	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF PHYSICS		
	EXAMINATION FOR FRESHMEN (FIRST YEAR) STUDENTS OF BIOLOGY		
COURSE TITLE:	Heat & Properties of Matter (General Physics 1)	COURSE CODE:	PH 1123
DATE:	31/12/ 2017	TERM:	FIRST
TOTAL ASSESSMENT MARKS:		100	
TIME ALLOWED:		2 HOURS	

Answer the Following Questions

First question (25 Marks)

- a) Suppose we are told you that the acceleration (a) of a particle moving in a circle is proportional to its radius (r) and its uniform velocity (v), how you can determine the relation between them?
- b) Drive the relation between the linear velocity (v) and the angular velocity (ω) of a particle having a uniform circular motion (The circular motion).

Second question (25 Marks)

Drive the equation of simple harmonic motion.

Third question (25 Marks)

- a) Explain the Platinum resistance thermometer.
- b) Explain the Thermo-electrical thermometer.

Fourth question (25 Marks)

- a) Explain how you can determine the specific heat of a substance using Bunsen's Ice calorimeter.
- b) In Callendar and Barnes (continuous flow method) the following readings were taken :
- First experiment :
- E.M.F= 3V, current =6.5 A , 0.4 kg of water pass through the apparatus in 20 minutes giving rise of temperature of 11 °C
- Second experiment:
- E.M.F= 4V, current =7 A , 0.5 kg of water pass through the apparatus in 20 minutes giving the same temperature rise as before.



Use these values to determine J

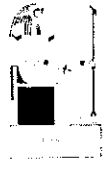
- 1- When did the study of metals begin?
- 2- Explain how both the alchemists of the Middle Ages and the ancient Greeks study metals.
- 3- What are the common metals in the earth's crust?
- 4- What is the cause of the beautiful colours of rocks?
- 5- What is iron pyrite often called?
- 6- Why was not aluminium used until a century ago?
- 7- Explain the points of similarities and differences between iron and aluminium.
- 8- Why is aluminium used for airplanes, trains and rockets?
- 9- When did magnesium emerge as an important metal?
- 10- Name other major elements besides iron and aluminium.

Aluminium is the most abundant metal, but it was not used until a century ago because it is so active chemically and difficult to extract. Like iron it is soft, but in contrast to iron and steel, aluminium is very light and more resistant to corrosion. These qualities make it useful for airplanes, trains, automobiles, rockets, and house siding. In the 1940s, magnesium emerged as an important metal. Although it is less abundant in the earth, more chemically active, and harder to extract than aluminium, it is present in sea water and that means there is almost endless supply of it. In the space age, the extraordinary properties of titanium have made it the new wonder metal. Lighter and stronger than steel, it is more resistant to corrosion and able to withstand heat. The remaining major metals are sodium, potassium, and calcium, all too active chemically (they react violently with water) for use in construction.

The study of metals began in the Middle Ages when alchemists searched for a technique to convert "base metals" like lead, to gold. They never succeeded in making gold but at least by experimenting with the metals (in contrast to the ancient Greeks, who only speculated about them) they made many discoveries. All but 20 of the over 100 elements identified to date are metals but only 7 of these are common in the earth's crust. Iron, the most widely used metal, is rarely found in the free state (not combined with other metals) and must be extracted from naturally occurring compounds (ores) such as hematite, magnetite, and pyrite. The beautiful colours of rocks are due almost entirely to these iron compounds. In fact, iron pyrite is often called fool's gold because of the similarity of its colour to gold. Iron is very strongly magnetic, and the fact that the earth is a magnet itself tipped scientists off to the fact that iron is a major component of the earth's core, or center. Pure iron is a relatively soft, silvery metal that is very active chemically (that is, it combines with oxygen to corrode or form rust). It is usually mixed with other elements or compounds to form alloys such as steel, stainless steel, or cast iron, which are more durable and rust resistant than pure iron.

I-Read the Following Passage and Answer the Questions:(40 marks)

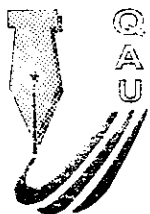
	EXAMINATION FOR SOPHOMERS (LEVEL ONE) STUDENTS OF BIOLOGY			COURSE TITLE Scientific English	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS
	COURSE Code: ENG III						
	FACULTY OF SCIENCE TANTA UNIVERSITY						

	Tanta University - Faculty of Science - Botany Department			
	EXAMINATION FOR JUNIOR: 1ST YEAR BIOTECHNOLOGY			
	Course Title	تاريخ وفلسفة العلوم		Course Code: UN139
Date	Jan 2018	Term: First	Total Assessment: 60 Marks	Time Allowed: 2 Hours

الدرجة الكلية ٦٠ (٣ درجات لكل نقطة)

- ١- ماذا تعرف عن الحوار السقراطي؟
- ٢- إعط مثال للقضية الحملية مبينا محمولها؟
- ٣- عرف الفلسفة التجريبية (الوضعية المنطقية)؟
- ٤- هل تقبل القضية الفلسفية الحسم صدقا أو كذبا، ولماذا؟
- ٥- ما الفرق بين الفلسفة العلمية وفلسفة العلوم؟
- ٦- قارن بين التفكير التجريدي والتفكير العيني؟
- ٧- أذكر ثلاثة من فوائد التفكير العلمي؟
- ٨- وضح كيف يمكن إكتساب التفكير العلمي؟
- ٩- ماهى الخطوات الأساسية للمنهج العلمي؟
- ١٠- فرق بين مشكلة البحث العلمي والغرض منه؟
- ١١- ماذا تعرف عن بردية إبيرس؟
- ١٢- من هو الملقب بصاحب النفس الزكية، وما هو دوره التاريخي فى دراسة علم النبات؟
- ١٣- من هو أبو علم النبات، وما هى أشهر مؤلفاته النباتية؟
- ١٤- من هو لطفى بولس، وما هو الدور الذى قام به لتحديث معلوماتنا عن فلورة مصر؟
- ١٥- ما هى أول رسالة ماجستير تمنح فى مصر فى مجال علم النبات، أذكر نبذة مختصرة عن مؤلفها؟
- ١٦- ما الذى تتوقعه فى غيبة التفكير العلمى؟
- ١٧- ماهى الأسئلة التى يجب على الباحث الإجابة عليها بخصوص مشكلة البحث؟
- ١٨- من أهم خصائص النظرية العلمية أنها قابلة للتكذيب، وضح ذلك؟
- ١٩- ما هو أشهر نبات فى مصر القديمة والذى كان رمزا مقدسا فى مصر السفلى، وماهى أهم استخداماته؟
- ٢٠- ما المقصود بمسمى علم العلم Science of Science؟

مع تمنياتنا لكم بالتوفيق والسداد



وحدة ضمان الجودة
أحمد عبد الحليم
QUALITY ASSURANCE UNIT
FACULTY OF SCIENCE - TU

لجنة الممتحنين: أ.د. كمال شلتوت & أ.د. أحمد عبد الحليم



1969

Tanta University
Faculty of Science
Department of Mathematics

Final term exam for the first semester 2017-2018

Course title:

رياضيات (1)

Course code: MA1101

Date: 28 /12/2017

Total Marks: 150

Time allowed: 2 Hours

أجب عن الأسئلة الآتية:

السؤال الأول : (40) درجة

أ- أثبت صحة العلاقة $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$ ؟ب- إذا كانت $f : X \rightarrow Y$, $X = R - \{3\}$, $Y = R - \{2\}$ حيث $f(x) = \frac{2x+1}{x-3}$ فأثبت أن الدالة $f(x)$ تمثل دالة أحادية وفوقية؟ج- استنتج المشتقة الأولى للدالة الآتية $y = \tan^{-1} x$ ؟

د- أوجد المشتقة الأولى للدوال الآتية:

(i) $y = (\sin^{-1} x)(\sin x)$

(ii) $x^3 + y^3 = 6xy$

السؤال الثاني : (35) درجة

أ- أذكر مع البرهان نظرية القيمة المتوسطة؟ ومن ثم طبق نظرية القيمة المتوسطة على الدالة الآتية:

$$f(x) = \sqrt{x}(x-2), \quad x \in [0, 2]$$

ب- أوجد القيم العظمى والصغرى المحلية للدالة: $f(x) = \frac{1}{3}x^3 - x^2 - 3x + 4$ ؟ج- إبحث عن تزايد وتناقص الدالة الآتية: $f(x) = x^3 + 3x^2 - 9x + 1$

السؤال الثالث : (38) درجة

أ- إذا كانت p, q, r ثلاثة تقارير فأوجد جدول الحقيقة للتقرير الآتي $(\neg q \cap \neg p) \rightarrow (q \leftrightarrow r)$ ب- إذا كانت A, B مجموعتان فأثبت بدون استخدام الجدول $B - (B - A) = A \cap B$ ج- باستخدام الاستنتاج الرياضي أثبت أن $4 + 9 + 14 + 19 + \dots + (5n - 1) = \frac{n}{2}(3 + 5n)$

السؤال الرابع : (37) درجة

أ- أثبت أن علاقة التوازي على مجموعة المستقيمات في المستوى تمثل علاقة تكافؤ؟

ب- حلل الكسر التالي إلى كسوره الجزئية $\frac{2x+2}{x^2-x-12}$ ج- أوجد قيمة x, y, z إذا كانت $2 \begin{pmatrix} x & 2z \\ 5 & 3y \end{pmatrix} - \begin{pmatrix} 1 & -3 \\ 2 & 9 \end{pmatrix} = \begin{pmatrix} 3 & 8 \\ 7 & 9 \end{pmatrix}^T$

Examiners


Dr. Nabil El-Kholy

وحدة ضمان الجودة

كلية العلوم - جامعة طنطا

QUALITY ASSURANCE UNIT

FACULTY OF SCIENCE - TU

 1969	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF MATHEMATICS			
	APPLIED EXAMINATION FOR FIRST YEAR STUDENTS OF SPECIAL GEOLOGY			
	COURSE TITLE: Calculus and Differential equations			COURSE CODE MATC 1101
DATE:	JAN., 2017	TERM: 1	TOTAL ASSESSMENT MARKS: 180	TIME ALLOWED: 2H.

Question 1:

(45 marks)

(a) Find $\int e^x \cos x dx$ and Evaluate $\int \sqrt{a^2 - x^2} dx$

(b) By using partial fractions determine: $\int \frac{2x+1}{3x^2-27} dx$

(c) Find the general solution for the following differential equation:

$$\frac{dy}{dx} = xe^{(x-y)} + (4x^3 - 1)e^{-y}, \quad y(0) = 1$$

Question 2:

(45 marks)

(a) Find $\frac{dy}{dx}$ for the following function: $y = \sin^{-1}(3x+1) + \cos^{-1}\left(\sqrt{x} + \frac{1}{2}\right)$.

(b) If $y = \sec^{-1} x$ prove that $\frac{dy}{dx} = \frac{1}{x\sqrt{x^2-1}}$ (c) Find $\frac{dy}{dx} : x^2 + y^2 + 3x + y + \sec y = 0$

Question 3:

(45 marks)

(a) Find $\frac{dy}{dx}$ for the function $y = \sin^2 3x + \cos^2 \sqrt{x}$

(b) Find $\lim_{x \rightarrow \infty} \frac{2x^2 - 5}{3x^2 + x + 2}$

(c) Evaluate: $\lim_{x \rightarrow \infty} \frac{3 + \cos 2x}{x - 1}$

Question 4:

(45 marks)

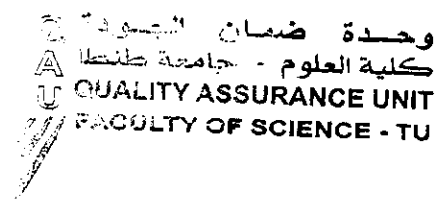
(a) Evaluate: $\lim_{x \rightarrow 2} \frac{\sqrt[3]{x} - \sqrt[3]{2}}{\sqrt{x} - \sqrt{2}}$


(b) Prove that: $\lim_{x \rightarrow 0} \frac{\sin x}{x^{2/3}} = 0$

(b) Find the general solution for the following differential equation: $x \frac{dy}{dx} + 3y = \frac{1}{x^2} e^x + 4$

Best wishes,

Prof. Dr. Ahmed Aboanber



	جامعة طنطا		
	كلية العلوم - قسم الرياضيات		
امتحان الطلاب المستجدين - الفرقة الأولى - شعبة العلوم الجيولوجية			
اسم المقرر: رياضيات (1)		كود المقرر: MA 1101	
زمن الامتحان: ساعتان	الدرجة الكلية للامتحان: ١٥٠	الفصل الدراسي: الأول	يناير ٢٠١٨
التاريخ: ٢٠١٧/١٢/٢٨			

أجب عن جميع الأسئلة التالية

السؤال الأول: (٣٥ درجة)

(أ) عرف: التكافؤ المنطقي - المشتقة الأولى للدالة - التناقض.

(ب) أوجد قيمة المحدد

$$\begin{vmatrix} 3 & 4 & 2 \\ 0 & 1 & -7 \\ -2 & 5 & 9 \end{vmatrix}$$

السؤال الثاني: (٣٠ درجة)

(أ) إذا كانت $U = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$ وكانت $B = \{4, 5, 6, 7\}$, $A = \{1, 2, 3\}$

$C = \{3, 8, 9\}$ فأوجد $A \Delta B$, $A \cap (B^c \cup C^c)$.

(ب) إذا كانت الدالتان $f, g : \mathcal{R} \rightarrow \mathcal{R}$ حيث $f(x) = x+1$, $g(x) = x^2$ فأوجد $f \circ g$, $g \circ f$.

السؤال الثالث: (٤٠ درجة)

(أ) ابحث اتصال الدالة $f(x) = \frac{2x+1}{x-3}$ عند $x=1$.

(ب) اكتب جدول الصدق للتقرير $[A \vee (A \vee B)] \leftrightarrow [(A \wedge C)]$.

السؤال الرابع: (٤٥ درجة)

(أ) باستخدام الاستنتاج الرياضي اثبت أنه لجميع قيم $n \in \mathcal{N}$ يكون

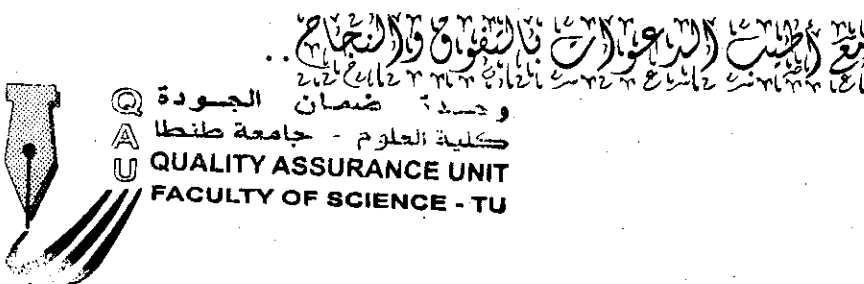
$$1 + 3 + 3^2 + \dots + 3^{(n-1)} = \frac{3^n - 1}{2}$$

(ب) باستخدام جداول الانتماء برهن أنه لأي ثلاث مجموعات A, B, C يكون

$$A - (B - C) = (A - B) \cup (A \cap B \cap C)$$

(ت) أوجد المشتقة الأولى للدالة $f(x) = \sqrt{x^3} \tan\left(\frac{5-x^{10}}{x+7}\right)$.

المتحون:	أ.د/ أحمد رضا النموري	د/ طه عبد المنعم حمودة
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1969

Tanta University
Faculty of Science
Department of Mathematics

Final term exam for the first semester 2017-2018

Course title:	رياضيات (1)	Course code: MA1101
Date: 28 /12/2017	Total Marks: 150	Time allowed: 2 Hours

أجب عن الأسئلة الآتية:
السؤال الأول : (40) درجة

أ- أثبت صحة العلاقة $\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$ ؟

ب- إذا كانت $f : X \rightarrow Y, X = \mathbb{R} - \{3\}, Y = \mathbb{R} - \{2\}$ حيث $f(x) = \frac{2x+1}{x-3}$

فأثبت أن الدالة $f(x)$ تمثل دالة أحادية وفوقية؟

ج- استنتج المشتقة الأولى للدالة الآتية $y = \tan^{-1} x$ ؟

د- أوجد المشتقة الأولى للدوال الآتية:

(i) $y = (\sin^{-1} x)(\sin x)$

(ii) $x^3 + y^3 = 6xy$

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ب- أوجد القيم العظمى والصغرى المحلية للدالة: $f(x) = \frac{1}{3}x^3 - x^2 - 3x + 4$ ؟

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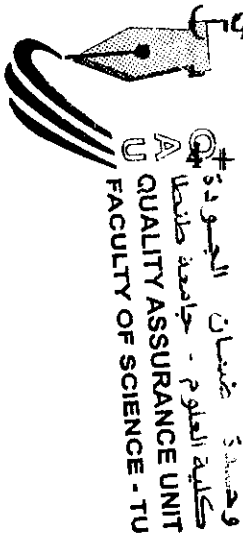
ج- باستخدام الاستنتاج الرياضي أثبت أن $1 + 9 + 14 + 19 + \dots + (5n - 1) = \frac{n}{2}(3 + 5n)$

السؤال الرابع : (37) درجة

أ- أثبت أن علاقة التوازي على مجموعة المستقيمات في المستوى تمثل علاقة تكافؤ؟

ب- حلل الكسر التالي إلى كسوره الجزئيه $\frac{2x+2}{x^2-x-12}$

ج- أوجد قيمة x, y, z إذا كانت $2 \begin{pmatrix} x & 2z \\ 5 & 3y \end{pmatrix} - \begin{pmatrix} 1 & -3 \\ 2 & 9 \end{pmatrix} = \begin{pmatrix} 3 & 8 \\ 7 & 9 \end{pmatrix}^T$



Examiners

Dr. Nabil El-Kholy

Dr. Noha El-Sharkawy

Hints: $A(0.44) \approx 0.17$, $A(0.5) = 0.19146$, $A(0.67) \approx 0.25$, $A(1.18) \approx 0.38$

Q5 - Consider the intelligence quotient (IQ) scores for people. IQs are normally distributed with a mean of 100 and a variance of 100. If a person is chosen at random:
 1 - What is the probability that his IQ is between 110 and 130?
 2 - Find the probability that a person selected at random will have an IQ greater than 95.
 3 - Find the semi-inter-quartile range, the 33rd and 88th percentiles for IQ scores.

(20 Marks)

Q4 - A player tosses two fair coins. He wins \$ 5 if two heads occur, \$ 2 if one head occurs and \$ 1 if no heads occur.
 a - Calculate the coefficient of variation.
 b - How much should he pay to play the game if it is to be fair?

(20 Marks)

Q3 - A section in a certain college contains 50 students, 25 are studying statistics, 20 are studying computer science and 15 studying statistics and computer science. Student is selected at random, what is the probability that the student is studying:
 1 - Neither statistics nor computer science.
 2 - One course only.
 3 - If a student chosen at random and found that studying statistics. What is the probability that this student is also studying the computer science?

(20 Marks)


Q2 - A college statistics department wishes to determine if there is a relationship between the hour (x) at which its classes meet and the number of absences (y) for the class during one month. In classes of comparable size, they observed the following data:
 $(x, y): (2, 3), (4, 5), (7, 9), (5, 7), (3, 4), (5, 6), (6, 7), (4, 6), (7, 8), (3, 5)$
 a - Make a scatter diagram of the data, and plot the regression line on the diagram. Comment.
 b - Calculate Spearman correlation coefficient between x and y. Comment.
 c - If $X = x - 5$ and $Y = y + 7$, find a linear correlation coefficient between X and Y. Comment.

(20 Marks)

Q1 - Suppose the following data set: 5, 2, 6, 4, 8, 5, 8, 4, 2 and 6.
 1 - Is the distribution of data set heterogeneous? Interpret.
 2 - Construct a box - and - whisker plot.
 3 - Do the data contain any outliers? Interpret.
 4 - Is the distribution of data skewed? Interpret.

(40 Marks)

Answer the following questions:

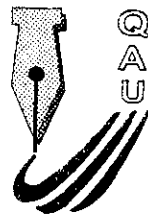
		Date: Sunday 31/12/2017	
FACULTY OF SCIENCE - DEPARTMENT OF MATHEMATICS AND STATISTICS		Total Assessment Marks: 150	
FINAL EXAMINATION (LEVEL ONE - FIRST SEMESTER - PHYSICAL SCIENCE SECTION)		Course Title: Mathematical Statistics	
TANTA UNIVERSITY		Time Allowed: 2:00 Hours	
FACULTY OF SCIENCE - DEPARTMENT OF MATHEMATICS AND STATISTICS		Course code: MA1103	

Q6 – Answer *True* if the statement is always true. If the statement is not always true, replace the words in ITALIC CAPITAL with words that make the statement always true. **(30 Marks)**

- 1 - VARIABLES may be classified in two main categories: qualitative and quantitative.
- 2 - The STATISTIC is a measurable characteristic about an entire population.
- 3 - The mean can be calculated in the case of QUALITATIVE data and OPEN frequency tables from the bottom and top.
- 4 - If three or more observations occur the same number of times more frequently than any of other, then the set of data is said to be USELESS mode.
- 5 - If all values in a data set are equal, the value of the standard deviation for that data set is GREATER THAN zero.
- 6 - The outlier values are very LARGE values relative to the other values.
- 7 - When correlation coefficient is positive, the regression coefficient of *X* on *Y* will always be NEGATIVE.
- 8 - A scatter plot is a chart that gives a MEASURE of the relationship between two variables.
- 9 - The probabilities of complementary events always ARE EQUAL.
- 10 - If two events are mutually exclusive, they will also be INDEPENDENT.
- 11 - The number of hours that you waited in line to register for this semester is an example of a DISCRETE random variable.
- 12 - A binomial probability distribution is ALWAYS symmetrical about its mean.
- 13 - The Poisson probability distribution is a NEGATIVELY skewed distribution.
- 14 - Probability distributions for ALL continuous random variables are normal.
- 15 - The normal distribution is asymptotic to the VERTICAL axis and BIMODAL.

With best of luck and success

Dr. K. A. M. Katt



وحدة ضمان الجودة
كلية العلوم - جامعة طنطا
QUALITY ASSURANCE UNIT
FACULTY OF SCIENCE - TU

3. Choose from between the brackets the correct word: (10 Marks)

- a. In clavate antennae, the segments increase (suddenly-gradually-expand laterally).
- b. In female reproductive system (spermatheca, seminalvesicle, vagina) receives and stores sperm.
- c. The mid gut is (ectodermal- mesodermal- endodermal).
- d. The blood pulsating organ is (segmental vessels-aorta-heart).
- e. Lateral slit-like openings between heart chambers are called (valve-ostia-lips).
- f. Gradual metamorphosis is exhibited by (moths, damsel fly, cockroaches).
- g. (Protocerebrum - Deutocerebrum - Tritocerebrum) innervates compound eyes and ocelli.
- h. The hind wing of cockroach is (membranous- hairy – halter).
- i. Jumping leg is found in (cockroach – locust – flea).
- j. (labrum – maxillae – mandibles) are strong, sclerotized and provided with sharp cutting edges.

5. Illustrate only with fully labeled drawing each of the following: (12Marks,4 each)

- a. Collecting leg
- b. Walking leg
- c. Genuiculate antennae



Question: 7.

(20 marks)

- A. Mention the medical importance of mosquitoes, referring to the method of control? (5 marks)
- B. Make a systemic key with diagnostic characters for silver fish (5 marks)
- C. Mention the control methods for bedbug and fleas mosquitoes (10 marks)

Good Luck

EXAMINERS	ASSISST.PROF.DR. IMAN EL-HUSSEINY DR. HANAA ELBRENS SHAABAN
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	Tanta UNIVERSITY, Faculty of Science, Department of Botany			
	Final Examination for (First Year) Students of Biology			
	COURSE TITLE: General Botany (1)		COURSE CODE: BO1101	
DATE: 24 DECEMBER, 2017	TERM: FIRST SEMESTER	TOTAL ASSESSMENT MARKS: 150	TIME ALLOWED: 2 HOURS	

I – Plant Anatomy (75 marks)

A) Answer the following questions with labeled diagrams when possible (20 marks each)

1. Describe the non-protoplasmic components that could be found in the plant cell.
2. Distinguish the three main categories of meristems on the basis of their position in the plant body.
3. Define the complex tissues? And describe various types of complex tissues in plant body.

B) Complete the following sentences (1.5 mark each)

1. tissues can be divided into simple and compound tissues.
2. cells are the least specialized cells of the mature plant body.
3. Sclerenchyma tissue is composed of dead thick walled cells for
4. is an arrangement where protoxylem is towards centre and metaxylem towards periphery.
5. In the vascular bundles, phloem lies at the centre and is completely surrounded by the xylem.
6. The is a group of cells that are distributed throughout the plant body, and often be continuous between the various organs.
7. In dicot stems the vascular bundles are arranged in one ring, while in monocot stems the vascular bundles are
8. The plant roots are distinguished by vascular bundles.
9. In dicot leaves the tissue is differentiated into palisade and spongy tissues
10. are the plants that are adapted to grow in dry environments.

II – Plant Morphology (75 Marks)

A. Write on five of the following, with labeled drawings (when possible). (50 Marks/ 10 Marks each)

1. Types of dicot seeds.
2. Different types of leaf apex.
3. The different types of weak stems.
4. Root modifications.
5. Types of inflorescences.
6. Cauline leaf arrangements.

B. Mark the following sentences with true (✓) or false (X) (7 Marks/ 1 Marks each)

1. *Onion* has fibrous adventitious root ()
2. The monocot seed germination characteristic by cotyledonary leaves ()
3. Prickly stem is one of the stem modifications. ()
4. Simple fruit may be monocarpellary or multicarpellary ovary ()
5. Climbing roots arise from the aerial nodes ()
6. Running stem develops adventitious root from nodes near the soil surface ()
7. Acicular leaf has reticulate venation ()

Please, continue to the back of the paper sheet



1. READ THE PASSAGE AND ANSWER THE QUESTIONS:

(30 MARKS)

(P1) What is tiny, trisexual and lives on the lips of lobsters? "That's got to be a joke," I thought. Maybe lobster jokes are the latest thing on the internet? But, no, it's real and it's called 'Symbian Pandora', a minute creature that was only discovered in 1995. I get such a thrill when the miraculous pops up as reality before our very eyes, when the marvelous turns out to be a weed species right under my nose in the kitchen garden.

(P2) Why do we forget that the world is far more complex than we can imagine? Why do we want the laws of nature to be straightforward? (*We*) stubbornly say, "There's bound to be a simple answer." But there isn't. The natural world is complicated. Maybe it is complexity that we are afraid of? Or, perhaps we try to preserve our singularity to counter-balance the plurality of the universe? Or maybe, we still secretly believe that people are the crown of creation and the world was made for our enjoyment? The idea of Pandora living out its life on the lips of a lobster shocks us back to reality and our humble place in the cosmos.

(P3) Recently, some biology students made an astounding discovery on a field study that involved picking up 'anything interesting'. The yellow, finger-like fungus growing out of the backs of some beetle grubs looked disgusting. It had consumed so much of each grub that immediate identification was impossible. The students took it to a laboratory, studied it thoroughly, asked the right questions and soon realized that they had found a form of *Cordyceps subsessilis*, a mould that produces cyclosporine, an immunosuppressant used to combat organ rejection in transplants! It's not the finding of a new organism that makes the story outstanding. To discover means to uncover or change our view of something. As it turns out, you often need to change the viewer to make a discovery. People prefer the comfort of the familiar and resist changes which might expose them to the unknown. Discovery is the sense of wonder. You are a discoverer if you manage to keep a sense of surprise lifelong.

1. In paragraph 1, how does the author feel about *Symbion Pandora*? Why?
2. What does the author compare with a weed species? Why?
3. According to the passage, what is the main idea in paragraph 2?
4. In paragraph 2, line 2, who does the pronoun (*We*) refer to?
5. According to the author, why do people tend to explain things in a simple way?
6. In paragraph 3, what were the steps that led to making the discovery?
7. According to the passage, what is mean by a discovery? Why do only a few people become discoverers?
8. According to the author, what makes discoverers different from other people?
9. In paragraph 3, the author says "People prefer the comfort of the familiar and resist changes which might expose them to the unknown", what does the author want to say?
10. In English, explain the meaning of the underlined words?

2. GRAMMAR AND VOCABULARY: ANSWER THE FOLLOWING QUESTIONS AS IS REQUIRED. (20 MARKS)

1. It was an difficult question, I could not answer it. (Fill in the blank with an Adverb)
2. Mag had helped me to finish the homework. (Turn into Passive Voice)
3. Lily wants to leave the house forever. (Turn into Emphatic Statement)
4. (a new car) (In a sentence, use the noun given as an Indirect Object)

Hints: $A(0.44) \approx 0.17$, $A(0.5) = 0.19146$, $A(0.67) \approx 0.25$, $A(1.18) \approx 0.38$

- 3 - Find the semi-inter-quartile range, the 33rd and 88th percentiles for IQ scores.
- 2 - Find the probability that a person selected at random will have an IQ greater than 95.
- 1 - What is the probability that his IQ is between 110 and 130?
- mean of 100 and a variance of 100. If a person is chosen at random: **(20 Marks)**
- Q5 - Consider the intelligence quotient (IQ) scores for people. IQs are normally distributed with a

- a - Calculate the coefficient of variation.
- b - How much should he pay to play the game if it is to be fair?
- no heads occur. **(20 Marks)**

- Q4 - A player tosses two fair coins. He wins \$ 5 if two heads occur, \$ 2 if one head occurs and \$ 1 if

- 3 - If a student chosen at random and found that studying statistics. What is the probability that this student is also studying the computer science?
- 2 - One course only.
- 1 - Neither statistics nor computer science.
- what is the probability that the student is studying: **(20 Marks)**


- Q3 - A section in a certain college contains 50 students, 25 are studying statistics, 20 are studying computer science and 15 studying statistics and computer science. Student is selected at random,

- a - Make a scatter diagram of the data, and plot the regression line on the diagram. Comment.
- b - Calculate Spearman correlation coefficient between x and y. Comment.
- c - If $X = x - 5$ and $Y = y + 7$, find a linear correlation coefficient between X and Y. Comment.
- of comparable size, they observed the following data: **(20 Marks)**

- at which its classes meet and the number of absences (y) for the class during one month. In classes
- Q2 - A college statistics department wishes to determine if there is a relationship between the hour (x)

- 1 - Is the distribution of data set heterogeneous? Interpret.
- 2 - Construct a box - and - whisker plot.
- 3 - Do the data contain any outliers? Interpret.
- 4 - Is the distribution of data skewed? Interpret.
- Q1 - Suppose the following data set: 5, 2, 6, 4, 8, 5, 8, 4, 2 and 6. **(40 Marks)**

Answer the following questions:

		Date: Sunday 31/12/2017	
		Total Assessment Marks: 150	
FACULTY OF SCIENCE – DEPARTMENT OF MATHEMATICS AND STATISTICS		Course Title: Mathematical Statistics	
FINAL EXAMINATION (LEVEL ONE - FIRST SEMESTER - PHYSICAL SCIENCE SECTION)		Corse code: MA1103	
Time Allowed: 2:00 Hours			

Hints: $A(0.44) \approx 0.17$, $A(0.5) = 0.19146$, $A(0.67) \approx 0.25$, $A(1.18) \approx 0.38$

- 3 - Find the semi-inter-quartile range, the 33rd and 88th percentiles for IQ scores.
 2 - Find the probability that a person selected at random will have an IQ greater than 95.
 1 - What is the probability that his IQ is between 110 and 130?
 mean of 100 and a variance of 100. If a person is chosen at random:
 Q5 - Consider the intelligence quotient (IQ) scores for people. IQs are normally distributed with a

- a - Calculate the coefficient of variation.
 b - How much should he pay to play the game if it is to be fair?
 no heads occur.
 (20 Marks)


- Q4 - A player tosses two fair coins. He wins \$ 5 if two heads occur, \$ 2 if one head occurs and \$ 1 if this student is also studying the computer science?
 3 - If a student chosen at random and found that studying statistics. What is the probability that
 2 - One course only.
 1 - Neither statistics nor computer science.
 what is the probability that the student is studying:

- Q3 - A section in a certain college contains 50 students, 25 are studying statistics, 20 are studying computer science and 15 studying statistics and computer science. Student is selected at random, (20 Marks)
 a - Make a scatter diagram of the data, and plot the regression line on the diagram. Comment.
 b - Calculate Spearman correlation coefficient between x and y. Comment.
 c - If $X = x - 5$ and $Y = y + 7$, find a linear correlation coefficient between X and Y. Comment.

- Q2 - A college statistics department wishes to determine if there is a relationship between the hour (x) at which its classes meet and the number of absences (y) for the class during one month. In classes of comparable size, they observed the following data: (20 Marks)
 1 - Is the distribution of data set heterogeneous? Interpret.
 2 - Construct a box - and - whisker plot.
 3 - Do the data contain any outliers? Interpret.
 4 - Is the distribution of data skewed? Interpret.

- Q1 - Suppose the following data set: 5, 2, 6, 4, 8, 5, 8, 4, 2 and 6. (40 Marks)

Answer the following questions:

		Date: Sunday 31/12/2017	
		Total Assessment Marks: 150	
FACULTY OF SCIENCE – DEPARTMENT OF MATHEMATICS AND STATISTICS		Course Title: Mathematical Statistics	
FINAL EXAMINATION (LEVEL ONE - FIRST SEMESTER - PHYSICAL SCIENCE SECTION)		Course code: MAT103	
Time Allowed: 2:00 Hours			

Hints: $A(0.44) \approx 0.17$, $A(0.5) = 0.19146$, $A(0.67) \approx 0.25$, $A(1.18) \approx 0.38$

- Q5 - Consider the intelligence quotient (IQ) scores for people. IQs are normally distributed with a mean of 100 and a variance of 100. If a person is chosen at random:
- 1 - What is the probability that his IQ is between 110 and 130?
 - 2 - Find the probability that a person selected at random will have an IQ greater than 95.
 - 3 - Find the semi-inter-quartile range, the 33rd and 88th percentiles for IQ scores.
- (20 Marks)


- Q4 - A player tosses two fair coins. He wins \$ 5 if two heads occur, \$ 2 if one head occurs and \$ 1 if no heads occur.
- a - Calculate the coefficient of variation.
 - b - How much should he pay to play the game if it is to be fair?
- (20 Marks)

- Q3 - A section in a certain college contains 50 students, 25 are studying statistics, 20 are studying computer science and 15 studying statistics and computer science. Student is selected at random, what is the probability that the student is studying:
- 1 - Neither statistics nor computer science.
 - 2 - One course only.
 - 3 - If a student chosen at random and found that studying statistics. What is the probability that this student is also studying the computer science?
- (20 Marks)

- Q2 - A college statistics department wishes to determine if there is a relationship between the hour (x) at which its classes meet and the number of absences (y) for the class during one month. In classes of comparable size, they observed the following data:
- (x, y): (2, 3), (4, 5), (7, 9), (5, 7), (3, 4), (5, 6), (6, 7), (4, 6), (7, 8), (3, 5)
- a - Make a scatter diagram of the data, and plot the regression line on the diagram. Comment.
 - b - Calculate Spearman correlation coefficient between x and y. Comment.
 - c - If $X = x - 5$ and $Y = y + 7$, find a linear correlation coefficient between X and Y. Comment.
- (20 Marks)

- Q1 - Suppose the following data set: 5, 2, 6, 4, 8, 5, 8, 4, 2 and 6.
- 1 - Is the distribution of data set heterogeneous? Interpret.
 - 2 - Construct a box - and - whisker plot.
 - 3 - Do the data contain any outliers? Interpret.
 - 4 - Is the distribution of data skewed? Interpret.
- (40 Marks)

Answer the following questions:

TANTA UNIVERSITY			FACULTY OF SCIENCE – DEPARTMENT OF MATHEMATICS AND STATISTICS	
FINAL EXAMINATION (LEVEL ONE - FIRST SEMESTER - PHYSICAL SCIENCE SECTION)			Course Title: Mathematical Statistics Course code: MATH103	
Date: Sunday 31/12/2017		Total Assessment Marks: 150		Time Allowed: 2:00 Hours



TANTA UNIVERSITY

FACULTY OF SCIENCE – DEPARTMENT OF MATHEMATICS AND STATISTICS

FINAL EXAMINATION (LEVEL ONE - FIRST SEMESTER - PHYSICAL SCIENCE SECTION)

Course Title: Mathematical Statistics

Course code: MA1103

Date: Sunday 31/12/2017

Total Assessment Marks: 150

Time Allowed: 2:00 Hours

Answer the following questions:

Q1 – Suppose the following data set: 5, 2, 6, 4, 8, 5, 8, 4, 2 and 6. (40 Marks)

- 1 - Is the distribution of data set heterogeneous? Interpret.
- 2 - Construct a box - and - whisker plot.
- 3 - Do the data contain any outliers? Interpret.
- 4 - Is the distribution of data skewed? Interpret.

Q2 – A college statistics department wishes to determine if there is a relationship between the hour (x) at which its classes meet and the number of absences (y) for the class during one month. In classes of comparable size, they observed the following data: (20 Marks)

$(x, y) : (2, 3), (4, 5), (7, 9), (5, 7), (3, 4), (5, 6), (6, 7), (4, 6), (7, 8), (3, 5)$

- a – Make a scatter diagram of the data, and plot the regression line on the diagram. Comment.
- b – Calculate Spearman correlation coefficient between x and y . Comment.
- c – If $X = x - 5$ and $Y = y + 7$, find a linear correlation coefficient between X and Y . Comment.

Q3 – A section in a certain college contains 50 students, 25 are studying statistics, 20 are studying computer science and 15 studying statistics and computer science. Student is selected at random, what is the probability that the student is studying: (20 Marks)

- 1 – Neither statistics nor computer science.
- 2 – One course only.
- 3 - If a student chosen at random and found that studying statistics. What is the probability that this student is also studying the computer science?

Q4 – A player tosses two fair coins. He wins \$ 5 if two heads occur, \$ 2 if one head occurs and \$ 1 if no heads occur. (20 Marks)



- a - Calculate the coefficient of variation.
- b - How much should he pay to play the game if it is to be fair?

Q5 – Consider the intelligence quotient (IQ) scores for people. IQ s are normally distributed with a mean of 100 and a variance of 100. If a person is chosen at random: (20 Marks)

- 1 - What is the probability that his IQ is between 110 and 130?
- 2 - Find the probability that a person selected at random will have an IQ greater than 95.
- 3 - Find the semi-inter-quartile range, the 33rd and 88th percentiles for IQ scores.

Hints: $A(0.44) \simeq 0.17$, $A(0.5) = 0.19146$, $A(0.67) \simeq 0.25$, $A(1.18) \simeq 0.38$

Please, Go Page 2 on the back of the page.

	جامعة طنطا - كلية العلوم		
	إمتحان المستوى الأول - جميع الشعب		
UN1107 رقم المقرر	الثقافة البيئية	عنوان المقرر	زمن الإختبار:
4 يناير 2018	الفصل الأول	درجة الإختبار: ٥٠ درجة	

أجب عن "أربعة أسئلة فقط" على ان تكون إجابة كل سؤال فى صفحات مستقلة

السؤال الأول: عرف كل من المصطلحات الآتية (درجه ١٢.٥)

البيئة - التلوث البيئى - النظام البيئى
التصحر - التنمية المستدامة - الموارد البيئية

السؤال الثانى: أجب عن ثلاثة فقط مما يأتى (درجه ١٢.٥)

- ١ - ما هى مصادر تلوث الهواء؟
- ٢ - ما هى مصادر تلوث الماء؟
- ٣ - أذكر مراحل معالجة الصرف الصحى.
- ٤ - كيفية التحكم فى تلوث التربة؟
- ٥ - أكتب عن الأمطار الحمضية.

السؤال الثالث: أجب عما يأتى: (درجه ١٢.٥)

- ١ - أذكر أربعة من الأنظمة الرئيسية التى يمكن إستخدامها للسيطرة على تلوث الهواء.
- ب - ما هى الأثار التى تسببها الضوضاء؟
- د - ما هى الإجراءات التى يمكن عملها للتحكم فى الضوضاء.

السؤال الرابع: أجب عن ثلاثة فقط مما يأتى: (درجه ١٢.٥)

- ١ - أكتب عن المراحل الأساسية لإدارة الكارثة البيئية.
- ب - أشرح أنواع الفيضانات واسباب حدوثها.
- ج - أكتب عن أنواع الكوارث البيئية وأقسامها.
- د - أذكر الآليات التى تتبع فى إدارة الموارد البيئية.


السؤال الخامس: أكتب فى ثلاثة فقط من الآتى: (درجه ١٢.٥)

- ١ - دور وسائل الإعلام فى توطيد وزيادة الوعي البيئى لدى البشر.
- ٢ - العوامل التى ساهمت فى ترسيخ مفهوم مركزية الإنسان فى الطبيعة.
- ٣ - دور الجامعة فى التأهيل فى البرنامج الوطنى للبيئة.
- ٤ - المستويات المختلفة للتنوع الحيوى.
- ٥ - بنك الجينات الوراثية.

السؤال السادس: أكمل الجمل الآتية، (تنقل الأجابة الى كراسة الإجابة): (درجه ١٢.٥)

- ١ - من أبرز المشكلات البيئية الرئيسية أ - ب - ج -
- ٢ - من أسباب إختلال التوازن البيئى أ - ب - ج -
- ٣ - من أسباب إنقراض الكائنات الحية أ - ب - ج -

أد/ محمود عشاوى / أد/ عبد النعيم الأسيوطى / أد/ طلعت ميز / أد/ رفاعى قناوى / أد/ أحمد شرف الدين

	TANTA UNIVERSITY FACULTY OF EDUCATION DEPARTMENT OF CHEMISTRY		
	FINAL EXAMINATION FOR JUNIOR (FIRST YEAR) STUDENTS		
COURSE TITLE:	GENERAL CHEMISTRY		CODE: CH1101
DATE	13/JAN./ 2018	TERM: FIRST	TOTAL ASSESMENT MARKS:150
			TIME ALLOWED: 2 HOURS

Answer the following questions:

Question 1: (75 marks)

A. Which of the following reactions is: redox/ nonredox/ disproportionation
(please write the equations in your answer paper)

- $CH_3OH + O_2 \rightarrow HCOOH + H_2O$
- $IO^- + IO^- \rightarrow IO_2^- + I^-$
- $2HCl + Na_2S_2O_3 \rightarrow S^0 + SO_2 + H_2O$
- $2S_2O_3^{2-} + I_2 \rightarrow S_4O_6^{2-} + 2I^-$
- $C_2O_4^{2-} \rightarrow 2CO_2$

B. Write the chemical formula or the name of the following compounds:

Lime - Brine - Na_3AsO_4 - $HBr_{(aq)}$

C. Boron has two isotopes, B^{10} and B^{11} , **What is the instrument** that can separate these isotopes, and **What are the main stages** that Boron exposed to?

D. Choose the correct answer:

- The equivalent weight of $KMnO_4$ as a powerful oxidizing agent in an acidic medium if its molecular weight =158 a.m.u equals:
 - 31.6
 - 52.6
 - 158
- $^{15}_7N$, $^{15}_8O$ are :
 - Isotones
 - isotopes
 - isobars
- Oxidation process** can be defined as:
 - Loss of electrons
 - gain oxygen
 - both a and b
- The three quantum numbers of the electron number 25 in a manganese atom are:
 - $l=2, m=-2, s=\frac{1}{2}$
 - $l=2, m=-1, s=\frac{1}{2}$
 - $l=2, m=-2, s=-\frac{1}{2}$

E. Complete the following:

- The set of quantum numbers $n=4, l=3, m=2$ and $s=\frac{1}{2}$ corresponds to the electronic configuration: ($4f^2, 3f^9, 4d^9, 4f^9$)
- The electronic configuration $3d^44s^2$ has(6 / 10) exchanges but the electronic configuration $3d^54s^1$ has(6 / 10) exchanges. Therefore, the stable electronic configuration of is ($3d^44s^2 / 3d^54s^1$).