



الجامعة التكنولوجية
قسم العلوم التطبيقية
فرع الفيزياء التطبيقية
الامتحان النهائي
2014 - 2015



المور الأول

الفرع: الفيزياء التطبيقية
اسم المادة: كيمياء عامة
مدرس المادة: م. هديل صلاح منصور

المرحلة: الأولى
الزمن: 3 ساعات
التاريخ: 2015/6/14

ملاحظة: الأجوبة عن أربعة أسئلة فقط

(15 درجة)

س¹ / أ- عرف ما يأتي :

(1) القاعدة الثمانية (2) الفلزات (3) المجموعة الفعالة (4) العامل المختزل (5) عدد التاكسد

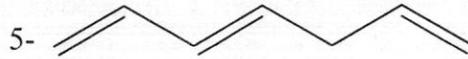
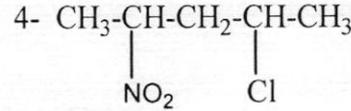
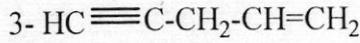
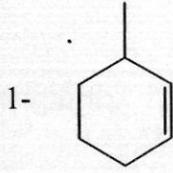
(10 درجات)

ب- مانوع الأصرة التي تربط بين المركبات التالية وضح ذلك :

1- NaCl , 2- HCl

(15 درجة)

س² / أ- أذكر أسماء المركبات التالية حسب نظام (IUPAC) للتسمية لكل مما يأتي :



(10 درجات)

ب- متى يحدث الأنفصام المتجانس والأنفصام غير المتجانس؟ (وضح ذلك)

س³ / أ- كم غراما من كبريتات البوتاسيوم (K_2SO_4) تلزم لتحضير (500 ml) من محلول تركيزه (0.3 M) ؟

(15 درجة)

(10 درجات)

ب- اذا كانت أعداد الكم الأربعة للألكترون الأخير لذرة عنصر ماهي :

$$n = 3 , l = 2 , m_l = -2 , m_s = +1/2$$

فما العدد الذري لهذا العنصر؟



س4 / أ- حضر بمعادلات كيميائية ما يأتي :

(15 درجة)

1- بيوتان من هاليد الألكيل

2- أستون من مثيل استيلين

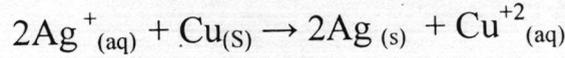
3- أثيلين من ايثانول

(10 درجات)

ب- ماهي أهمية المركبات العضوية ذات الروابط الثنائية والثلاثية؟

(25 درجة)

س5 / أحسب جهد الخلية E_{cell} عند درجة الحرارة $25^\circ C$ للخلية التي تفاعلها العام



إذا علمت ان تراكيز الأيونات $[Ag^+] = 0.01M$, $[Cu^{2+}] = 0.01M$

وجهد الأختزال القياس $E^\circ_{Ag^+/Ag} = + 0.80V$, $E^\circ_{Cu^{2+}/Cu} = + 0.34V$

علما" أن الأوزان الذرية : (O = 16, S = 32, K = 39)

الأعداد الذرية: (Cl = 17, Na = 11, H = 1)

مع تمنياتي لكم بالنجاح



University of Technology
Department of Applied Sciences
Final Examination 2014/2015



Subject : English Language
Division : Applied physics
Examiner : Prof. Dr. Mohammad

year: 1st year
Time : 3 hours
Date :

Note: Answer only Four questions. (Each 25 Marks)

Q1: Given the following two sentences;

- a. They agree to come with me.
- b. My father encourages me to depend on myself.

Change both of these sentences into the following tenses;

- 1- Present continuous.
- 2- Past continuous.
- 3- Present future.
- 4- Present perfect.
- 5- Past perfect.
- 6- Past perfect continuous.

Q2: Change these sentences into passive voice

- 1- The company employs 100 persons.
- 2- Everybody drinks water.
- 3- I will read the story.
- 4- I had finished my homework.
- 5- They are playing football game now.
- 6- We were writing homework yesterday.

Q3: Complete these sentences with **mustn't** or **don't** / **doesn't**.

- 1- I don't want anyone to know. You tell anyone.
- 2- He need to wear a suit to work but he usually does.
- 3- I can stay in bed tomorrow because I go to work.
- 4- Whatever you do, you touch that switch. It is very dangerous.

- 5- Don't make so much noise, we..... wake the baby.
- 6- You..... Forget what I told you. It is very important.

Q4: Write sentences begin with **“I wish.....”**

- 1- I don't know many people.
- 2- I live in a big city.
- 3- I have to work tomorrow.
- 4- I want to go to the party.
- 5- It is a nice weather.
- 6- I have a computer.

Q5: Write nearly 150 words about one of followings;

- a. Your 1st year in University of Technology.
- b. Parks and public gardens.

Good Luck



University of Technology
Department of Applied Sciences
Final Examination 2014/2015



Subject : Classical Mechanics
Branch : Physics
Examiner : L. Ammar M.J.

Class : 1 year
Time : 3 hours
Date : 2/6 /2015

Notes: Chose only five questions

Q1/ An object do free fall motion. It hits the ground after 4 seconds. Calculate the velocity of the object after 3 seconds and before it hits the ground. What can be the height it is thrown?

Q2/ A child pull a 30-kg box across a floor (the coefficient of friction is 0.3) with a rope. The rope makes an angle of 22° above the horizontal. As a result of the pull on the rope, the box accelerates at 0.20 m/s^2 across the floor. (a) What is the value of the tension in the rope? (b) What is the apparent weight of the box as it slides on the floor?

Q3/ Estimate the maximum distance a long jumper can jump if his initial speed 30 m/s .

Q4/ A sports car accelerate from rest to 95 km/h in 6.2 s .
a) What is its average acceleration in m/s^2 ?
b) If the acceleration is zero, is the velocity zero, as well?
c) If the velocity is zero, is the acceleration zero, as well?

Q5/ Three vectors are given by $A=6i$, $B=9j$, and $C=(-3i+4j)$. (a) Find the magnitude and direction of the resultant vector. (b) What vector must be added to these to make the resultant vector zero?

Q6/ You stretch a spring 10 cm and must apply a 10 N force to hold the spring in place as shown in figure(1). What is the spring constant, and how much work did you do on the spring to stretch it?

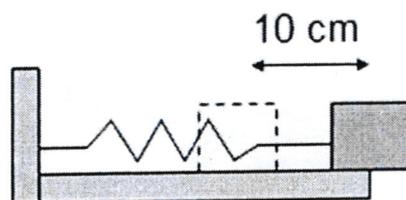


Fig.(1)

Good Luck

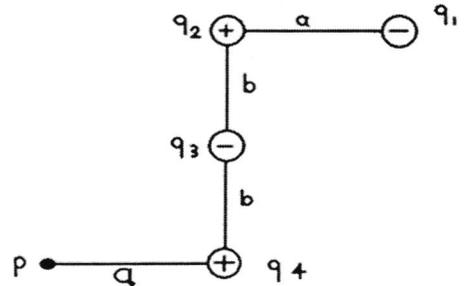


Subject: الكهربية والمغناطيسية
Branch: الفيزياء التطبيقية
Examiner: أ.م. بان خالد

Class: الاولى
Time: ثلاث ساعات
Date:

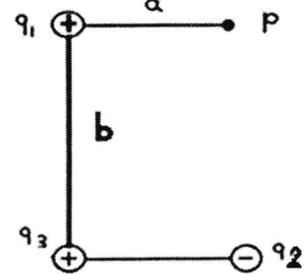
NOTE / Answer Four Question

Q1/ calculate the value of the electric Potential and the Potential energy at point charge p ($1\mu\text{C}$) when $a = 2 \text{ cm}$, $b = 1 \text{ cm}$, $-q = 4 \text{ C}$, $+q = 2\text{C}$?



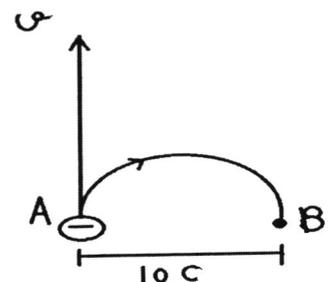
Q2/ (a) A long, straight metal rod has a radius of 5cm and a charge per unit length of 30nC/m . Find the electric field at the following distances from the axis of the rod: (1) 3cm, (2) 5cm, (3) 10cm, (b) How would your answers change if the metal rod were hollow, (C) If the length of the metal rod is 1 cm What the electric flux through it?

Q3/ Find the electric field at point p in figure due to the charges shown when $a = 1 \text{ cm}$, $b = 2 \text{ cm}$, $-q = 2 \text{ C}$, $+q = 4\text{C}$?



Q4/ An series RLC circuit has the following values $R= 250 \Omega$, $w=377\text{S}^{-1}$, $V_m= 150 \text{ V}$, the file spiral a length of 1 m and it distance is 6 m^2 And a number of his death in 10^3 roll, space both Tablets OF capacitor 10 m^2 and the distance between the revelation 1nm, Find 1- Reluctance 2- The greatest current that passes in the circuit 3- Great Value for the voltage at both ends of each element ?

Q5/ an electron at point A in figure below has a speed v of 10^7 m/s find (a) the magnitude of the magnetic field that will cause the electron to follow the semi circular path from A to B, (b) the time required for the electron to move from A to B, (c) the angular velocity, (d) the frequency?



Good Luck



University of Technology
Department of Applied Sciences
Final Examination 2014/2015

إدارة تقييم



Subject : تفاضل و تكامل
Division : الأولى
Examiner : أ.م.مها عبد الوهاب

Final (1)
Time : 3 hours
Date :

Answer (seven) Questions

1 - a) Find the domain and rang of the functions $y = \sqrt{1 + x^2}$, $y = \sin^{-1} x$ and graph them. (10D)

b) Solve for y $3 \ln(y^2 - 1) - 2 \ln(y - 1) + 2 \ln(y + 1) = \ln 5$.

2- a) If $y = 2x \sin^{-1} x + \sqrt{1 - x^2}$ provte that $y''(1 - x^2) + 2x y' = y$.

b) Find the derivative of $y = \cos^{-1}(x^x)$. (10D)

3 - Evaluate a) $\lim_{y \rightarrow \infty} \frac{e^y}{y}$, b) $\lim_{x \rightarrow 0} \frac{1 - \cos x}{x^2}$. (10D)

4 - Evaluate a) $\int \frac{1}{x - x^3} dx$ b) $\int x \sin x dx$ (10D)

5- a) Find the distance travel by the body p(x,y) from the time $t_1 = 0$ to $t_2 = 3$ by the poztion at time t $y = 1 + t^2$, $x = t^3$. (10D)

b) Find the volume generated by rotated the bounded area by $y = \sqrt{x}$, $y = 2$ about y-axis .

6-a) Find the complex numberz if $Re(z + 1) = 3$ and $IM(z + i) = 3$ (10D)

b) Solve the equation $z^3 - i = 1$.

7- Write the equations of limacon and graph one (10D)

8- Find the area inside the circle $r=2$ and out side $r=2-2\cos \theta$. (10D)



University of Technology
Department of Applied Sciences
Final Examination 2014/2015



Subject : computer
Division :mathematics+biotechnology+physics
Examiner : Rasha Jalal

year:
Time : 3 hours
Date : 27/5/2015

Answer Five Questions

Q1) What are the purpose of the following ? (choose 5) (12M)

- | | |
|-----------------------|---------------------------|
| 1) cascade windows . | 2) find in word . |
| 3) clear formatting . | 4) Grow font . |
| 5) line spacing . | 6) show windows stacked . |

Q2) Write the differences between the following ? (12M)

- 1) save , save as . 2) print , print preview . 3) Hide slide , Un Hide slide.

Q3) What are the main steps to do the following ? (choose 5) (12M)

- 1) To open the word page .
- 2) Background of desktop .
- 3) Bold font in word page .
- 4) Insert column in excel.
- 5) Minimize function in excel.
- 6) Add color to worksheet .

Q4) Explain the menu that appear when you right – click on empty area of the desktop ? (12M)

Q5) Write two methods to obtain the following ? (12M)

- 1) taskbar and start menu properties.
- 2) end presentation .
- 3) header & footer in excel.

Q6) Explain the work of the mouse button ? (12M)



University of Technology
Department of Applied Sciences
Final semester 2014/2015



Subject : Auto Cad
Branch : applied physics

Class :1st
Time :three hours

Examiner: A.L. Atheer Ibrahim Abdali

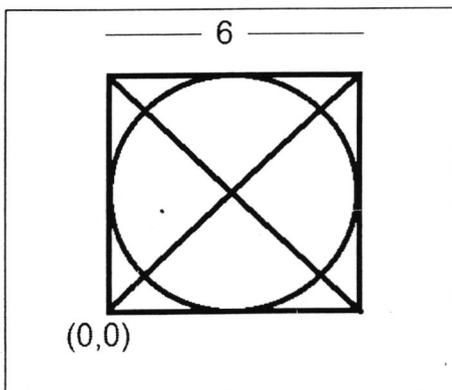
Date :

Note: answer four questions only

Q1: Draw the resulting shape of the following steps with pointing the dimensional and coordinates on the drawing.

L enter , (2) (0,0) enter , (3) (8,0) enter ,(4) (8,6) enter , (5) (0,6) enter, (6) (0,0) enter (7) C enter , (8) (2,3) enter , (9) 2 enter , (10) C enter (11) (6,3) enter , (12) 2 enter (13) Esc

Q2: What are the steps that must be followed to draw the following shape?

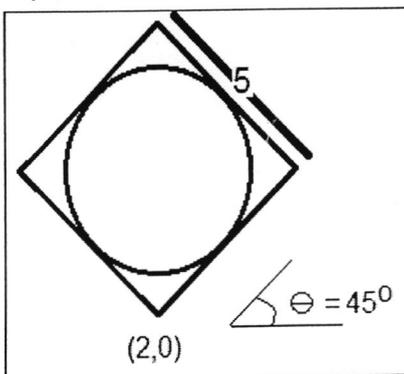


Q3: Answer either a or b

Draw the resulting shape of the following steps with pointing the dimensional and coordinates on the drawing.

(1) L enter ,(2) (0,0) enter (3) @5<0 enter , (4) @5<90 enter,(5) @5<180 enter, (6) @5<270 enter, (7) C enter , (8) (5,5) enter , (9) 1 enter , (10) Esc .

Q4: What are the steps that must be followed to draw the following shape?



Q5: Draw the resulting shape of the following steps with pointing the dimensional and coordinates on the drawing.

1. C Enter 2. (4,4) enter 3. 5 enter 4. 3 enter 5. L enter 6. (4,4) enter 7. @2.5>45 enter 8. L enter 9. @2.5>135 enter 10. Esc

Good Luck



الجامعة التكنولوجية
قسم العلوم التطبيقية
الامتحان النهائي للعام الدراسي
2014-2015
الدور



المرحلة : الاولى
الفرع : الفيزياء التطبيقية والتقانات
مدرس المادة : شيرزاد أحمد

المادة : حقوق الانسان
الوقت: 3 ساعات
التاريخ :

ملاحظة : الاجابة عن اربعة اسئلة فقط. علماً ان توزيع الدرجات بالتساوي

س1/ أشرح بالتفصيل حقوق الطفل موضحاً " ذلك بالاتفاقيات الدولية.

س2/ تكلم ماتعرفة عن حقوق الانسان في حضارات العراق القديمة

س3/ أشرح التطور التاريخي للديمقراطية وماهي اشكالها.

س4/ ماهي مصادر حقوق الانسان عددها ثم اشرح واحدة منها ؟

س5/ تكلم ماتعرفة عن ضمانات حقوق الانسان في الاسلام

مع التمنيات بالنجاح