compounds, nitrogen exhibits lowest oxidation state?
 a- HNO_3 b- N_2H_4 c- N_2 d- NH_2OH e- NH_3
- 2- Which of the following contains P - O - P bond?
 a- Tripolyphosphoric acid c- Hypophosphorous acid
 b- Pyrophosphoric acid d- a and b
- 3- Which of the following compound is ionic?
 a- PCl_5 b- CCl_4 c- PbF_4 d- $PbBr_4$

	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF CHEMISTRY		
	EXAMINATION FOR SECOND YEAR STUDENTS		
COURSE TITLE:	PRINCIPLES OF ANALYTICAL CHEMISTRY		COURSE CODE: CH2105
DATE: 6-1-2018	TERM: FIRST TERM	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

Question (I): State true (✓) or false (✗) and give the reasons for your answer:

(45 Marks)

- 1) The acidic medium is the best one for the titration of sodium oxalate by potassium permanganate.
- 2) The titration of 0.1N sulfurous acid by sodium hydroxide is stepwise. ($K_1=1.2 \times 10^{-2}$, $K_2=5.6 \times 10^{-8}$)
- 3) EDTA can be called chelating agent.
- 4) The normal hydrogen electrode contains titanium sheet.
- 5) SCN^- ions can be determined satisfactory using Mohr's method.
- 6) The titration of 1 N carbonic acid can be titrated. ($K_1=4.2 \times 10^{-7}$, $K_2=4.8 \times 10^{-11}$)
- 7) The pH value in the titration of weak acid against weak base equals $\frac{1}{2} pK_w + \frac{1}{2} pK_a + \frac{1}{2} \log C_{salt}$
- 8) It is possible in Volhard's method to complete titration in presence of AgCl.
- 9) For writing the half cell equation, the reduced form can be written in the left hand.
- 10) Br^- and I^- ions can be determined by Volhard's method without any titration error.
- 11) $HCrO_4^-$ or $Cr_2O_7^{2-}$ ions can be used to detect the end point for the precipitation titration of Cl^- ions using Mohr's method.
- 12) Nernst equation can be applied for the half cell reaction, if the solutions concentration equals 1 N.
- 13) Each of Fe^{3+} and Ca^{2+} can be determined using EDTA titration.
- 14) Lewis acid can be defined as hydrogen acceptor.
- 15) Heating is necessary for Al^{3+} -EDTA titration.

Question (II): Choose the correct answer from each of the following and give the reasons:

(15 Marks)

- 1) Which of these metal ions can be masked using CN^- ions?
 - a) Mg^{2+}
 - b) Zn^{2+}
 - c) Ni^{2+}
- 2) Distinction between a weak acid or strong acid can be made through.....
 - a) Phenolphthalein indicators
 - b) universal indicator
 - c) methyl orange indicator
- 3) For Mercurimetric determination of cyanide,
 - a) Fe^{3+}
 - b) Hg^{++}
 - c) Hg^+ was used as indicator
- 4) Hydrogen acts as a reducing agent,.....
 - a) by taking oxygen
 - b) by giving electrons
 - c) by taking hydrogen
 - d) Both A and B

