المستوى: الاول		امتحان دور مايو
المادة: تفاضل وتكامل (ر١١٢)	كلية العلوم – قسم الرياضيات	الزمن: ساعتين
الدرجة الكلية: ٨٠ درجة		التاريخ: ٢٠١٣/٥/٢٥

البرامج: كيمياء – كيمياء حيوى – حيوان وكيمياء – جيوفيزياء – جيولوجيا – ميكروبيولوجى – علوم بيئة – كيمياء نبات

<u>أجب على الأسئلة الآتية :</u>

<u>السؤال الاول :</u>

(أ) أوجد مجال ومدي الدوال الأتية ثم حدد ما اذا كانت هذه الدوال زوجية ام فردية   (١٠ درجات)

$$\text{(i)} \quad f(x) = x(x - 5) \qquad\qquad \text{(ii)} \quad f(x) = \sqrt{4 - x^2}$$

(ب) بين أن الدالة $f(x) = \dfrac{x - 2}{x + 1}, \quad x \neq -1$ لها معكوس f^{-1} وأوجده

ثم أوجد $f \circ f^{-1}$ ، $f^{-1} \circ f$.   (١٠ درجات)

<u>السؤال الثانى :</u>

أ) أوجد النهايات الاتية   (٩ درجات)

$$\text{i)} \lim_{x \to 64} \frac{\sqrt{x} - 8}{\sqrt[3]{x} - 4} \qquad \text{ii)} \lim_{x \to 1} \frac{1 + \cos \pi x}{x^2 - 2x + 1} \qquad \text{iii)} \lim_{x \to 0} (1 + x)^{1/x}$$

ب) عرف أتصال الدالة عند نقطة؟   (٢ درجة)

(ج) أبحث أتصال الدالة   (٩ درجات)

$$f(x) = \begin{cases} \dfrac{x^2 - 4}{x - 2} & \text{if } x \neq -2 \\ 5 & \text{if } x = -2 \end{cases}$$

<u>السؤال الثالث:</u>

أ) أوجد المشتقة الاولي y' للدوال الأتية: (١٢ درجة)

$$\text{(i)} \quad y = \sin^3(2x + 1) \qquad\qquad \text{(ii)} \quad y = e^{\tan\left(\sqrt{3x - 4}\right)}$$

$$\text{(iii)} \quad y = (x)^{\sin x} \qquad\qquad \text{(iv)} \quad y = (\cos x)^{-1} + \cos^{-1} x$$

ب) أوجد قيمة التكاملات الأتية   (٨ درجات)

$$\text{(i)} \quad \int \sin^2 x \cos^3 x \, dx \qquad\qquad \text{(ii)} \quad \int \frac{2}{x^2 - 1} \, dx$$

<u>السؤال الرابع:</u>

أ) أوجد معادلة المماس والعمودي للمنحني $x^2 + 3xy + y^2 - 5 = 0$ عند النقطه $(1,1)$.   (٨ درجات)

ب) أوجد قيمة التكاملات الآتية:

$$\text{i)} \int \frac{dx}{\sqrt{x}(3 + \sqrt{x})} \qquad\qquad \text{ii)} \int \sin x \, e^x \, dx$$

$$\text{iii)} \int (\tan x + \sec x)^2 \, dx \qquad\qquad \text{iv)} \int_0^2 x \sqrt{4 - x^2} \, dx$$

      (١٢ درجة)

مع أطيب التمنيات بالتوفيق   أسرة التدريس

Mansoura University Faculty of Science Physics Department		جامعة المنصورة كلية العلوم قسم الفيزياء

Second Term Examination June 2013

Academic Level: First Level

Time: 2 Hours

Subject: Electricity & Magnetism &Optics

Full Mark: 60 Marks

Program: Geo&Chem Zool&,Bio
Chem,Bot,Enviro,Chem

Date: 1st June 2013

Courses: Physics 102

## Answer the Following Questions

[1] a- Define the following terms: i) Electrical conductors. ii) Coulomb's law.
iii) Gaussian surface. iv) The capacitor. v) Dielectrics.
Vi) Magnetic force.   **[6] Marks**

b- Explain the differences between Linear, Surface, and Volume
Charge Densities, and give examples of where each
would be used.   **[3] Marks**

c- Three point charges are located at the corners of an equilateral
triangle as shown in Figure. Calculate ,**i)** the resultant electric force
on the 7.00 μC charge, and **ii)** The electric potential energy
of the configuration. $K_e= 9x10^9$ **N.m^2/C^2**   **[6] Marks**
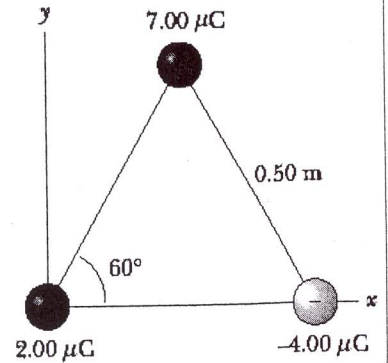
[2] a- A solid, insulating sphere of radius *a* has a uniform charge density ρ
and a total charge **Q**. Concentric with this sphere is an uncharged,
conducting hollow sphere whose inner and outer radii are *b* and *c*,
as shown in Figure. (a) Find the magnitude of the electric field in
the regions *r < a, a < r < b, b < r < c,* and *r > c*. (b) Determine
the induced charge per unit area on the inner and outer
surfaces of the hollow sphere.   **[6] Marks**
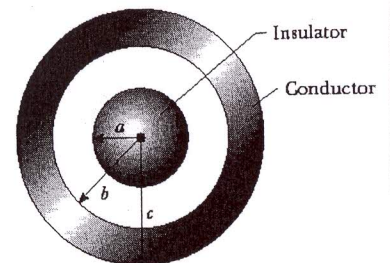
b- List several similarities and differences in electric and magnetic forces.   **[3] Marks**

c- Two capacitors, C_1 = 5 μF and C_2 = 12 μF, are connected in parallel, and the resulting
combination is connected to a 9.00-V battery. (a) What is the equivalent capacitance of the
combination? What are (b) the potential difference across each capacitor and (c) the charge
stored on each capacitor and (d) the energy stored in each capacitor?   **[6] Marks**

[3] a-. Determine the velocity, radius of path, and the periodic time for a proton moves freely with a
constant velocity **v** perpendicular to a constant magnetic field **B**.   **[7] Marks**

b- Two long, parallel conductors, separated by 10 cm, carry currents in the same direction. The first
wire carries current I_1 = 5 A, and the second carries I_2 = 8 A. (a) What is the magnitude and
direction of the magnetic field created by I_1 at the location of I_2? (b) What is the force per unit
length exerted by I_1 on I_2? (c) What is the magnitude and direction of the magnetic field created
by I_2 at the location of I_1? μ_o =4π x 10^{-7} **T.m /A**   **[8] Marks**

[4] a- Define the following terms: i) Wave front. ii) Law of reflection. iii) Index of refraction.
iv) Critical angle.   **[4] Marks**
b- Use Huygens's principle to drive the Snell's law of refraction   **[5] Marks**

c- The wavelength of red helium–neon laser light in air is 632.8 nm. (a) What is its frequency? (b)
What is its wavelength in glass that has an index of refraction of 1.50? (c) What is its speed in the
glass? **C = 3 x 10^8 m/s , n$_{air}$= 1**   **[6] Marks**

Examiners: 1-Dr. Nabil Kinawy 2- Dr. Maysa Ismail 3- Dr. Nagah Elsheshtawy 4- Dr. Hany Kamal

Mansoura University		**Second Semester**
Faculty of Science		**Year: first level**
Chemistry Department		**Time allowed: 2 hours**
Subject: Physical chemistry		**Full Mark: 60 Marks**
Course code:141 chem		**Date: June 2013**

Answer 10 points from each part (two marks for each point):

Part one: Complete the following:

1-The root mean square velocity for a gas U_{rms} =--------------------

2-The volume occupied by 32.06 g Ne gas at 5°C and 630 mmHg is ------- (atomic weight of Ne = 20.18 g)

3-The corrected equation of Van Der Waals is ----------------------------

4-The density of acetone C_3H_6O vapor at 1 atm and 400K is --------g/l (C=12,H=1,O=16)

5- Heat change of a chemical reaction depends only on the ----------and final stages only.

6-The average bond energy for C–H , C–C and C=O are +413 , +347 and +805 KJ mol^{-1} respectively the amount of heat released when one mole of compound containing 3 C–C bonds , 8 C–H bonds and one C=O bond is --------KJmole^{-1}

7- For a reversible gaseous reaction $K_P = K_C$ if Δn =… …… … … … … … ….

8- For the reaction $CO\ (g) + 2H_2\ (g) \leftrightarrow CH_3OH\ (g)$ if the equilibrium concentrations are [CO] = 0.091M, [H_2] = 0.082 M and [CH_3OH] = 0.0089M.The equilibrium constant equals to ------- l^2 mole^{-2}

9-Ion product of water K_w =------------

10-The pOH for 10^{-2}M HCl is -----------.

11-The pH for 0.1M solution of ammonia in water is ----------. (k_b= 1.8 x 10^{-5})

Part two: Put (√) or (X)

1- At constant pressure, the volume of a given quantity of a gas is directly proportional with absolute temperature ( )

2- According to the kinetic theory of gases: The actual volume of the individual molecules is negligible in comparison to the volume of the container ( )

3- Adding a non-volatile solute to a solvent causes no change in the vapor Pressure ( )

4- Regarding the phenomenon of osmosis, particles of the solvent moves through simi membrane from solution of high concentration to the low one ( )

1

5- For the reversible reaction, high numerical value of K_C means Low product concentration is formed ( )

6- For the reaction at equilibrium: $I_{2(g)} + H_{2(g)} \rightleftharpoons 2HI$ increase of pressure has no effect on the equilibrium position ( )

7- For the reaction at equilibrium: $3 Fe_{(s)} + 4 H_2O_{(g)} \rightleftharpoons Fe_3O_{4(s)} + 4 H_{2(g)}$

$K_P < K_C$ ( )

8- Heat of formation has either +ve or -ve sign ( )

9- The standard enthalpy change of a reaction: $\Sigma\Delta H^{\circ}_{reactant} - \Sigma\Delta H^{\circ}_{product}$ ( )

10- The value of the universal gas constant is $R = 8.314$ l atm K^{-1} mole^{-1} ( )

11- The compressibility factor Z for an ideal gas is such $Z < 1$ ( )

Part three: Choose the correct answer:

(1) Molality of a solution is:

   (a) The number of moles solute in a liter of solution ( )

   (b) The number of equivalent solute in a liter of solution ( )

   (c) The number of moles solute in a 1000 gm of solvent ( )

   (d) The number of equivalent solute in a 1000 gm of solvent ( )

(2) If the reaction quotient Q is such that $Q < K_C$, this means that the:

  (a) Reaction shifts to the left ( )   (b) Reaction shifts to the right ( )

  (c) Reaction attained equilibrium ( )   (d) has no significance ( )

(3) In a chemical equilibrium equation, the activity (concentration) of a liquid or solid is:

   (a) > 1 ( )   (b) < 1 ( )   (c) equal 1 ( )   (d) equal zero ( )

(4) 120 g of an ideal gas of molecular weight 40 g mole^{-1} is confined to a volume of 20 L at 400 K. Using, $R = 0.0821$ L atm K^{-1} mole^{-1}, the pressure of the gas is:

(a) 4.90 atm (b) 5.02 atm (c) 4.92 atm (d) 4.96 atm

(5) Which of the following statements is correct about heat of combustion?

(a) It may be exothermic in some cases and endothermic in other cases

(b) It is always an exothermic reaction

(c) It is applicable to gaseous substances only

(d) Its value does not change with temperature.

(6) When attraction between A – B is more than that between A – A and B – B the Solution will show…………… deviation from Raoult's law:

(a) Positive (b) Negative (c)   No   (d)   cannot be predicted

(7) What will be the partial pressure of H_2 in a flask containing, 2gm of H_2, 14 gm of N_2 ,and 16gm of O_2: (H=1, N=14, O=16)

(a)   1 / 2 the total pressure $\qquad$ (b)   1/ 3 the total pressure

(c)   1 / 4 the total pressure $\qquad$ (d)   1/16 the total pressure

(8) What happens when few drops of H_2SO_4 are added to water?

(a) OH^- Concentration decreases $\qquad$ (b) OH^- concentration increases

(c)   Ionic product increases $\qquad$ (d)   ionic product decreases

(9) The hydrogen ion concentration of 0.001 N NaOH solutions is:

(a) $1 \times 10^{-11} M$ (b) $1 \times 10^{-13} M$ (c) $1 \times 10^{-12} M$ (d) $1 \times 10^{-14} M$

(10) Given the bond energies of $N \equiv N$, H — H, and N — H bonds are 945, 436 and 391 KJmol^{-1} respectively, the enthalpy of the reaction $N_2(g)+3H_2(g) \rightarrow 2NH_3(g)$ is:

(a) -93 kJ (b) 102 kJ (c)   90 kJ (d)   105 kJ

(11) If 0.5 g of a solute is dissolved in 0.1gm of camphor, $(K_f =40)$, a decrease in freezing point is 4°C. The molecular weight of the solute is

(a)   500 gm (b)   50 gm (c)   5000 gm (d)   200 gm

برنامج: رياضيات، إحصاء و علوم الحاسب فيزياء حيوي- فيزياء جيوفيزياء

السؤال الأول: [20 درجة]

١. أكمل هذه العبارة: جسيم يتحرك على محيط دائرة نصف قطرها $3cm$ و سرعته الزاوية $4rad/sec$ فإن

  i. ....

  ii. سرعته ....

مركبة عجلاته في اتجاه نصف القطر الداخلي هي .... [4 درجة]

٢. قذفت نقطة مادية تتصل بخيط غير من طوله a ووثبت طرفه الآخر من نقطة ثابتة بسرعة قدرها $\sqrt{3ag}$ في الاتجاه الأفقي عندما كان الخيط رأسيا. أوجد لزن يصنع الخيط في الخط رأسيا و أثبت أن أقصى ارتفاع ع يصل إليه المقذوف يكفي $\dfrac{40}{27}a$ [16 درجة]

السؤال الثاني: [20 درجة]

١. قضيب خفيف طوله $6ft$ يستند في وضع أفقي على حاملين عند طرفيه علق فيه ثلاث أحمال عند طرفيه عل و على بعد $2ft, 4ft$ على التوالي من أحد طرفيه. احسب القوة القاصة والعزم الحلي للأجزاء المختلفة على طول القضيب $f, 4f, 2f$ على الترتيب من أحد طرفيه ... [10 درجة]

٢. إطار يتكون من أربع قضبان متساوية و متماثلة الطول الإنحناء لسهل عند نهايتها. علق من أحد أركانه و حفظ على شكله بواسطة خيط مرن طوله الطبيعي a و معامل مرونته λ و مربوط في ركنه العلوي و السفلي أوجد ميل اي من القضبان على الراسي في حالة الإتزان ثم أوجد معامل مرونة الخيط. [10 درجة]

السؤال الثالث: [20 درجة]

١. إذا كانت سرعة جسيم على خط مستقيم بدلالة بعده عن نقطة ثابتة على الخط تعطي بالعلاقة
$$v^2 = \sqrt{\dfrac{a^2 - x^2}{x^2}}$$
ثابت أن القوة المؤثرة هي قوة مقاومة تتناسب مع مكعب الإزاحة x [10 درجة]

٢. قذف جسيم رأسيا إلى أعلى بسرعة $v_0 = \lambda\sqrt{\dfrac{g}{\mu}}$ في وسط مقاومته لوحدة الكتل μv^2 أثبت أن أقصى ارتفاع ع يصل إليه الجسم يكون
$$\dfrac{1}{2\mu}\ln\left(1+\lambda^2\right)$$
[10 درجة]

السؤال الرابع: [20 درجة]

١. استنتج معادلة حركة جسيم متغير الكتلة موضحا صورة القوة الناشئة نتيجة تغير الكتلة

٢. أعد صاروخ للإنطلاق رأسيا إلى أعلى و كانت كتلة الكلية $2m$ منها m من الوقود فإذا كان الصاروخ يقذف $\dfrac{m}{40}$ كل ثانية إلى أسفل بسرعة نسبية $65g$ فأثبت أن الصاروخ [8 درجة]

ينطلق لا بعد 15 ثانية من اشتعال الوقود وأن أقصى سرعة يكتسبها هي
$$5g\left[13\ln\left(\dfrac{13}{8}\right)-5\right]$$
ثم أوجد المسافة التي يتحركها الصاروخ بعد نفاذ الوقود حتى يسكن. [12 درجة]

مع أطيب التمنيات بالتوفيق و النجاح

أ.د/مجدي الياس - د/عادل عبد العزيز
د/الشحات عبد العزيز

إمتحان: الفرقة الأولى جيولوجيا		جامعة المنصورة
وجيوفيزياء		كلية العلوم
المستوى: الأول		قسم الجيولوجيا
كود المادة: ج ١٠٢		تاريخ الإمتحان: ٢٠١٣/٦/١٨
دور: مايو ٢٠١٣		الدرجة الكلية: ٦٠
المادة: بلورات ومعادن		
الزمن: ساعتان		

أولا : البلورات (٣٠ درجه)

السؤال الأول: (٢١ درجه كل فقرة ٧ درجات)

فى الفصائل الأتية:

١- فصيلة الرباعى   ٢- فصيلة المعينى القائم   ٣- فصيلة أحادى الميل

أجب عما يأتى

أ- إسم الشكل البلورى للنظام كامل التماثل مع الرسم العادى له والمسقط الإستريوجرافى.

ب- إذكر عناصر التماثل للنظام كامل التماثل وقانون التماثل

ج- الأشكال البلورية فى النظام كامل التماثل ومعاملات ميلر لها

السؤال الثانى: إكتب مع الرسم إن أمكن عن الأتى: (٩ درجات كل فقرة ٣ درجات)

١- التجمعات البلورية

٢- ظاهرة النصف شكلية والأشكال المتعاكسة فى البلورات

٣- الزوايا بين الوجهية وطرق قياسها فى البلورة

ثانيا: المعادن (٣٠ درجة)

السؤال الثالث: أكمل الجمل الأتية   (١٣,٥ درجة)

١- يوجد حوالى .... معدن شائع وأكثر من .... معدن قليل الوجود فى الطبيعة.

٢- من المعادن الماجماتية عالية الحرارة .... ، .... ، ....

٣- عندما تتخلل المعادن الأرضية ذات الأصل الجوى الصخور وترتفع درجة حرارتها ثم تخرج إلى السطح متفجرة تعرف هذه الظاهرة بـ .... وتتكون كيميائيا من ....

٤- يمثل معدن سميثونايت ظاهرة .... التى عن طريقها تتكون المعادن بواسطة ....

٥- من نتاج تفاعل المواد الطيارة المجماتية مع صخور المنطقة تكون معادن .... ، .... ، ....

٦- من أشكال تواجد المعادن فى المناطق الساحلية .... مثل .... ، ....

٧- يختلف الذهب عن المعادن الشبيهة له فى .... ، .... ، ....

٨- تتكون المعادن من المحاليل عن طريق .... ، .... ، ....

٩- من الأمثله الهامة لخاصية الكهرباء الضغطية فى المعادن معدن .... أما الكهرباء الحرارية فيمثلها معدن ....

١٠- إنجذاب المعادن أو تنافره مع المغناطيس تسمى بخاصيتى .... ، .... على الترتيب

السؤال الرابع: أجب عما يلى   (١٦,٥ درجة)

أ- ضع علامة (√) أو (X) أمام العبارات التالية وصحح الخطأ منها: (١٤ درجات كل فقرة ٢ درجات)

١- تعتبر ظواهر الإستلاكتيت والإستلاجميت من الصخور النارية التى تكونت بفعل الرياح.

٢- تنقسم العروق الحاملة للمعادن من حيث أهميتها إلى عروق عالية الحرارة ومنخفضة الحرارة.

٣- ظاهرة الترافرتين ماهى إلا تعبير حى عن حدوث البراكين.

٤- يتكون معدن الهاليت من بخر السائل الذى يعمل كمذيب قبل غيره من المعادن المنفصله.

٥- يظهر معدن الذهب فى الطبيعة على هيئات كثيرة ليس منها رواسب التجمعات.

٦- يعتبر الإليكتروم إحدى معادن الذهب عندما يحتوى على النحاس.

٧- يتكون معدن الكاستريت فى اخر مرحلة من مراحل تبلور المجما الغنية بالمواد الطيارة عن طريق التحول الغازى.

ب- إذا أعطيت كلا من الأوزان المئوية والأوزان الجزئية للأكاسيد الأتية ، إحسب القانون الكيميائى لها فى أبسط صورة ثم إستنتج إسم المعدن   (٢,٥ درجة)

كا	٤٤,٣٢ ٪	١,٥٦
كب٢	٦١,٤٦ ٪	٠٦,٨٠
يد٢ أ	٧٤,٢٠ ٪	٠,١٨

لجنة الإمتحان والتصحيح*:

ـ أ.د. محمود إبراهيم الشربينى*   - أ.د. عادل محمد جنيدى*

Final Examination

الإمتحان في أربع ورقات

Part One: Reading Comprehension: (30 Marks)
Read the following passage and then answer the questions that follow:

The word "science" probably brings to mind many different pictures: a fat textbook, white lab coats and microscopes, an astronomer peering through a telescope, a naturalist in the rainforest, Einstein's equations scribbled on a chalkboard, the launch of the space shuttle, bubbling beakers. All of those images reflect some aspect of science, but none of them provides a picture.

To understand what science is, just look around you. What do you see? Perhaps, your hand on the mouse, a computer screen, papers, ballpoint pens, the family cat, the sun shining through the window... . Science is, in one sense, our knowledge of all that - all the stuff that is in the universe: from the tiniest subatomic particles in a single atom of the metal in your computer's circuits, to the nuclear reactions that formed the immense ball of gas that is in our Sun, to the complex chemical interactions and electrical fluctuations within your own body that allow you to read and understand these words. But just as importantly, science is also a reliable process by which we learn about all that stuff in the universe. However, science is different from many other ways of learning because of the way it is done. It relies on testing ideas with evidence gathered from the natural world.

Science helps satisfy the natural curiosity with which we are all born: why is the sky blue, how did the leopard get its spots, what is a solar eclipse? With science, we can answer such questions without resorting to magical explanations. And science can lead to technological advances, as well as helping us learn about enormously important and useful topics, such as our health, the environment, and natural hazards. Without science, the modern world would not be modern at all, and we still have much to learn. Millions of scientists all over the world are working to solve different parts of the puzzle of how the universe works. They are peering into its nooks and crannies, deploying their microscopes, telescopes, and other tools to unravel its secrets.

Science is complex and multi-faceted. It focuses exclusively on the natural world, and does not deal with supernatural explanations. Science is a way of learning about what is in the natural world, how it works, and how that natural world got to be the way it is. It is not simply a collection of facts; rather it is a path to understanding. **"In the long run, the greatest gift of science may be in teaching us, in ways no other human endeavor has been able, something about our cosmic context, about where, when and who we are".** *Astronomer Carl Sagan, in The Demon-haunted World, 1996*

Question 1: Answer the following questions:

a- How can we understand science?

b- What is the relation between your body and science?

c- On which base does science depend?

d- What do you think the world would be without science?

e- Explain the work of scientists.

Question 2: Decide if the following statements are true (T) or false (F) according to the information in the passage. Correct the false one (s):

a- Different pictures in our minds bring the full image of science.

b- Science relies on testing ideas with evidence gathered from the natural underworld.

c- Science can help us in solving equations without resorting to magic powers.

d- Science is complex and multi-faceted focusing on the natural world.

e- The only gift of science is teaching us everything about our cosmic context.

Question 3: Find the opposite of each of the following words from the passage:

a- **alike**   paragraph (1)   d- **regression**   paragraph (3)

b- **ignorance**   paragraph (2)   e- **unrealities**   paragraph (4)

c- **stabilizations**   paragraph (2)

Question 4: Find the meanings of the following words from the passage:

a- **staring**   paragraph (1)   d- **inquisitiveness**   paragraph (3)

b- **scrawled**   paragraph (1)   e- **attempt**   paragraph (4)

c- **circles**   paragraph (2)

Part Two: Grammar & Structure Skills: (30 Marks)

Question 1: Read the following pairs of sentences to find out the difference in meaning. Then write down the difference in your own words.

a- 1) We must be quick, we've only got a little time.

2) Let's go and have a drink, we've got a little time before the train leaves.

b- 1) She's lucky. She has few problems.

2) Things are not going well for her.   She has a few problems.

Question 2: Choose the most suitable answer from brackets to complete the meaning of each sentence:

a- My job is boring sometimes.   I'd like to do something........................

(less interesting - more interesting - most interesting)

...d the information quickly, so please let me know ....possible.

(the same as - as long as - as soon as)

c- .... our all cheerful plans, a lot of things went wrong.

(Despite - In spite of - though)

d- I'm fed up with waiting.   I'm not waiting ....

(any longer - any better - anywhere)

e- Hana is very busy these days, she has ....free time

(little - few - a little)

Question 3: Read the situations below, use either the comparative (-er or more) or the superlative + ---- ever:

a- You decided to give up your job. Now you think this was a bad mistake.

b- We were very busy at work today. We are not usually as busy as that.

c- You have just been to the library. You read a book which was boring.

d- Ahmad and I went for a run. I ran ten kilometers. Ahmad stopped after six kilometers.

e- You've answered a question. It's very difficult.

Question 4: Explain the meaning of the following sentences in your own words:

a- Let me know if you hear any further news.

b- The building isn't very nice. I like the garden though.

c- Hanya didn't do as well in the exam as she hoped.

d- I studied less than you did.

e- What time shall we start? 'the sooner the better'.

Question 5: Use the connectives in brackets to join the sentences below:

a- I'm 30 years old. Don't talk to me as a child.   (as if)

b- I studied hard. I failed.   (despite)

c- I was very tired. I managed to finish the project.   (although)

Part Three: Writing Skills: (30 Marks)

Question 1: Answer the following questions:

a- What are the five basic patterns that catch a reader's interest while reading an introductory paragraph?

b- What are the three main parts of a paragraph, mention the function of each part?

Question 2: Punctuate the following paragraph:

in game theory the nash equilibrium is a solution concept of a non-cooperative game involving two or more players each player is assumed to know the equilibrium strategies of the other players no player has anything to gain by changing only his own strategy if each player has chosen a strategy and no player can benefit by changing strategies while the other players keep theirs unchanged

Question 3: Write on **ONE** of the following:

a- A **classification** paragraph on different uses of social networking sites.

b- A **compare and contrast** paragraph on physics and math.

c- A **descriptive** paragraph on clean environment.

d- A **choice** paragraph on mental games or physical sports.

Best Wishes