مقرر / حقوق الإنسان
كود المقرر / ع ١٠٣
زمن الإمتحان / ساعتان
المستوى الأول (جميع البرامج)

كلية العلوم
جامعة المنصورة
التاريخ ٢٠١٥/١٢/٣٠

أجب على الأسئلة الآتية:-

السؤال الأول:- ضع علامة صح أو علامة خطا بدون تعليل

١-صدر الإعلان العالمي لحقوق الإنسان في العاشر من ديسمبر عام ١٩٥٨.

٢-يعتبر رضاء المجني عليه سبباً لإباحة الفعل في القتل بدافع الرحمة .

٣-تعد حرية الرأي هي الحرية الأم بالنسبة لطائفة الحريات المعنوية .

٤-يعد اتخاذ الدولة ديناً رسمياً لها عائقاً أمام الحرية الدينية .

٥-حق التقاضي يمكن الشخص من اقتضاء حقه عن طريق العدالة الخاصة .

السؤال الثاني:- اكتب في موضوع واحد فقط مما يلي :-

١-تكلم عن حق التقاضي مبينا ماهيته ومصادره والضمانات اللازمة له.

٢-تكلم عن حق الإنسان في الحياة في الإسلام .

Mansoura University
Faculty of Science
Chemistry Department
Course: Chem. (121)

First Level
Date: **5/1/2016**
Time Allowed: **2** hours
Full Mark: **60** Marks

******** *Answer the following questions* ********

[Q1] Put the Mark (√) for the right sentence and (X) for the wrong with writing its correction: *(15 marks)*

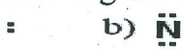
1. The Cl-P-Cl bond angles in **PCl_5** are 90° and 120°. ($_{15}P$, $_{17}Cl$)
2. The maximum number of electrons in each of subshell is $(4\ell + 1)$.
3. The first ionization energy of **P atom** is less than that of **S atom**. ($_{15}P$, $_{16}S$)
4. In the periodic table, the **O** element is the highest electronegative and **Ba** is the least. ($_{8}O$, $_{56}Ba$)
5. **$BeCl_2$** is a linear molecule whereas **H_2O** has bent molecular geometry. ($_{4}Be$, $_{8}O$, $_{17}Cl$)
6. The polarity of the covalent bond increases as follow: **C-O > C-N > C-F**
   (Electronegativities of $_{6}C = 2.5$, $_{7}N = 3$, $_{8}O = 3.5$, $_{9}F = 4$)
7. No two electrons in one atom have different set of quantum numbers.
8. The maximum number of electrons in *f* subshell is 14.
9. The atoms combined together to form bonds.
10. The hybridization of **B** in **BF_3** is sp^3. ($_{5}B$, $_{9}F$)

[Q2] Choose the correct answer of the following questions: *(15 marks)*

1. Which sketch represents an orbital with the quantum numbers $n = 3$, $\ell = 0$, $m_\ell = 0$?

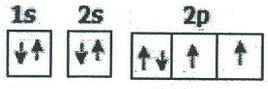
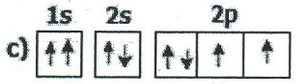
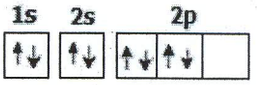
   a)  b)  c)  d) 

2. Which of the following is most likely to be an ionic compound?
   a) **NF_3** b) **N_2** c) **CO_2** d) **Na_2O**
3. Which of the following has the largest radius? ($_{8}O$, $_{11}Na$, $_{12}Mg$, $_{17}Cl$)
   a) **Cl^-** b) **O^{2-}** c) **Na^+** d) **Mg^{2+}**
4. What is the electron configuration for copper ion, $_{29}Cu^+$?
   a) **[Ar] $4s^2\ 3d^9$** b) **[Ar] $4s^1\ 3d^{10}$** c) **[Ar] $4s^0\ 3d^{10}$** d) **[Ar] $4s^2\ 3d^8$**
5. Which of the following Lewis N_2O structures is false? ($_{7}N$, $_{8}O$)

   a)  b)  c) 

6. Which one of the following is a metal?
   a) $_{5}B$ b) $_{6}C$ c) $_{31}Ga$ d) $_{19}K$
7. Which one of the following molecular formulas is an empirical formula?
   a) **$C_6H_6O_2$** b) **H_2O_2** c) **C_2H_6SO** d) **$H_2P_4O_6$**

   Molecules like **CO_2, NO_2** and **BF_3,** which one obeys octet rule? ($_{5}B$, $_{6}C$, $_{7}N$, $_{8}O$, $_{9}F$)
   a) All obey. b) Only BF_3 c) CO_2 and NO_2 d) Only CO_2
8. Which one of the following is the correct orbital diagram for ground state oxygen (**$_{8}O$**)?

   a)  b)  c)  d) 

9. Which of the following elements has the most negative electron affinity?
   a) $_{10}Ne$ b) $_{9}F$ c) $_{8}O$ d) $_{6}C$

Please turn over

[Q3] Complete the following *statements*: *(15 marks)*

1. Pauli Exclusion Principle states that .....
2. The four quantum numbers of the last electron in $3d^3$ are .....
3. ..... concluded that it is impossible to simultaneously know both the position and momentum of an object as small as an electron.
4. In Lyman series of H spectrum, the third line represents the movement of electron from the ..... energy level to the .....
5. The atomic size of Li is ..... than that of O and the atomic size of Be is ..... than that of Ba.
   ($_3$Li, $_8$O, $_4$Be, $_{56}$Ba)
6. Down the group, the first ionization energy ..... and the electron affinity .....
7. s-s overlap produce ..... bonding molecular orbital and ..... antibonding molecular orbital.
8. Ionic bond results from attraction between ions of different charges and ..... bond results from sharing of electrons from two atoms but ..... bond results from sharing pair of electrons in which both electrons come from the same atom.
9. 80% of known elements on the earth are .....
10. Bonding M.O. possess ..... energy than of atomic orbitals.

[Q4] a- On the basis of (M.O.T), answer the following: *(15 marks)*

1. Which molecule is more stable O_2 or O_2^-?
2. Which molecule is paramagnetic N_2 or O_2?

b- 12 gram of zinc and 6.5 gram of sulfur react to form zinc sulphide (**ZnS**), a substance used in phosphor that coat the inner surfaces of TV picture tubes and computer screens; the equation of the reaction is

$$Zn + S \rightarrow ZnS$$

1. Which is the limiting reactant?
2. How many grams of ZnS can be formed? (The atomic weights of Zn= 65.4, S=32).

c) Magnesium reacts with chlorine to form $MgCl_2$, draw Born-Haber cycle of the formation of $MgCl_2$?

******* Best Wishes *******

Prof. Nagwa Nawar and Prof. Ola El Gamal

المستوى : الأول المادة : جبر وهندسة كود المادة : (ر111)	كلية العلوم – قسم الرياضيات	دور: يناير 2016 الزمن : ساعتان التاريخ : 9/ 1/ 2016

البرامج: كيمياء-الكيمياء الحيوية- كيمياء وحيوان- ميكروبيولوجى- كيمياء ونبات-علوم بيئة- جيولوجيا- جيوفيزيقا

أجب عن الأسئلة الآتية: **الدرجة الكلية :** 80 درجة

السؤال الأول:

أ –استخدم مبدأ الاستنتاج الرياضي فى اثبات أنه لاى عدد طبيعى $n \in N$ فان:

$$\frac{1}{1\times3}+\frac{1}{3\times5}+\ldots.+\frac{1}{(2n-1)(2n+1)}=\frac{n}{(2n+1)}$$ *(10 درجات)*

ب – اوجد نقطة تقاطع المستقيمين $x+y+2=0,\ 2x+y+5=0$ والزاوية بينهما

ثم اوجد معادلة المستقيم الذي يمر بنقطة التقاطع وعمودى على المستقيم $2x+3y+7=0$

(10 درجات)

السؤال الثاني:

أ – اختار الاجابة الصحيحة مع الرسم وتوضيح جميع البيانات على الرسم

المعادلة $y^2-4y+x-8=0$ تمثل: *ا)* قطع ناقص, *ب)* دائرة , *جـ)* قطع مكافىء

(10 درجات)

ب – اوجد المقياس والسعة للعدد المركب $z=\frac{2-2i}{1+i}$ ثم اوجد $z^{\frac{4}{3}}$. *(10 درجات)*

السؤال الثالث:

أ– باستخدام طريقة كرامر اوجد حل المعادلات الخطية الآتية:

$2x-3y+z=-1,\ x+2y-z=2,\ 3x+y+2z=11$ *(10 درجات)*

ب– اوجد معادلة القطع الناقص الذى مركزه عند النقطة(2 , 3 -) و احدى بؤرتيه (2 , 3)

واحدى رؤوسه عند النقطة (2 , 8) موضحا جميع المعلومات الخاصة به مع الرسم .

(10 درجات)

السؤال الرابع :

أ–حلل الكسر الآتى إلى كسوره الجزيئية $\frac{3x^2+x+4}{x^3+4x}$ *(10 درجات)*

ب – أوجد معادلة المنحنى $x^2+y^2-12x-8y+50=0$ عند نقل المحاور

موازية لنفسها إلى النقطة $o'(6,4)$ وحدد نوع المنحنى . (10 درجات)

مع أطيب التمنيات بالتوفيق: اسرة التدريس

Mansoura University
Faculty of Science
Geology Department
Date:12/1/2016

Final Exam First Term (January, 2016)
First Level, Geophysics & Geology & Programs
Subject: Physical &Historical Geology (Geol.101)
Time: 2 hours 60 Marks

أولا: الجيووجيا الطبيعية

السؤال الأول: أجب عن ١٥ فقط من الأسئلة التالية: (١٥ درجة)

١- لماذا لا يعد الخشب معدنا؟

٢- فى أى اتجاه تتحرك قاعة الامتحان هذه مقارنة بقاعة مماثلة فى المملكة العربية السعودية؟

٣-عرف مستوى القاعدة العام واذكر ظواهر الترسيب بفعل الأنهار؟

٤- إرسم مع البيانات دورة الصخور؟

٥- وضح دور الأكسدة والأحماض والمحاليل فى التجوية الكيميائية.

٦- لأذكر مراحل نشأة وتطور الجبال؟

٧- ما اسم خاصية المعادن المتحدة فى مكوناتها الكيميائية والمختلفة فى تركيبها الذرى مع ذكر مثال؟

٨- عرف وارسم رسما توضيحا لرباعى الأوجه السليكاتى؟

٩- أذكر الصفات الثانوية التى لا تتصف بها معظم المعادن؟

١٠- بالرسم وضح دورة المياه فى الطبيعة؟

١١- ماهى عوامل الدمار بفعل الزلازل؟

١٣- فرق بين قوة الزلزال وسعته؟

١٤- أذكر أنواع التحول فى تكوين الصخور المتحولة؟

١٥- أذكر مع التعريف أنواع الموجات الزلزالية؟

١٦- أذكر أنواع خزائن الماء الجوفى مع الرسم؟

١٧- أذكر أنواع التجوية الفيزيائية موضحا بالرسم؟

١٨- ما سبب إهتزاز التربة وما سبب وما سبب نمائها (ربائها) ؟

١٩- صنف الصخور الرسوبية؟

٢٠- أذكر أهم أشكال المتداخلات النارية موضحا بالرسومات؟

السؤال الثانى: أكتب نبذة مختصرة عن خمسة فقط مما يأتى (ثلاث درجات لكل) (١٥ درجة)

١- صلابة المعادن وتشققاتها وبريقها.

٢-شواهد فرضية الزحف القارى ومفهوم نظرية الألواح التكتونية.

٣-التنبؤ بالزلازل والكوارث الناتجة عن الزلازل.

٤-العوامل المتحكمة فى الهبوط الكتلى وأنواع الهبوط الكتلى.

٥-تقدير مقدار الجذر القارى بالكيلومترات لمنطقة جبلية ترتفع ٥ كيلومترات فوق مستوى سطح البحر, مع العلم بأن كثافة القشرة القارية ٢,٨جرام للسنتيمتر المكعب و كثافة الوشاح ٣,٣ جرام للسنتيمتر المكعب.

٦-تضاريس البراكين والكوارث التى تحدثها البراكين والملاحظات التى تنذر بحدوث البراكين.

٧-تفسير لغز إصرار معظم الأنهار على شق مجاريها فى قمم سلاسل الجبال.

ملحوظة : الامتحان فى صفحتين

لجنة الإمتحان والتصحيح*:

أ.د. صلاح نصر عياد* أ.د.حسنى حمدان الدسوقى حمامة*

ثانيا: الجيولوجيا التاريخية

السؤال الثالث: أكمل العبارات الآتية: **(١٥ درجة)**

- ظهرت الأسماك اللافكية (الإوستراكوديرم) فى نهاية العصر...(١)....
- يعتبر....(٢).... وهى قبيلة حيوانية لافقارية منقرضة يقتصر وجودها على العصر الكمبرى فقط.
- وصلت زنابق البحر والبرعميات من الجلدشوكيات المثبتة الى قمة إنتشارها فى حقب الحياة القديمة المتأخر وخاصة فى العصر..(٣)...
- من أهم الحفريات التى وجدت فى العصر الكمبرى الرأسقدميات ممثلة بجنس ....(٤)...
- كانت المسرجيات أكثر المجموعات الحيوانية اللافقارية إنتشارا فى بحار العصر الديفونى مثل جنس....(٥)....
- تكونت الحركه الهيرسينيه فى نهاية حقب الحياة ....(٦).....
- يعتبر جنس *Dictyonema* من أهم وآخر أجناس الجرابتوليتات فى العصر ....(٧)....
- من النباتات التى لعبت دورا مهما فى تكوين طبقات الفحم فى العصر الكربونى أجناس ....(٨)....ذات الحراشيف المربعة أو السداسية.
- بدأت الفورامينفرا فى الإنتشار منذ العصر الكربونى المبكر ومنها مجموعة ....(٩)....التى إنتشرت خلال الكربونى المتأخر والبرمى.
- تعتبر الجرابتوليتات من أهم حفريات العصر الأردوفيشى ومنها جنسى ....(١٠)..... ، ...(١١)...
- يمكن تمييز طبقات الحجر الرملى الأحمر القديم والتى تنتمى الى العصر ....(١٢)....حيث يعلوها طبقات الفحم.
- تعتبر المسرجيات التى عاشت فى حقب الحياة المتوسطة أكثر رقيا وأكثر تعقيدا فى تركيبها الداخلى ومنها جنسى ....(١٤)....،...(١٥).....

السؤال الرابع: ضع علامة (√) أمام العبارة الصحيحة و(X) أمام العبارة الخاطئة مع تصحيح الخطأ إن وجد: **(١٥ درجة)**

١- ينقسم العصر الجوراسى الى ثلاثة أقسام رئيسية وهى Lias, Dogger & Malm ( ).
٢- تعتبر الحركة الكاليدونية من الحركات الأرضية العنيفة قرب نهاية حقب الحياة القديمة. ( )
٣- يطلق على العصر النيوجين عصر سيادة النيموليت. ( )
٤- ظهرت الفورامينفرا القاعية لأول مره فى نهاية العصر الجوراسى وهى من قبيلة الأوليات. ( )
٥- يشمل حقب الحياه القديمة المتأخر ثلاثة عصور جيولوجية. ( )
٦- فى العصر الترياسى سادت الامونيتات ذات خط الدرز الأمونيتى. ( )
٧- يطلق على حقب الحياة المتوسطة مصطلح حقب سيادة اللافقاريات. ( )
٨- تم إكتشاف رواسب العصر الترياسى فى مصر بمنطقة هضبة عريف الناقة بشمال سيناء. ( )
٩- تعرف الطبقات الحاملة لعظام الطيور بتكاوين الريتك فى نهاية العصر الجوراسى. ( )
١٠- ظهرت أقدم البرمائيات لأول مرة فى العصر الكربونى المتأخر. ( )
١١- أطلق على العصر البرمى عصرسيادة الأسماك حيث ظهرت خمسة طوائف منها. ( )
١٢- تكونت رواسب الحجر الرملى الأحمر الجديد نتيجة لعواقب الحركة الهيرسينية. ( )
١٣- ظهرت الثدييات الأولية فى نهاية العصر الترياسى وأوائل العصر الجوراسى. ( )
١٤- تم إكتشاف أقدم حفرية للزواحف البدائية فى نهاية العصر الديفونى. ( )
١٥- يطلق على زمن البليستوسين بالعصر الجليدى. ( )

لجنة الإمتحان والتصحيح*:

أ.د. صلاح نصر عياد* أ.د.حسنى حمدان الدسوقى حمامة*

Mansoura University
Faculty of Science
Department of Physics

Time Allowed: 2 h
Date: 16 / 1 / 2016
All Programs

First Term Exam 2015-2016
Physics (101)

Answer the following Questions:

Q.1) What is the meaning of each expression: **(20 Mark)**

1- The work done to produce a quantity of heat equal to 1 cal.
2- Particles that are very close together can transfer heat energy by.....
3- The quantity of heat (Q) that flow perpendicular to the face during a time (t).
4- The rate of heat flow per unit area per unit temperature gradient when the heat flow is at right angle to the faces of a thin parallel material under steady state condition.
5- The amount of time it takes to complete one oscillation or 1 cycle.
6- The amount of heat per unit mass needed to change one gram of a solid substance into one gram of liquid without changing its temperature.
7- The deformation produced in the body is not completely recovered after the removal the load.
8- The negative ratio between the lateral strain to longitudinal strain.
9- An external pressure applied to an enclosed fluid is transmitted uniformly throughout the volume of the liquid.
10- If a body is totally or partially immersed in a fluid, the buoyant force will equal to the weight of displaced fluid.

Q.2) Write 'T' if the statement is true and 'F' if the statement is false. **(10Marks).**

1- Hooks law is applied correctly up to Elastic limit. ( )
2- Insulators do not have free electrons and so they conduct heat as well as metals. ( )
3- Heat conduction is the transfer of heat by the direct collision between particles of matter. ( )
4- The heat travels between the Sun and the Earth by conduction or by convection. ( )
5- The latent heat of vaporization of a substance is always Greater than its latent heat of fusion. ( )
6- The coefficient of linear expansion is twice the area of thermal expansion. ( )
7- Substances with higher heat capacities heat up more slowly than those with lower heat capacities. ( )
8- In steady flow, the velocity of an incompressible fluid at each point does not remains constant. ( )
9- A thermometer is an instrument that measures the temperature of a system in a quantitative way. ( )
10- Change in shape or size (or both) of a body due externally applied force is called stress. ( )

Q.3) Solve these Problems **(10 Marks)**

1- A 0.1 Kg unknown (ingot) of metal is heated to 300 °C and then dropped into a beaker containing 0.5 Kg of water initially at 25 °C. If the final equilibrium temperature of the mixed system is 50 °C. Find the specific heat of the metal. ($C_w = 4190$ J)
2- The smaller and larger pistons of a hydraulic press have diameters of 4 cm and 12 cm. What input force is required to lift a 4000 N weight with the output piston?
3- The extremes of temperature in the bottom of the earth, over a period of 50 years, differ by 116 °F. Express this range in Celsius degree?
4- A square hole 8.00 cm along each side is cut in a sheet of copper. Calculate the change in the area of this hole if the temperature of the sheet is increased by 50.0 K. $\beta_C = 34 \times 10^{-6}\ K^{-1}$.
5- If the force F equal $F = 2\pi r L v\eta/R$ where r is radius L is length, v is speed and R is distance, what are the dimensions of η (viscosity)?

Q.4) Answer these questions: **20 Marks)**

1- If the general equation of simple harmonic motion is gives by $[d^2x/dt^2 + (k/m)x = 0]$. Prove that the angular frequency $\omega^2 = k/m$ where x is the displacement k is the spring constant and m is the mass of object.

2- Write the difference between the tensile, the Bulk and the Rigidity modulus.

3- Bernoulli's equation studies the relation between pressure P, density ρ, velocity υ and height h and their ability to describe fluids in motion. Discuss this equation in When i- the liquid at rest, ii- if the height is constant. iii- When there is no change in pressure

4- There are three temperature scales that are used by scientists to measure temperature. How are they different from each other?

Good luck
Examiners

Prof . Dr. Moustafa Tawfik
Ass. Prof. Maysa -Ismael
Dr. Afaf Sarhan

Prof . Dr. Rizk Moustafa
Dr. Mohamed Mekamer
Dr. Menem Reda

Mansoura University
Faculty of Science
Botany Department
El-Mansoura, Egypt

جامعة المنصورة
كلية العلوم
قسم النبات
المنصورة - مصر

Educational Year: First Level

Final Examination in Botany
First Term: Jan. 2016

Subject: Botany

Course: Biodiversity

Program: Microbiology, Chemistry and Botany, Chemistry and Zoology, Environmental Sciences, Biochemistry and Geology.

Code: B 101 **Time:** 2 hours **Date:** 26/1/2016 **Full Mark:** 60 **Question Mark:**15

Answer the Following Questions:

الإمتحان في صفحتين

Q1: A. Complete the following sentences: (6 mark)

1. Deutromycetes are characterized by ……and ……
2. Eumycota are classified into classes ……,……., ……..,……
3. Ascocarps in ascomycetes are ……..,……,……
4. Spores produced in the hosts of *Puccinia graminis* are ……,……,……,……
5. Asexual reproduction in Zygomycetes by the formation of.....
6. Stages of sexual reproduction in fungi are ……., ...,…….

B. Write short notes with labeled diagrams on the following: (9 mark)

1. Ascus and ascospores formation in ascomycetes.
2. Economic importance of Mycophyta
3. Nutrition in Fungi.

Q2: A. Complete the missing word(s): (4 mark)

1- Staminate flower must lack……..

2- In bryophytes, the root-like structure is known as……

3- Gymnospermae reproduce by…….

4- ……is the dominant generation in *Funaria* life cycle.

B. Choose the most correct answer: (4 mark)

1) Which of the following is a non-vascular plants

a- *Pinus* **b-** *Cycas* **c-** *Adiantum* **d-** *Funaria*

2) Double fertilization occurs in

a- Gymnospermae **b-** Angiospermae **c-** Ferns **d-** a+b

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C. 1- Mention ONLY TWO diagnostic features of bryophytes, ferns and dicot plants. (4 mark)

2- With the help of a LABELED DIAGRAM, illustrate the life cycle of a bryophyte. (3 mark)

Q3: A. Types of reproduction in *Chlamydomonas* with the help of labeled diagrams. (7 mark)

B. Define each of the following (draw if possible): (3 mark)

1- Air bladders in phaeophyceae. **2-** Carpogonium. **3-** Chrysolaminarin.

C. IN A TABLE; compare between each of the following: (5 mark)

1. The kingdoms of Whittaker's classification of living organisms.
2. Prokaryotes and eukaryotes organisms.

Q4: A- Complete the missing word(s): (7 mark)

1. The binomial nomenclature system gives each organism two names the .....and .....
2. The protein coat enclosing the viral genome is known as .....
3. Viruses that replicates inside bacterial cells are termed as .....
4. Eubacteria belong to the kingdom .....
5. Bacteria that cannot grow in absence of oxygen are called .....
6. Peptidoglycan is a polymer composed of amino acids and sugars which is an integral part of the cell wall of.....
7. Bacteria reproduce vegetatively by.....

B- Mention the potential function of the following: (3 mark)

1. Heterocysts. **2.** Bacterial capsules. **3.** Akinetes.

C- 1- Using labeled diagrams ONLY differentiate between monotrichous, lophotrichous, amphitrichous, and peritrichous bacteria. (2.5 mark)

2- Mention the distinctive characters of cyanobacteria. (2.5 mark)

With Best Wishes

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First Year English Examination
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Time: Two Hours

Section One: Reading Skills:

Below is a short passage comparing Solar energy to other sources of energy. Read the passage in order to do the tasks which follow:

(1) Solar energy is a renewable energy source. This means that we cannot run out of solar energy, as opposed to non-renewable energy sources (e.g. fossil fuels, coal and nuclear). We will have access to solar energy for as long as the sun is alive – another 6.5 billion years according to NASA. It is also abundant: The potential of solar energy is beyond imagination. The surface of the earth receives 120,000 terawatts of solar radiation (sunlight) – 20,000 times more power than what is needed to supply the entire world. An abundant and renewable energy source is also sustainable. Sustainable energy sources meet the needs of the present without compromising the ability of future generations to meet their needs. In other words, solar energy is sustainable because there is no way we can over-consume.

(2) Harnessing solar energy does generally not cause pollution. It is clear that solar energy reduces our dependence on non-renewable energy sources. This is an important step in fighting the climate crisis. Solar energy is available all over the world. Not only the countries that are closest to the Equator can put solar energy to use. The majority of today`s solar power systems do not require a lot of maintenance. Residential solar panels usually only require cleaning a couple of times a year. Serious solar manufacturers ship 20- or 25-year warranties with their solar panels.

(3) Solar vs. Wind : Wind turbines can take a lot of space and can be noisy, so they're better suited for rural rather than urban locations. Wind energy works best in windy places, not surprisingly. Solar power is adaptable – Germany is currently the largest market for solar panels, even though it's not known as a particularly sunny place. In other words: it is more important to live in a windy place if you want to use wind turbines than it is to live in a sunny place if you want to use solar panels. Wind turbines require maintenance, and solar is virtually maintenance-free. Wind power can be less expensive to produce initially. On the other hand, the federal tax credit, state and local incentives are making solar power more affordable.

(4) Solar vs. Hydropower: Hydropower is typically done in large-scale dams rather than for homeowners (although someone with a rushing stream or river on their property might be able to use small scale "micro-hydro"); solar can be used almost anywhere. Large dams are extremely expensive to build. Flooding large areas of land destroys habitat and can force human relocation; solar panels can be installed on existing unused space like rooftops. Building large dams can cause geological damage leading to earthquakes. Dams can unfairly alter water supply between communities and countries. Building dams alters the natural water table level and can negatively affect wildlife such as salmon.

(5) Solar vs. Biomass: Biomass (wood or plants) is usually used for fuels rather than electricity production, though it can be used either way. Right now, most homeowners in the U.S. do not have the option to purchase electricity made from biomass, though it's available in a very small number of areas. Crops like sugar cane and other sources for biomass require land that could otherwise be used for growing food. Algae helps avoid this problem somewhat because it can grow in water. Solar panels do not necessarily need to use land space, since they can go on existing roofs. Burning biomass creates CO2 emissions, though less than fossil fuels like coal. Solar energy does not create emissions as it produces power. Solar panels have efficiencies as high as 19%, meaning that much of the sun's energy is converted into electricity. The efficiency of biomass is much, much lower – perhaps less than 1%.

I. Answer the following questions briefly:

1. What are some of the negative effects of a) dams, b) wind turbines, and c) coal?

2. According to the information in the passage, explain in your words how solar energy is a) abundant, b) sustainable, c) renewable, and d) efficient.
3. Based on the text , how is solar energy more friendly to the environment and less expensive than the other sources mentioned ?

II. Are the following statements true or false? Justify your answer with evidence from the text:

1. Establishing solar energy panels requires a lot of space on land.
2. Solar energy can be produced in places where the weather is not very hot .
3. Hydropower may be produced on a small scale by homeowners.
4. Generating solar pollution leads to noise pollution.
5. Biomass is more friendly to the environment than solar energy.

III. Find words in the passage which mean:

1) Whole (Paragraph 1) 2) Need (Paragraph 2) 3) Influence (Paragraph 4)
4) Changed (Paragraph 5)

Section Two: Language Skills:

I. Each of the sentences in the passage below has one grammatical mistake. Find the mistake and rewrite each sentence correctly.

(1) Acid rain describing any form of precipitation with high levels of nitric and sulfuric acids. (2) It can also occur in the form of snow, fog, and tiny bits of dry material that settles to Earth. (3) When humans burn fossil fuels, sulfur dioxide (SO2) and nitrogen oxides (NOx) released into the atmosphere. (4) These chemical gas react with water, oxygen, and other substances to form mild solutions of sulfuric and nitric acid. (5) Winds may spread this acidic solutions across the atmosphere and over hundreds of miles. (6)When acid rain reaches Earth, it flows across the surface in runoff water, entering water systems, and sinks into the soil.

II. Each of the definitions below has a mistake. First, decide if it is (1) giving an example, (2) using a word from the term to be defined, or (3) absence of general class word. Then , rewrite the definition correctly.

1. Geometry is the study of geometric figures.
2. A degree is given by a university to a student who has passed the appropriate examinations.
3. A dictionary is a book like 'Oxford Dictionary'.

III. Punctuate the following sentences

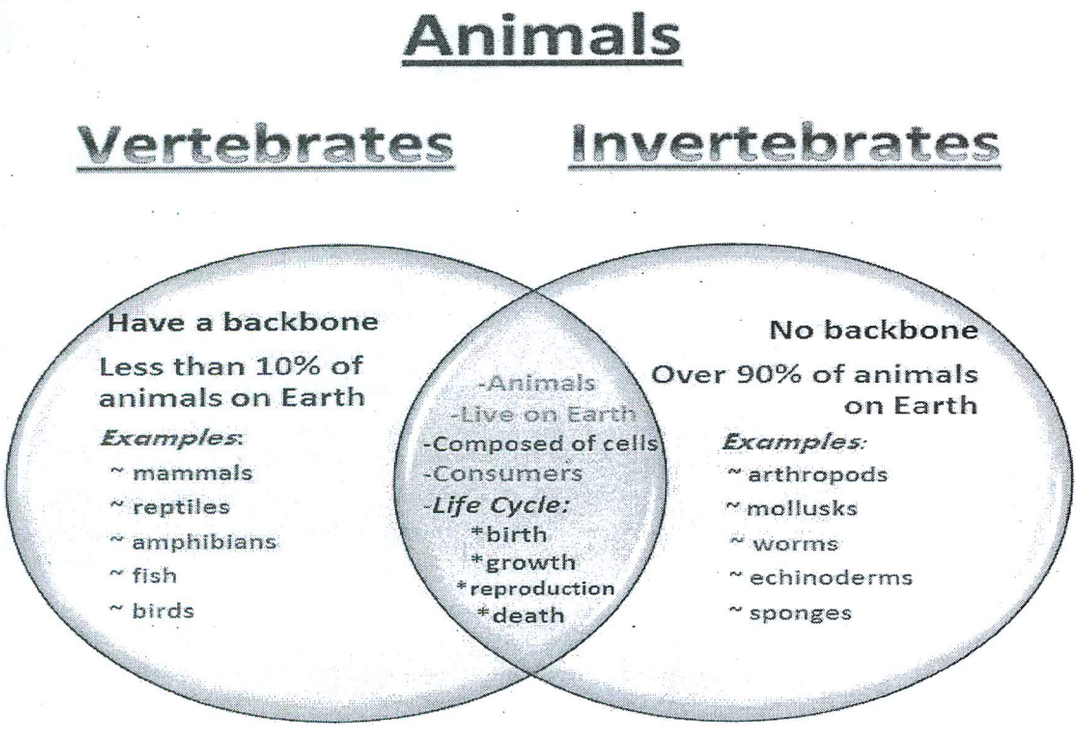
1. although peter lives by the ocean he won t go in water
2. i have some news for you john s father has arrived
3. he said there is a u turn on two blocks on first avenue

IV. Do as shown in brackets:

1. _____ can't make the person rich. (Add a gerund phrase).
2. Working in the yard all day, I got a sore.
   Working in the yard all day, my back got sore.
   Working in the yard all day, it became very neat.
   (Choose the only correct structure avoiding Dangling Modifiers)
3. Having seen black pool tower, the Eiffel tower is more impressive. (Correct the sentence)
4. He gave a present to his sister wrapped in a bright paper. (Correct the sentence)
5. Iceland has little agriculture (beside – besides – despite – during) grazing land for sheep, horses and cattle.

Section Three: Writing Skills: Choose 0nly one topic: either A) or B):

A) Using the information in the following diagram, write down a paragraph of about 150 words to compare between vertebrates and invertebrates:



B) Using the information in the following table, write a paragraph of about 150 words comparing between Bacteria and Viruses.

Viruses	Bacteria
• 20x smaller than bacteria	• 20x larger than viruses
• Single-celled micro organisms	• Non-cellular and sub-microscopic (much smaller)
• Contain: a central core of DNA surrounded by a protein coat, no nucleus, no cytoplasm, no cell membrane, no cell walls, no ribosomes, enzymes needed to invade a cell and replicate their nucleic acids	• Contain: a single chromosome, a cell wall, cytoplasm, a cell membrane, ribosomes and enzymes to break down food and build cell parts
• Only capable of reproducing inside other living cells	• Capable of independent reproduction, host cells not needed
• Do not feed, excrete, and grow • Non-living	• Feed, excrete, grow, and reproduce • Living