

University of Technology
Department of Applied Sciences
Final Examination 2016/2017



Subject : physics
Branch : الكيمياء التطبيقية
Examiner: ا.م. د. ضحى سعدي

Class : first class
Time : 3 hours
Date : 8/6/2017

Note: answer only 4 questions

Q1 Determine the electrical force (F) of attraction between two balloons that are charged with the opposite type of charge but the same quantity of charge. The charge on the balloons is $6.0 \times 10^{-7} \text{ C}$ and they are separated by a distance of 0.50 m. (12.5 mark)

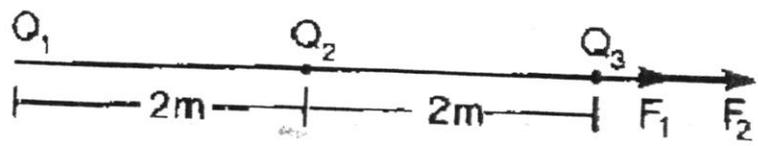
Q2 Two point charges are separated by a distance of 10 cm. one has a charge $-25 \mu\text{C}$ and the other $50 \mu\text{C}$. determine a) the direction and magnitude of the electric field (E) at point (P) between two charges that is 2 cm from the negative charge. b) if an electron of mass ($9.1 \times 10^{-31} \text{ Kg}$) is placed at rest at (P) and then released, what will be its initial acceleration (a). (12.5 mark)



Q3 two point charges of $40 \mu\text{C}$ and $-10 \mu\text{C}$ are separated by distance 10cm. What is the electric field (E) midway between these two charges? (12.5 mark)

Q4 what is meaning Flux and write the equation of Gauss law. (12.5 mark)

Q5 Three charges about $+20 \mu\text{C}$ are placed along a straight line and the distance between these charges is about 2m as shown in figure down find the force (F) on the charge in right end Q_3 . (12.5 mark)





University of Technology
Department of Applied Sciences
Final Exam 2016/2017



Subject: Inorganic chemistry
Branch: Applied chemistry
Examiner: L.Sallal AL-Merhj

Class: 1st
Time: 3hr
Date: 29/5/2017

Note : answer four questions only (Each question has 25 marks)

- Q1) a- find the fourth quantum numbers of the last electron and the term symbol for Cr^{+3} (15marks)
- b- determine the frequencies and wave number of electromagnetic radiation of the following wave length, 1- 6.0 \AA , 2- 430 \mu m . (10marks)
- Q2) a- In the Lyman series, calculate the wave number, wave length and frequency for the lines, n_2 5, 6 Rydberg constant = 109677 cm^{-1} . (10marks)
- b- According to M.O.T what are of the following compound is more stable (O_2^{-1} , O_2^{-2})? (15marks)
- Q3) a- explain the following terms (Zeeman effect, Emission spectra, gerade and ungerade, ionization energy, ionic radii) (10marks)
- b- What is Atomic number of the element that its last electron has following quantum numbers, $n=3$, $l=2$, $m_l=-2$, $m_s=+1/2$? (10marks)
- Q4) a- Calculate the effective nucleus charge that the valence electron feel in a copper atom (29) and the last electron in the d-orbital of the same element. (10 Marks)
- b- rearrange the following ions according to decreases of the ionic radius F^{-1} , Si^{+4} , Na^{+1} , Mg^{+2} , Al^{+3} , what is the reason of that? (5 Marks)
- c- b- for the following reaction ($\text{Li} + \frac{1}{2} \text{Br}_2 \rightarrow \text{LiBr}$), draw the Born Haber cycle and interpret all symbols (10 Marks)
- Q5) a- find the hybridization of the following molecule (IF_7 , ClF_5 , NH_3 , CO_2 , IO_3^{-1}) (15marks)
- b- what is the radius of the first Bohr orbit for Li^{++} , $Z=3$? (10marks)

Good luck



University of Technology
Department of Applied Science
Final Examination 2017-2016
First Attempt



Subject: English Language
Branch: Biotechnology
Examiner: Muna Abdul Hussein

Class: 1st. year
Time: 3 hours
Date: 14/6/2017

Q1: Read the following passage, then answer the questions below: (25marks)

Have you ever wanted to live in a modern city, one of the biggest places to live in a world? Set in the heart of northern France, Paris is my favorite city. In this lovely place everyone can find something what they like. Paris has many impressive sight to see, ranging from the historical beauty of Notre Dame Cathedral and The Louvre to Art de Triomphe and the Champs-Elyses. Paris has been a major center of innovation and genius for centuries, and this heritage is reflected in this city's incomparable museums and galleries. The word "museum" may ever be unfit when it comes to the Louvre: the collections are so vast, diverse and breathtaking that visitors may have the impression of navigating a move of distinct artistic and cultural worlds.

11. Which city is set in the heart of northern France?
12. Is the word "museum" fit to the Louvre?
13. Which of the following words can replace the "impressive" in the third line:
 a- nice b- remarkable c- fit
14. What makes Paris a major center of innovation and genius for centuries/
15. In no more than five sentences, describe your favorite city?

Q2: Fill the blanks in the sentence, using the adjectives in the following box (choose 5). (10 marks)

younger	more beautiful	taller	beautiful	larger	higher	bigger
shortest	the highest	the best	more difficult	biggest		

- 17- My brother isthan me, but he is younger, too.
- 18- A rose is than a daisy.
- 19- The Earth is in diameter than the moon.
- 20- Jupiter is the planet in our Solar System.
- 21- I am theperson in my family.
- 22- Mount Everest ismountain in the world.
- 23- That wasmovie ever.
- 24- Learning Japanese isthan leaning English.

Q3: The dialogue below is in a restaurant between the waiter (A) and a costumer (B). Complete the dialogue with a suitable word or phrase in the box above the dialogue. (15 marks)

Here is	so sorry	take care	Thank you	I will just	over there	by mistake
But	That's OK	ordered	I will only	There		

A:your breakfast!

B: Thanks so with an answer much. Miss, I believe Imy eggs scrambled, and these are fried.

A: Sorry, your friend ordered Fried eggs, and I gave you his

B: Oh yeah. Here,trade with him.

A: Here are your pancakes, sir.

B: I ordered waffles!

A: I am

B: I will eat my eggs and bacon, and you can take my pancakes back.

A: Good, sir. I willof that right away.

B: so much!

Q4: Choose either A or B

(10 marks)

A: Match the question mark in column A with the answer in column B

A	B
1- Where	a- Ahmed
2- When	b- in Baghdad
3- What	c- on Sunday
4- Why	d- because
5- How many	e- ten

B: Find the question word in the following box that complete the questions below:

Where	How	Why	Who	How much	What	How many
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1- do you live?

2- old are you?

3- do you work hard?

4- is your favorite sport's team?

5- languages does your teacher speak?

Q5: Rewrite the following sentences correctly (choose 5):

(10 marks)

1- My uncle is Saturday works a pianist. often with his friends every He.

2- Paris is my favorite city. capital It is the of France.

3- Why you do work so hard?

4- Excuse me you! Can help me?

5- It's. I will join you later OK.

6- We can't go far for a walk. It's too.

7- I can't find my suitcases anywhere.

Best Wishes



Branch: رياضيات + الكمبيوتر
 Subject: Computer Science
 Examiner: Lec. Madeha Shaltghag

Class :1st

Time : 3 hours

Date : 6/6

(Answer Four Questions, (17.5 M) for each Question)

Q1) Explain the Taskbar properties?

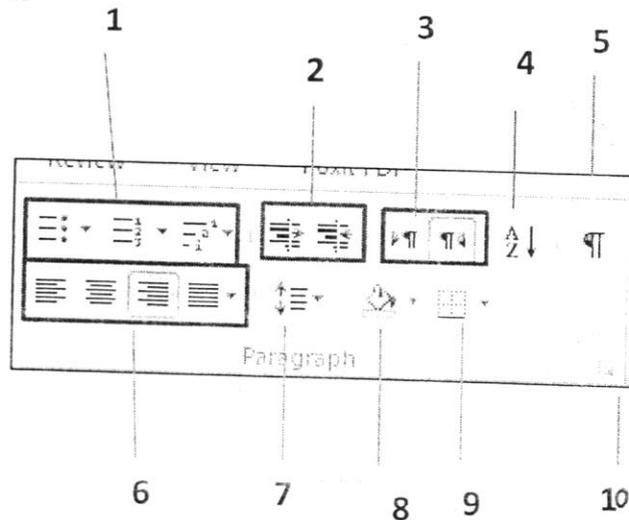
Q2) Explain the Menu That Appear When For Right-Click on Empty Area of the Desktop?

Q3) a) Write the Difference between the Following?

1. Bullets, Multilevel
2. Refresh, Restart
3. Clipart , SmartArt
4. Change Window Color, Add Color to Worksheet
5. Auto Hide the Taskbar, Hide Worksheet
6. New Slide, New Worksheet

b) Explain the Difference between Microsoft Office Word And Microsoft Office Excel?

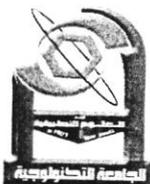
Q4) Explain the following?



Q5) a) what are the main steps to do the following?

1. Rename Folder
2. Split Cells in Word
3. Insert New Slide
4. Merge Cell
5. Custom Animation in Power Point
6. Change Back ground

b) What Are the Main System Icons? Mention them And Show How to put them on Desktop ?



University of Technology
Department of Applied Sciences
Final Examination 2016/2017



Subject : Analytical Chemistry
Branch : Applied Chemistry
Examiner : Dr. Wafaa Raji Mohammed

Class : 1st year
Time : 3 hours
Date : 4/6 / 2017

Answer four question only

(25 mark to each question)

Q1/a- 25mL of 0.1 N HCl solution is titrated with 0.1 N NaOH solution.

Find the pH values at 1. At initial point. 2. After addition of 5 ml of 0.1N NaOH solution.

b- Enumerate the steps of chemical analysis and explain two.

Q2/a- Calculate the Molarity of solution result from dissolving 20 g of Sodium hydroxide NaOH in 2 Litters of solution.

b- Answer with (true) or (false) and correct the false to the following sentences:

1. Standard Solutions should be having low molecular weight.
2. KMnO_4 consider the most used as reducing agent.
3. KCN is a salt derived from weak base and strong acid.
4. At equivalent point: meq of the titrant solution $>$ meq of the titrated solution.
5. Glycine is called unidentate.

Q3/ How can you prepare 0.1 N of 250 mL Sulfuric Acid H_2SO_4 if you know Sp.Gr. 1.84 percentage ratio 96% and M. Wt. 98 g/mole.

Q4/a -Calculate the mole fraction of aqueous sugar solution (15% (w/w) $\text{C}_6\text{H}_{12}\text{O}_6$).

b- Explain with examples the difference between electrolyte and non electrolyte materials.

Q5/ Illustrate the Factors affecting the reaction equilibrium and explain one of them with example.

Atomic Wt. : H=1, O=16, Cl=35.5, Pb=106, Zn=65, Na =23
C=12, P=31

Atomic No. : Cl=17, F=9, N=7, Al=13,
B=5, Cl=17



University of Technology
Department of Applied Sciences
Final-Year Exam 2016/2017



Subject : h.rights
Branch : APPLied chemistry
Examiner:Lecter/Mustafa r.daher

Class :firs year
Time :3 hours
Date : 31/5/2017

ملاحظة..الأجابة عن أربعة أسئلة فقط...

س١ الإسلام أعطى ضمانات عددها وأشرح واحدة منها بالتفصيل مع الشواهد والأمثلة؟ (٢٥)

س٢ تكلم عن الجمعية العامة للأمم المتحدة وما المقصود بالمجلس الاقتصادي والاجتماعي بالتفصيل؟ (٢٥)

س٣ أشرح العهدان الدوليان الخاصان بحقوق الانسان؟ (٢٥)

س٤ تكلم عن الاعلان العالمي للحقوق الانسان؟ (٢٥)

س٥ اشرح حقوق الانسان في الشرائع والديانات السماوية؟ (٢٥)

مع تمنياتي لكم بالنجاح



University of Technology
Department of Applied Sciences
FINAL Examination 2016/2017



Subject : General biology
Branch : chemistry
Examiner : Dr. Hiba Muneer Al-kafaji

Class : 1 st year
Time : 3 hours
Date : 2/4/2017

Answer **FOUR** questions only (each question 12.5 marks)

Q1: A\ What are characteristics of life?
B\ Define : plasmid – Capsual

Q2 : A\ What are roles of plasma membrane in Eukaryotes?
B\ Define and Draw Prokaryotes ?

Q3: what are differences between DNA and RNA?

Q4: A\ what are stages of Meiosis I?
B\ What are meaning of : Taxonomy – Evolution

Q5: What are applications of genetic engineering ?



University of Technology
Department of Applied Sciences
Final Examination
2016 -2017



Subject: Mathematics
Branch: Applied Chemistry
Examiner: L.Mayada Nazar

Class: 1st year
Time: 3 hours
Date: 15/6/2017

NOTES: Answer four questions only (all the questions are equal in degree)

Q1: A- Find the following integrals: (Choose two only)

1- $\int \tan^{-1}x \, dx$ 2- $\int \frac{dx}{(1+x^2)^{\frac{3}{2}}}$ 3- $\int \frac{x^3-3x^2+4x-2}{x+1} \, dx$

B- Prove that: $\sin^{-1}x + \cos^{-1}x = \frac{\pi}{2}$.

Q2: A- Find the area of the region enclosed between the curve $y = x^2$ and $y = x + 6$.

B- Solve the following equation: $3^{\log_3 5} + 5^{\log_5 7} = x$.

Q3: A- Find $\frac{dy}{dx}$ if: 1- $y^x = x^y$ 2- $x^3 + x \tan^{-1}y = e^x$

B- Solve for x if: $\left| \frac{3x+1}{2} \right| < 1$

Q4: A- Find the volume of the solid generated when the region under $y = x^2$ over the interval $[0, 1]$ and $y=0$ is revolved about x-axis.

B- Prove that: $\operatorname{sech}^2 x + \operatorname{tanh}^2 x = 1$

Q5: A- Find the following integrals: (choose two only)

1- $\int \frac{e^x}{\sqrt{1-e^{2x}}} \, dx$ 2- $\int \frac{dx}{x(1+\ln x)}$ 3- $\int \frac{e^{2x}-1}{e^{2x}+1} \, dx$

B- Find: $\lim_{x \rightarrow \infty} (1+x)^{\frac{1}{x}}$

Best Wishes