جامعة المنصورة

كلية الحقوق

امتحان مادة حقوق الإنسان　　دور يناير ٢٠١٥م

أجب عن السؤال الأول (الإجباري) ثم عن أحد السؤالين التاليين له (الثاني والثالث) :

السؤال الأول: إجباري: ضع علامة (صح) أمام العبارة الصحيحة أو علامة (خطأ) أمام العبارة غير الصحيحة مما يلي:

١. أقرت الجمعية العامة للأمم المتحدة العهد الدولي للحقوق المدنية والسياسية في ١٠ سبتمبر عام ١٩٤٥ ( ).

٢. صدر الإعلان العالمي لحقوق الإنسان عن الجمعية العامة للأمم المتحدة في عام ١٩٤٦م ( ) .

٣. يُجيز القانون المصري الإجهاض للتخلص من الجنين ( ) .

٤. إن حرية التعليم هي الحرية الأساسية والأم بالنسبة لطائفة الحريات المعنوية ( ) .

٥. يُعد القتل بدافع الرحمة الذي يرتكبه طبيب لتخليص المجني عليه من آلامه من مرض لا يرجى البرء منه جريمة قتل خطأ يُعاقب عليها القانون المصري ( ).

٦. تظل الحماية الوطنية لحقوق الإنسان قاصرة، حتى ولو نص عليها في الدستور أو القانون ( ) .

٧. تختلف نظرة الدول الاشتراكية للحقوق والحريات عن تلك السائدة في الدول الرأسمالية الليبرالية ( ).

٨. الحق في الخصوصية حق دستوري والاعتداء عليه جريمة لا تسقط الدعوى الجنائية ولا الدعوى المدنية عنه بالتقادم ( ) .

٩. يُعاقب قانون العقوبات الأطباء والجراحين والصيادلة والقوابل وغيرهم عن إفشاء أي منهم سر خصوصي اؤتمن عليه ( ) .

١٠. يجوز التنازل عن الحق في التقاضي بمقابل مادي ولكن لا تجوز مصادرته ( ).

السؤال الثاني : أجب عن ما يلي:

١ ــ ما المقصود بحقوق الإنسان؟ وا أهمية دراستها على المستوى الداخلي؟

٢ ــ تكلم عن الحقوق والحريات المعنوية؟

السؤال الثالث : أجب عن ما يلي:

١ ــ ما المقصود بالحق في التقاضي؟ وما مصادره؟ وما هي صعوبات ممارسته؟

٢ ــ تكلم عن الحق في الجنسية من حيث تعريفه وتنظيمه في المواثيق والاتفاقيات الدولية ؟

مع أطيب التمنيات بالنجاح،،،،

المستوى: الأول البرنامج : رف & ح ص & ف & ف ح & ج المقرر: ميكانيكا (١)	كلية العلوم – قسم الرياضيات	دور يناير ٢٠١٤/٢٠١٥ الزمن: ساعتان التاريخ: ٢٠١٤/١٢/٢٧

أجب عن الأسئلة الآتية: (الدرجة الكلية ٨٠ درجة)

[١]-أ) أكمل ما يأتي: (١٠ درجات)

١- لأي متجهين $\underline{A}, \underline{B}$ فإن المقدار $\alpha\underline{A}\cdot(\underline{B}\wedge\underline{A})$ يساوى .....

٢- إذا كان $\underline{A}\ //\ \underline{B}$ أو $\underline{A}\perp\underline{B}$ فإن المتجه $(\underline{A}\cdot\underline{B})(\underline{B}\wedge\underline{A})$ يساوى .....

٣- إذا كان المتجهان $\underline{A}=2\underline{i},\ \underline{B}=\underline{i}+\lambda\underline{j}$ متوازيان فإن الثابت λ يساوى .....

٤- لأي متجه $\underline{A}$ فإن الكمية الاتجاهية $\underline{i}\wedge(\underline{A}\wedge\underline{K})$ تساوى .....

٥- أقصى مدى لجسيم قذف في مستوى بسرعة $5\sqrt{g}$ m/sce يساوى .....

ب) ضع علامة (√) أمام العبارة الصحيحة وعلامة (×) أمام العبارة الخطأ مع تصحيح الخطأ (١٠ درجات)

١- إذا تحرك جسيم حركة توافقية بسيطة فإن أكبر قوة مؤثرة عليه تحدث عند مركز الحركة ( )

٢- إذا كان تردد جسيم يساوى 25red/sec فإن ربع الزمن الدوري له يساوى 1/100 . ( )

٣- إذا كانت مجموعة من القوى تكافئ عند نقطة ما قوة وازدواج متعامدين فإن هذه المجموعة يمكن ان تكافئ قوة وحيدة ( )

٤- مسقط المتجه $\underline{j}+\underline{i}$ على محور Z يساوى صفر ( )

٥- إذا قذف جسيم فى مستوى بسرعة u ، فإن أقصى مدى له يحدث عندما تكون زاوية القذف $\alpha=30^\circ$ أو $\alpha=60^\circ$ ( )

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[٢]-أ) إذا كان $\underline{A}=\underline{i}+\underline{j}-\underline{k},\ \underline{B}=\underline{i}-3\underline{j}+\underline{k}$ فاوجد: (١٤ درجة)

(i) مسقط المتجه $\underline{A}$ على المتجه $\underline{B}$

(ii) متجه يوازى المتجه $\underline{A}+\underline{B}$ وطوله يساوى 6.

ب) حل المعادلة الاتجاهية $\underline{X}\wedge\underline{A}+\underline{X}=\underline{A}$. (٦ درجة)

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[٣]-أ) مجموعة من القوى تتكون من قوة $\underline{F}_1=2\underline{i}-3\underline{j}$ وتمر بنقطة الأصل وقوة $\underline{F}_2=\underline{i}+\underline{k}$ وتمر بالنقطة (1, 0 , -1) وازدواج $\underline{C}_1=2\underline{i}+\underline{j}+\underline{k}$. أوجد ما تكافؤه هذه المجموعة عند نقطة الأصل ثم أوجد المجموعة اللولبية المكافئة. (١٠ درجات)

ب) جسيم يتحرك حركة توافقية بسيطة شوهد عند لحظة معينه على مسافة $5\sqrt{3}$ cm من مركز الحركة وبعد زمن قدره ثانية واحدة عاد إلى نفس النقطة وبعد ثانية أخرى مر بمركز الحركة. أوجد سعة الحركة وزمنها الدوري وكذلك موضع الجسيم بعد ثانية من مروره بالمركز. (١٠ درجات)

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[٤]-أ) من قمة برج ارتفاعه 200 ft قذفت قذيفة بسرعة 80 ft/sec أثبت أنه يمكن إصابة شخص على بعد 200 ft من قاعدة البرج بزاويتين مختلفتين وأوجد الزمن اللازم في كل حالة. (١٠ درجات)

ب) علق جسيم كتلته m بأحد طرفي خيط خفيف مرن طوله الطبيعي L بينما ثبت الطرف الأخر للخيط في نقطة ثابتة O وعندما يكون الجسيم متزن (وضع الاتزان الاستاتيكى) فإن الخيط يستطيل بمقدار $\frac{L}{10}$. فإذا جذب الجسيم حتى أصبح أسفل O بمسافة 2L وترك ليتحرك من سكون . أوجد السرعة التي يصل بها إلى نقطة التعليق O . (١٠ درجات)

مع أطيب الأمنيات بالنجاح

أ.د/ مجدى إلياس & د/ الشحات عبدالعزيز

المستوى: الأول المادة : جبر وهندسة كود المادة: ر ١١١	كلية العلوم – قسم الرياضيات	الزمن: ساعتين التاريخ : ١٧ / ١/ ٢٠١٥ الدرجة الكلية: ٨٠ درجة

أجب عن جزئين فقط من كل سؤال من الأسئلة الآتية فى ضوء ما درست (الجزء ١٠ درجات):-

السؤال الأول:- (٢٠ درجة)

أ- أثبت بإستخدام مبدأ الاستنتاج الرياضى أن لكل عدد طبيعى n

$$1^2 + 2^2 + 3^2 + \cdots \ldots\ldots\ldots\ldots\ldots + n^2 = \frac{n}{2}(n+1)(2n+1)$$

ب- ضع العدد $Z = \frac{1}{(2+i)^2} - \frac{1}{(2-i)^2}$ على الصورة المثلثية ثم أوجد $Z^{4/3}$.

ج- إذا كانت $f(x) = \frac{3x+5}{2x-3}$ أثبت أن $f(x)$ دالة أحادية ثم أوجد معكوسها.

السؤال الثانى:- (٢٠ درجة)

أ- باستخدام طريقة كرامر أوجد حل مجموعة المعادلات التالية:

$$x + 3y - 2z = 0,\ 2x - y + 4z = 6,\ 2x + 2y + 3z = 5.$$

ب- عرف علاقة التكافؤ على مجموعة A. وإذا كانت R علاقة معرفة على مجموعة الأعداد الصحيحة Z فى الصورة $R = \{(x,y): x,y \in Z, x+y = \text{زوجى عدد}\}$ ، فأثبت أن R علاقة تكافؤ ثم أوجد فصول التكافؤ.

ج- حلل الكسر $\frac{2x+1}{(x-2)^2(x^2+1)}$ إلى كسوره الجزئية.

السؤال الثالث:- (٢٠ درجة)

أ- عين احداثيات المركز والبؤرتين والاختلاف المركزى وطول الوتر البؤرى العمودى وطولى المحورين ومعادلات المحورين والدليلين والخطين التقاربين للقطع

$16x^2 - 9y^2 + 64x + 18y = 89$ ثم ارسمه.

ب-ارسم القطع الذى تمثله المعادلة $y^2 + 8x - 6y + 17 = 0$ مع ذكر البيانات الخاصة به.

ج- أوجد معادلة الخط المستقيم المار بنقطة تقاطع المستقيمين

$2x - y - 1 = 0, 3x + 2y - 12 = 0$ والعمودى على الخط المستقيم $3x + 3y - 8 = 0$.

السؤال الرابع:- (٢٠ درجة)

أ- أوجد المعادلة الجديدة للمنحنى $x^2 + y^2 - 6x - 10y - 2 = 0$ بعد نقل المحاور موازية لنفسها إلى النقطة $O'(3,5)$.

ب- أوجد معادلة القطع المكافئ الذى بؤرته هى $(0,6)$ ودليله هو الخط المستقيم $y = -3$ وأوجد معادلة المحور وطول الوتر البؤرى العمودى ثم ارسم القطع.

ج-ارسم القطع $9x^2 + 25y^2 - 18x + 100y = 116$ مع ذكر البيانات الخاصة به.

مع أطيب التمنيات بالتوفيق
أسرة قسم الرياضيات

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

First Level
Date: 20/1/2015
Time Allowed: 2 hours
Full Mark: 60 Marks

**** *Answer Only four of the following questions* ****

[Q1] Complete the following *statements (10 Only):* *(15 marks)*

1. Heisenberg Uncertainty Principle states that .....
2. The four quantum numbers of the last electron in $4d^6$ are .....
3. The electronic configuration of an element with (Z = 31) is ....., it is roomed in .....group and .....period.
4. The maximum number of electrons in the n shell is.....
5. The atomic size of F is ..... than that of O and the atomic size of Na is ..... than that of Li.
6. The elements in the same period have the same ..... shell while that of the same group have the same .....
7. ..... results from attraction between ions of different charges.
8. ..... results from sharing of electrons.
9. Down the group, the first ionization energy ..... and the electron affinity.....
10. In Lyman series of II spectrum, the third line represents the movement of electron from the .....energy level to the .....
11. s-s overlap produce .....and ..... molecular orbitals.
12. 80% of known elements on the earth are .....
13. The number of periods in the periodic table are ..... and the elements are arranged in the order of increasing .....
14. The % yield of chemical reaction equal .....
15. The electron configuration of iron atom (Z = 26) is ..... and there are ..... unpaired electrons.

[Q2] Put the Mark (√) for the right sentence and (X) for the wrong with writing its correction *(10 Only):* *(15 marks)*

1. The maximum number of electrons in each of s, p, d and *f*-subshell is $(4\ell + 1)$.
2. BF_3 is a liner molecule whereas $BeCl_2$ is an angular planar. ($_5B$, $_4Be$, $_{17}Cl$)
3. In the periodic table, the F element is the highest electronegative and Cs is the least. ($_6C$, $_7N$, $_8O$, $_9F$)
4. The size of Na is smaller than Na^+ (Atomic no. of Na = 11).
5. The polarity of the covalent bond increases as follow: **C-O > C-N > C-F** ($_6C$, $_7N$, $_8O$, $_9F$)
6. The first ionization energy of **P atom** is less than that of **S atom**. ($_{15}P$, $_{16}S$)
7. No two electrons in one atom have different set of quantum numbers.
8. The maximum number of electrons in *f* subshell is 10.
9. The atoms combined together to form moles.
10. The resonance structures should all have similar energies.
11. Bonding M.O. possess higher energy than of atomic orbitals.
12. The isoelectronic species have the same number of protons.
13. The % of elements in a compound depends on the amount of compound.
14. The Cl-P-Cl bond angles in PCl_5 are 90° and 120°. ($_{15}P$, $_{17}Cl$)
15. The hybridization of N in NH_3 is sp^2.

[Q3] Choose the correct answer for (10 *Only*) 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. What is the maximum number of ***d* orbitals** that are possible for a given value of *n* (≥ 4)?

a) **1** b) **7** c) **5** d) **3**

Which of the following is most likely to be an ionic compound?

a) NF_3 b) N_2 c) CO_2 d) Na_2O

Please turn over

3. Which of the following has the largest radius?
a) F b) Cl c) Br d) I

4. What is the electron configuration for magnesium ion, $_{12}Mg^{2+}$?
a) $1s^2 2s^2 2p^6$ b) $1s^2 2s^2 2p^6 3s^1$ c) $1s^2 2s^2 2p^6 3s^2 3p^2$ d) $1s^2 2s^2 2p^6 3s^2$

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

6. Which one of the following is a nonmetal?
a) $_{13}Al$ b) $_{17}Cl$ c) $_{20}Ca$ d) $_{19}K$

7. The electron configuration of copper atom ($_{29}Cu$) is given by:
a) [Kr] $4s^1 3d^{10}$ b) [Kr] $4s^2 3d^9$ c) [Kr] $4s^1 3d^9 4p^1$ d) [Kr] $4s^2 3d^{10} 4p^1$

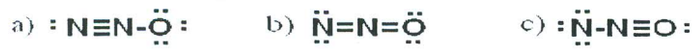
8. Which one of the following is the correct orbital diagram for ground state nitrogen ($_7N$)?

9. Which of the following elements has the largest atomic radius?
a) $_7N$ b) $_8O$ c) $_5B$ d) $_6C$

10. Which of the following elements has the most negative electron affinity?
a) $_{10}Ne$ b) $_9F$ c) $_8O$ d) $_6C$

11. In which orbital below would an electron be closest to the nucleus?
a) 4s b) 5d c) 2p d) 2s

12. Which of the following Lewis N_2O structures is false?



13. How many equivalent resonance forms can be drawn for NO_2^-?
a) 1 b) 2 c) 3 d) There are no resonance structures for this ion.

14. The number of unpaired electrons in $_{27}Co$ is
a) 3 b) 4 c) 4 d) 6

15. 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) $H_2P_4O_6$ e) None of the above.

16. The limiting reagent in a chemical reaction is one that:
a) has the largest molar mass (formula weight). b) has the smallest molar mass (formula weight).
c) has the smallest coefficient. d) is consumed completely.

17. The % yield of chemical reaction equal
a) Theoretical yield/ Actual yield b) Theoretical yield + Actual yield c) Actual yield/ Theoretical yield

---

[Q4] a) If 16 grams of O_2 react with excess C_2H_6, **how many grams of CO_2** will be formed? The formula mass of O_2 = 32 amu and the formula mass of CO_2 = 44 amu. Balance the equation:

$$C_2H_6\,(g) + O_2\,(g) \rightarrow CO_2\,(g) + H_2O\,(g)$$ *(5 marks)*

b) How much water must be added to 25.0 cm^3 of 0.5 M KOH solution to produce a solution whose concentration is 0.350 M? *(5 marks)*

c) Draw Born-Haber cycle of NaCl? *(5 marks)*

[Q5] A. Complete the following: *(3 marks)*

i. The Pauli Exclusion Principle states that .....

ii. Hund's rule states that .....

B. Draw Lewis structure of two only and calculate the formal charge of the following molecules: *(6 Marks)*
i) HNO_3 ii) SO_2 iii) $POCl_3$ ($_1H$, $_7N$, $_8O$, $_{15}P$, $_{16}S$, $_{17}Cl$)

C. Write the electronic configuration and deduce the 4 Q. No. of the last electron in the following: *(3 Marks)*
i) Na ii) Fe^{3+} ($_{11}Na$, $_{26}Fe$)

D. Calculate the wavelength of the radiation that has energy of 3.6 x 10^{-17} joules. *(3 marks)*
(C = 3 x 10^8 m/s. Planl's constant (h) = 6.6 x 10^{-34} J.s)

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

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

First Level
Date: **20/1/2015**
Time Allowed: **2** hours
Full Mark: **60** Marks

******** *Answer* ***Only four*** *of the following questions* ********

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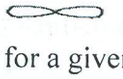
a)  b)  c)  d) 

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Which of the following is most likely to be an ionic compound?

a) NF_3 b) N_2 c) CO_2 d) Na_2O

Please turn over

3. Which of the following has the largest radius?
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4. What is the electron configuration for magnesium ion, $_{12}Mg^{2+}$?
a) $1s^2 2s^2 2p^6$ b) $1s^2 2s^2 2p^6 3s^1$ c) $1s^2 2s^2 2p^6 3s^2 3p^2$ d) $1s^2 2s^2 2p^6 3s^2$

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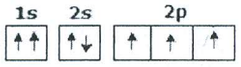
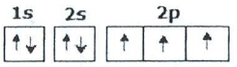
a) 

b) 

c) 

d) 

9. Which of the following elements has the largest atomic radius?
a) $_7N$ b) $_8O$ c) $_5B$ d) $_6C$

10. Which of the following elements has the most negative electron affinity?
a) $_{10}Ne$ b) $_9F$ c) $_8O$ d) $_6C$

11. In which orbital below would an electron be closest to the nucleus?
a) **4s** b) **5d** c) **2p** d) **2s**

12. Which of the following Lewis N_2O structures is false?
a)  b)  c) 

13. How many equivalent resonance forms can be drawn for NO_2^-?
a) **1** b) **2** c) **3** d) There are no resonance structures for this ion.

14. The number of unpaired electrons in $_{27}Co$ is
a) **3** b) **4** c) **4** d) **6**

15. 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) $H_2P_4O_6$ e) **None of the above.**

16. The limiting reagent in a chemical reaction is one that:
a) has the largest molar mass (formula weight). b) has the smallest molar mass (formula weight).
c) has the smallest coefficient. d) is consumed completely.

17. The % yield of chemical reaction equal
a) Theoretical yield/ Actual yield b) Theoretical yield + Actual yield c) Actual yield/ Theoretical yield

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[Q4] **a)** If 16 grams of O_2 react with excess C_2H_6, **how many grams of CO_2** will be formed? The formula mass of O_2 = 32 amu and the formula mass of CO_2 = 44 amu. Balance the equation:

$$C_2H_6\,(g) + O_2\,(g) \rightarrow CO_2\,(g) + H_2O\,(g)$$ *(5 marks)*

b) How much water must be added to 25.0 cm^3 of 0.5 M KOH solution to produce a solution whose concentration is 0.350 M? *(5 marks)*

c) Draw Born-Haber cycle of NaCl? *(5 marks)*

[Q5] **A. Complete the following:** *(3 marks)*

i. The Pauli Exclusion Principle states that .....

ii. Hund's rule states that .....

B. Draw Lewis structure of two only and calculate the formal charge of the following molecules: *(6 Marks)*
i) HNO_3 ii) SO_2 iii) $POCl_3$ ($_1H$, $_7N$, $_8O$, $_{15}P$, $_{16}S$, $_{17}Cl$)

C. Write the electronic configuration and deduce the 4 Q. No. of the last electron in the following: *(3 Marks)*
i) **Na** ii) Fe^{3+} ($_{11}Na$, $_{26}Fe$)

D. Calculate the wavelength of the radiation that has energy of 3.6 x 10^{-17} joules. *(3 marks)*
(C = 3 x 10^8 m/s. Planl's constant (h) = 6.6 x 10^{-34} J.s)

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

Mansoura University
Faculty of Science
Department of Physics

Time Allowed: 2 h
Date: 13 / 1 / 2015
All Programs

First Term Exam 2014-2015
Physics (101)

Answer the following Questions:

Q.1) Choose and write the correct answers: (10 Marks)

1- A and B are two wires. The radius of A is twice that of B. They are stretched by the some load. Then the stress on B is.
Equal to that on A - Two times that on A - Four times that on A - Half that on A

2- The amount of radiation emitted by a perfectly black body is proportional to.
Temperature on ideal gas scale - Fourth power of temperature on ideal gas scale
Source of temperature on ideal gas scale - Fourth root of temperature on ideal gas scale

3- If the temperature increases, the modulus of elasticity
Increases - Decreases - Remains constant - Becomes zero

4- Construction of submarines is based on.
Archimedes' principle - Pascal's law - Newton's laws - Bernoulli's theorem

5- If the force F equal $F = 2\pi rLv\eta/R$ where r is radius L is length, v is speed and R is distance, What are the dimensions of η (viscosity)?
$M L^{-2} T^{-1}$ - $M L^{-1} T^{-2}$ - $M^{-1} L^{-1} T^{-1}$ - $M L^{-1} T^{-1}$

6- A body executes simple harmonic motion. The potential energy (P.E.), the kinetic energy (K.E.) and total energy (T.E.) are measured as a function of displacement x. Which of the following statements is true .
P.E. is maximum when $x = 0$ - T.E. is zero when $x = 0$
K.E. is maximum when $x = 0$ - K.E. is maximum when x is maximum

7- Water flows through a pipe, the diameter of the pipe at point B is larger than at point A. Then the speed of the water greater at.
Point A - cannot be determined - Point B - Same at both a and B

8- Shear modulus is given by
$S = (F/V)/(\cos\theta)$ - $S = (F/A)/(\Delta V/V)$ - $S = (F/A)/\theta$ - $S = (A/F)/\tan\theta$

9- In simple harmonic motion the acceleration of the oscillating particle is given by
$a = -\omega^2 A \sin(\omega t + \delta)$ - $a = A\cos(\omega t + \delta)$ - $a = -\omega A \sin(\omega t + \delta)$ - $a = -\omega^2 A^2 \sin(\omega t + \delta)$

10- The latent heat of vaporization of a substance is always .
Greater than its latent heat of fusion - Equal to its latent heat of condensation
Greater than its latent heat of condensation - Less than its latent heat of fusion

Q 2- What is the meaning of each expression: (20 Marks)

1) If the material restore to its original shape and size after removing the load from it, it's said to be .....
2) If the material does not return to its original dimensions after removing the applied stress, it's said to be .....
3) If a body is totally or partially immersed in a fluid, the buoyant force will equal to the weight of displaced fluid .....

4) Is the constant of each matter and equal ratio between stress and strain. .....
5) It is the motion of a fluid in which every particle in the fluid follows the same path as the previous particle. .....
6) 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 .....
7) Suppose a rod of material has a length L_o at some initial temperature T_o when the temperature changes by ΔT, the length changes by ΔL. .....
8) the quantity of heat required to raise the temperature of a unit mass of the material one degree .....
9) Law states that, an external pressure applied to an enclosed fluid is transmitted uniformly throughout the volume of the liquid. .....
10) The amount of heat per unit mass required to change the phase .....

Q.3a) Bernoulli's Equation Studies the relation between P, ρ, υ and h (height) 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 (6 Marks)

Q.3b) Draw the stress- strain curve defining all the main points and parts of the curve. (5 Marks)

Q.3c) The bar shown has a square cross section for which the length is 40 mm. If an axial force of 800 N is applied along the centroidal axis of the bar's cross sectional area, determine the average normal stress acting on the bar ? 800 N  (5 Marks)

Q.4a) The position, x, of an object is given by the equation $x = A + Bt + Ct^2$, where t refers to time. What are the dimensions of A, B, and C using the dimension analysis, (5 Marks)

Q.4b) Fill the space in the table (4 Marks)

$T\,^{\circ}C$	$T\,^{\circ}F$	$T\,^{\circ}K$
.....	.....	273
.....	68	.....

Q.4c) A handful of copper shot is heated to 90°C and then dropped into 80g of water at 10°C. The final temperature of the mixture is 18°C. What was the mass of the shot?
(Specific Heat of water = 1 cal/g°C, Specific heat of copper = 0.093 cal/g°C) (5 Marks)

Good luck
Examiners

Prof . Dr. Moustafa Tawfik
Ass Prof. Nobel Zaky Kenawy
Ass. Prof. Erzk Moustafa
Dr. Afaf Sarhan

Prof . Dr. Mohamed El-Bakery
Ass. Prof. Maysa -Ismael
Dr. Mohamed Mekamer

Mansoura University
E.S.P. C.
Time allowed: 2 hrs.

Faculty of Science
First Year
January 2015

English Language Exam

Section One: Reading skills:

Read the passage below in order to answer the questions which follow:

(1) Pollution has been defined as the addition of any substance or form of energy to the environment at a rate faster than the environment can accommodate its dispersion, breakdown, recycling or storage in some harmless form. In simpler terms, pollution means the poisoning of the environment by man.

(2) Pollution has accompanied mankind ever since groups of people settled down in one place for a long time. **It** was not a serious problem during primitive times when there was more than ample space available for each individual or group. As the human population boomed, pollution became a major problem and has remained as one ever since. Cities of ancient times were often unhealthy places, fouled by human wastes and debris. Such unsanitary conditions favored the outbreak of diseases that killed or maimed many people living in those times.

(3) The rapid advancement of technology and industrialization today is something that man can be proud of. However, **it** has brought along with it many undesirable results, one of which is the pollution of our environment. Humanity today is threatened by the dangers of air, water, land and noise pollution.

(4) The air that we breathe is heavily polluted with toxic gases, chemicals and dust. **These** consist of the discharge from industrial factories and motor vehicles. The emission of lead and carbon monoxide from exhaust fumes is a major cause for concern too. Outdoor burning of trash and forest fires have also contributed to air pollution. **They** cause the smarting of the eyes, bouts and coughing and respiratory problems. Owing to the burning of fossil fuels, the level of carbon monoxide in the air is more than desirable. Too high a level of carbon dioxide will cause the Earth's temperature to rise. The heat will melt the polar caps, thus raising the sea level and causing massive floods around the world. The burning of fuels also produces gases which form acid rain. Acid rain has a damaging effect on water, forest and soil, and is harmful to our health.

(5) Man has reached the moon and invented supersonic crafts that can travel faster than the speed of sound. However, these inventions emit pollutants which contribute to the depletion of the ozone layer. This depletion of ozone, which absorbs the harmful rays of the sun and prevents them from reaching the Earth, will have drastic effects on all living things. It will lead to a rise in the number of people suffering from skin cancer.

(6) Water pollution has become widespread too. Toxic waste has found its way into our lakes, streams, rivers and oceans. This waste is released by factories and sea-going vessels. Spillage of oil by tankers and during the recent Gulf War has caused irreparable damage to marine life. Thousands of sea animals have died or were poisoned by the pollutants in their natural habitat. As such, it is dangerous for humans to consume sea food caught in polluted waters.

(7) Dumping of used cars, cans, bottles, plastic items and all other kinds of waste material is an eyesore Much of the refuse is not biodegradable and this interferes with the natural breakdown process of

converting substances from a harmful form to a non harmful one. As such, it becomes a hazard to one's health. We may be unaware of it but noise pollution has been attributed to causing a loss of hearing, mental disturbances and poor performance at work.

(8) To control environmental pollution, substances which are hazardous and can destroy life must not be allowed to escape into the environment. This calls for united decision-making among world leaders and a public awareness of the dangers of pollution.

I. Below are statements summarizing the main ideas of some paragraphs in the passage. Copy each statement in your answer sheet then write the number of the paragraph which includes the idea.

1. The effects of air pollution
2. The impact of pollution on marine life
3. Modern inventions and Pollution
4. What is pollution?
5. Pollution in ancient times

I. Answer the questions below:

1. When did pollution begin to be a problem?
2. How will the rise in the earth's temperature endanger life?
3. Pollution can be defined as _____
4. What is the bad effect of acid rain?
5. What causes land pollution?

II. What do the underlined bold pronouns refer to?

III. Read these sentences and say whether they are true or false and justify your answer:

1. Cities of ancient times were always healthy. ( )
2. Air is polluted with toxic gases, chemicals and dust. ( )
3. With burning of fossil fuels, the level of carbon may increase. ( )
4. The effects of pollution on water is limited. ( )
5. Noise pollution causes loss of hearing only. ( )

IV-Find words in the passage which mean the following:

1- injured paragraph 2 2- danger paragraph 7

3- joint paragraph 7

Section Two: Language Skills:

I. Choose the correct answer to complete the following sentences:

1. Some new projects are **(opening – to open – to be opened – to opened)** soon.
2. There isn't **(much – many - a few – bed)** room in my apartment.
3. How **(many – much – often – long)** comedy works of Shakespeare did you read?
4. **(A - An – The – Zero Article)** ink in my pen is red.
5. He and his brother are the same **(high – tall – length – height).**

II. The following short text has some grammatical mistakes. Rewrite the text correctly in your paper underlining the changes you have made.

For the last hundred years there has been changes in the weather. As a result the distribution of wild life have been affected. Many European animals have moved northwards. Different species of bird have being seen in Greenland.

III. Use the following words to write correct definitions in the way you studied in the course.

1. Square/ geometric shape/ four equal sides/ right angles
2. Encyclopedia/ book/give information/ subjects/ alphabetical order
3. Astronomy/ science/ sun, moon, stars, and planets
4. A fossil/ an organic trace/ buried/ natural processes

IV. Change the following sentences into passive voice:

1. They will meet Doris at the station.
2. Teachers teach reading in the first grade.
3. Michael has not sent me a text message.
4. The waiter brought Fred a big steak.

V. Fill in the blanks with the appropriate article if one is needed.

Though you can make -----(1) ---- decision on purely economic grounds, buying ---(2)---- computer is often more like joining ---(3)----- religious cult. Buy---(4) --- Apple, for example, and almost by default you join Apple chairman Steve Jobs in his crusade against IBM. Every machine has its "users' groups" and ---(5)---- band of loyal enthusiasts who tout its merits. That makes it all -----(6)--- more difficult for ---(7)---- uninitiated to decide what machine to buy. Students have---(8)------ huge advantage, however. ---(9)---- computer companies are so eager for students' business (it builds "brand loyalty") that many offer---- (10)---- huge discounts.

Section Three: Writing Skills:

The table below lists some of the similarities and differences between "Red blood cells and White blood cells". Write a paragraph on the differences and similarities using the information given.

	Red Blood Cells	White Blood Cells
Physical Properties	Bi-concave disc shaped/ have no nucleus/ size approximately 6-8 μm	WBCs/ irregular in shape/ have a nucleus and an outer buffer coat
Life Span	120 days	4-30 days depending on body
Types	Only one type of RBCs found in the blood	Various types of WBCs with distinct functions
Function	Supply oxygen to different parts of the body/ carry carbon dioxide/ other waste	Produce antibodies / develop immunity against infections. Phagocytic cells/ engulf/ microbes
Production	Produced in red bone marrow	Produced in lymph nodes, spleen, etc.