2nd Term 2016/2017
Date: 27-5- 2017

Final Exam for Level 1
Subject: Computer Science MC100
Time: 2 Hours

Mathematics Dept.
Faculty of Science
Assiut University

Choose the correct answer and write it in the answer table:

Section 1: from 1 to 20 (20 marks)

1. What are common components inside the system unit?

a) CPU – Ports- Power Supply	b)CPU- CD. – RAM-Mouth	c) CPU- Keyboard- RAM	d) CPU-Monitor- Ports

2. Main circuit board in system unit Contains adapter cards, processor chips, and memory chips

a) CPU	b) Mather board	c) Communication devices	d) control unit

3. Convert electronic data produced by the computer system and display them in a form that people can understand.

a) Input devices	b) Output devices	c) Communication devices	d) control unit

4. Pass information in bi-directional.

a) Data bus	b) Address bus	c) Control bus	d) cards

5. It has High-capacity storage and Consists of several inflexible, circular platters that store items electronically.

a) Hard disk	b) Magnetic disk	c) RAM	d) ROM

6. Touch screen is considered as ....

a) Input devices	b) Output devices	c) Communication devices	d) control unit

7. Gigabyte= ....

a) 1 million bytes	b)1 thousand bytes	c)1 billion bytes	d) 1 trillion bytes

8. It is used for very large business, scientific or military application where a computer must handle massive amounts of data or many complicated processes.

a) Micro	b) Mainframe	c) mini	d) Super

9. .....provides an interface between the computer hardware and the user or the application software

a) Operating System	*b) Software*	*c) RAM*	d) Network

10. The .....will not stop the program but results will be inaccurate.

a) *syntax error*	*b) run-time errors*	*c) logic error*	*d) comments*

11. ..... translates ***high-level*** language program into ***machine-language*** all at once.

a) function	b) *Compilers*	*c) Assemblers*	*d) Interpreters*

12. Which Matlab command is usually used to execute a set of commands under some instruction.

a)while	b) for	c)if	d)disp

13. Let x = [2 5 1 6]. How can we compute the $[2^2\ 5^2\ 1^2\ 6^2]$

a) x*x	b) x.^(2)	c) x^2	d) x**x

14. Which Matlab commands create a vector of the even whole numbers between 22 to 67.

a) 21:2:67	b) 21:67,2	c)21,23,...,67	d) 21-67/2

15. In Matlab, which of the following symbols cannot be used in the condition statement of an IF statement?

a) >	**b) <=**	**c) ==**	**d) =**

16. Given the matrix input in Matlab A = [1 5 7; 2 6 4; 3 8 2], which value is referenced by A(2,1)?

a) 8	b) 2	c) 6	d) s

17. In flow chart, we can express to end and start with .....

a) 	b) 	c) 	d) 

18. When we use the for command, the algorithm is considered as .....

a)sequence	b)loop	c)branching	d)other

19. ..... command is to delete all variable

a)del	b)clc	c) clear	d) rem

20. What symbols precede comments in MATLAB

a)"	b)%	c) //	d)c'

Answer Table Section 1

Question	1	2	3	4	5	6	7	8	9	10
Answer										
Question	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Answer										

Section 2: (21 marks)

1. What is the value of k after the Matlab code below executes?

```
k=1;
for i=1:2:10
  k=k*2;
end
```

a) 10	b)32	c)5	d) 0

2. The output of the following code is:

```
s = 2;
t = 0
if s>=4
   t = t+5;
end
disp(t);
```

a) 0	b) 6	c) 5	d) 6

3. The output of the following code

```
X = [3 6 2 1];
Y = [1 1 1 2];
X*Y
```

a) [3 6 2 2]	b) error	c) 13	d) 12

4. In the following code put a=10 then the output is.....

```
Function Sum = fr(a)
Sum =0;
If a >= 5
  for i = 1:5
      Sum = Sum+i
end
end
```

a) 10	b) 11	c) 25	d)15

5. Convert the following to their binary equivalents: 154.057_8

a) 1101100.0101111	b) 101011.101011	c) 101001.101111	d)1001101100.11111

6. The product of 10101*101 equals

a) 1101001	b) 1011111	c) 1101111	d) 111111

7. The number 7573_8 equivalents to hexa-decimal number

a) F7B	b) E7B	c) FF7	d) B5F

Answer Table Section 2

Question	1	2	3	4	5	6	7
Answer							

Section 3: (9 marks)

1. Find the error in the following codes

a)
```
Function (a,b)=res(x,y)
for k=100:-2:10
a=x(i)+y(i);
b =x(i)*y(i);
```

b)
```
D='door'
For i =1:6
  disp(D(i))
```

2. Write an algorithm and draw the flowchart that reads two values, determines the largest value and prints the largest value with an identifying message.

The algorithm	
The flowchart	

== Best Wishes ==

Dr Tarek M. Abdelkader

Dr Alaa Fahiem

Second Semester Final Examination
Course: English Language (1)
Time Allowed: Two Hours
Total Score: 50 Marks
Mav 2017

Answer the following questions.

I. Choose the best topic sentence for each group of supporting sentences. (5 marks)

1) _____. I usually go skiing every weekend in the winter even though it is expensive. I love the feeling of flying down a mountain. The views are beautiful from the top of a mountain and along the trails. Even the danger of falling and getting hurt can't keep me away from the slopes on a winter day.

a) Skiing is expensive.
b) Skiing is my favourite sport.
c) Skiing is dangerous.

2) _____. First of all, we need money to repair old roads and build new roads. We also need more to pay teachers' salaries and to pay for services such as trash collection. Finally, more tax money is needed to give financial help to the poor citizens of the city. It is clear that the city will have serious problems if taxes are not raised soon.

a) We should raise city taxes.
b) City taxes are too high.
c) City taxes pay for new roads.

II. Circle the letter of the correct answer. (30 marks)

1-"Excuse me._____?" 'No, but _____ a little Spanish.'
a. Are you speaking / I'm speaking
b. Do you speak French/ I speak
c. Are you speaking / I speak

2- '_____?' 'Four or five times a year.'
a. Are you often travelling abroad
b. Do you often travel
c. Is you often travelling abroad

3- Can I turn off the TV? You _____it.
a. don't watch
b. didn`t watched
c. aren't watching

4- When you were a child,_____ away from home?
a. have you ever run
b. did you ever run
c. do you ever run

5- One of my best friends _____ an extra on *Seinfeld* this week.
a. are
b. is
c. has

6- Not only the students but also their instructor _____ been called to the principal's office.
a. have
b. has
c. is

7- _____ either my father or my brothers made a down-payment on the house?
a. Has
b. Have
c. Does

8- A few of the students _____doing so well they can skip the next course.
a. is
b. are
c. did

9- My brother _____ a fight with his neighbour last week.
a. has had
b. has
c. had

10- I've got a very interesting job, and I _____ lots of famous people.
a. met
b. meet
c. meets

11- "Do you know Canada?" "No,_____ there."
a. I didn`t went
b. I never went
c. I've never been

12- Select the sentence that illustrates the use of proper parallel construction.
a. Phuong Tran has wit, charm, and she has an extremely pleasant personality.
b. Phuong Tran has wit, charm, and a pleasing personality.

13- Select the sentence that illustrates the use of proper parallel construction.
a. In English class, Tashonda learned to read poems critically and to appreciate good prose.
b. In English class, Tashonda learned to read poems critically and she appreciated good prose.

14. Select the sentence that illustrates the use of proper parallel construction.
a. Raoul's QPA is higher than Ralph.
b. Raoul's QPA is higher than Ralph's.

15- Select the sentence that illustrates the use of proper parallel construction.
a. He wanted three things out of college: to learn a skill, to make good friends, and to learn about life.
b. He wanted three things out of college: to learn a skill, to make good friends, and learning about life.

III- In each of the following sentences, choose the best translation: (5 marks)

1. I smell a rat.

a) ليس لدي الرغبة.
b) أستشعر مكروها.
c) أشم رائحة جرذ.

2. The notes were written by the committee.

a) دونت اللجنة الملاحظات.
b) دُونت الملاحظات من قِبَل اللجنة.
c) قامت اللجنة بتدوين الملاحظات.

IV. Read the following passage. Then answer the questions below. (10 marks)

The term 'virus is derived from the Latin word for poison, or slime. It was originally applied to the noxious stench emanating from swamps that was thought to cause a variety of diseases in the centuries before microbes were discovered and specifically linked to illness. But it was not until almost the end of the nineteenth century that a true virus was proven to be the cause of a disease.

The nature of viruses made them impossible to detect for many years even after bacteria had been discovered and studied. Not only are viruses too small to be seen with a light microscope, they also cannot be detected through their biological activity, except as it occurs in conjunction with other organisms. In fact, viruses show no traces of biological activity by themselves. Unlike bacteria, they are not living agents in the strictest sense Viruses are very simple pieces of organic material composed only of nucleic acid, either DNA or RNA, enclosed in a coat of protein made up of simple structural units.(Some viruses also contain carbohydrates and lipids.) They are parasites, requiring human, animal, or plant cells to live. The virus replicates by attaching to a cell and injecting its nucleic acid.' once inside the cell, the DNA or RNA that contains the virus' genetic information takes over the cell's biological machinery, and the cell begins to manufacture viral proteins rather than its own.

1. Which of the following is the best title for the passage?
(A) New Developments in Viral Research
(B) Exploring the Causes of Disease
(C) DNA: Nature's Building Block
(D) Understanding Viruses

2. Before microbes were discovered, it was believed that some diseases were caused by
(A) germ-carrying insects
(B) certain strains of bacteria
(C) foul odors released from swamps
(D) slimy creatures living near swamps

3. The word "proven" in paragraph 1 is closest meaning to which of the following?
(A) Shown (B) Feared (C) Imagined (D) Considered

4. The word nature" in paragraph 2 is closest in meaning to which of the following?
(A) Self-sufficiency
(B) Shapes
(C) Characteristics
(D) Speed

5. All of the following may be components of a virus EXCEPT
(A) RNA
(B) plant cells
(C) carbohydrates
(D) a coat of protein

(Best Wishes)

Examiners:

Marwa Mostafa

Dr. Marwa M. Abdelmotaleb

Dr. Sherin Abdel Ghaffar

Assiut University
Faculty of Science
Second Semester Final Examination
(May 2017)

Subject: English Language II
Students: Level One

Code: 020UR
Time Allowed: 2 hours

I- What process of word formation is each of the following? (6 Marks)

1. blueberry
2. coffee
3. flu
4. brunch
5. exam
6. bittersweet

II- Choose the one word or phrase which would keep the meaning of the original sentence if it were substituted for the underlined word. (20 Marks)

1. Plato's teachings had a profound **effect** on Aristotle.
1) depth
2) affliction
3) affection
4) influence

2. The **boundary** between Canada and United States has been unfortified for over one hundred years.
1) border
2) water
3) bridge
4) diplomatic relations

3. While they were away on vacation, they allowed their mail to **accumulate** at the post office.
1) be delivered
2) get lost
3) pile up
4) be returned

4. Under the major's able **leadership**, the soldiers found safety.
1) guidance
2) flagship
3) intensity
4) ability

5. Lyndon Johnson **succeeded** John Kennedy as president of the United States.
1) overruled
2) followed
3) preceded
4) assisted

6. That artist did not achieve acclaim because he was an **imitator**, not a creator.
1) a distorter
2) an originator

3) a copier
4) a burglar

7. Jan took many **snapshots** while on vacation in Europe.
1) notes
2) photos
3) gifts
4) clothes

8. Marsha found it difficult to **cope with** the loss of her job.
1) anticipate
2) deal with
3) think about
4) confirm

9. The number of **unemployed** people in our country is increasing rapidly.
1) licensed
2) business
3) working
4) jobless

10. The Students' records were not readily **accessible** for their perusal.
1) offered
2) acceptable
3) available
4) Accountable

III- Choose the answer that contains information most similar to the original sentence. (10 Marks)

1. It looks as if his job could be quite dangerous.
1) His job was very dangerous.
2) His job might be fairly dangerous.
3) His job seems to have been quite dangerous.
4) His job can look rather dangerous.

2. We agreed that John and Jim were to buy the food.
1) John and Jim would agree to buy the food for us.
2) John, Jim and we agree to buy the food.
3) We agree John and Jim would to bought the food.
4) John and Jim were chosen by us to by the food.

3. The professor was late leaving the school.
1) It was dark when the professor left the school.
2) The professor was leaving the school late.
3) The professor was the last one leaving the school.
4) It was too dark for the professor to leave the school.

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5. In Japan, even more than, China, people use bamboo for decoration.

1) Both the Japanese and the China se bamboo for the same decoration.
2) Only the Japanese use bamboo for more decoration than the Chinese.
3) The Japanese use more bamboo for decoration than the Chinese do.
4) Not only the Japanese, but also the Chinese, use bamboo for decoration.

IV- Each of the following sentences contains two homographs. A synonym of one of the homographs follows the sentence. Underline the homograph that matches the synonym. (14 Marks)

1- Does the deer herd have many does? ***(Female deer)***

2- Can you lead us to the harmful lead paint? ***(Show the way)***

3- A minute is minute compared to a day. ***(Very small)***

4- She moped because her moped was broken. ***(Small motorcycle)***

5-Tracey didn't feel well after falling into the well. ***(In good health)***

6- Let's wind up the kite string before the wind gets too wild. ***(Moving air)***

7- The contract was canceled when one of the family members appeared to contract a disease while travelling abroad. ***(An agreement)***

(Best Wishes)

Examiners: Marwa Mostafa

Dr. Marwa M. Abdelmotaleb

Dr. Sherin Abdel Ghaffar

جامعة اسيوط (يونيو 2017) المادة : التفكير العلمى
كلية العلوم رقم المادة : 14 م ج الزمن : ساعتان

==========

سؤال اجبارى : (20 درجة)

الانسان يصطنع منهجا يتيح له الاتصال المباشر بالواقع ، عن طريق الجمع بين العقل والتجربة ، إلا فى مرحلة متأخرة من تاريخه . فلا بد إذن أن عقبات أساسية حالت دون تحقيق هذا الاتصال المباشر بين الإنسان والعالم عن طريق العلم. **فما هى هذه العقبات التى أخرت ظهور العلم والتى لاتزال تشوه صورة المعرفة العلمية حتى يومنا هذا عند فئات كثيرة من البشر ؟**

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اجب عن سؤالين فقط

السؤال الثانى : (15 درجة)

ليس التفكير العلمي هو تفكير العلماء بالضرورة. فالعالم يفكر في مشكلة متخصصة هي في أغلب الأحيان منتمية إلى ميدان لا يستطيع غير المتخصص أن يخوضه بل قد لا يعرف في بعض الحالات أنه موجود أصلا. وهو يستخدم في تفكيره وفي التعبير عنه لغة متخصصة يستطيع أن يتداولها مع غيره من العلماء اي لغة .

تكلم بالتفصيل عن سمات التفكير العلمى .

السؤال الثالث : (15 درجة)

فى القرن العشرين حدثت ثورة كمية وكيفية هائلة فى المجال العلمى ، بمعنى أن نطاق العلم قد اتسع إلى حد هائل ، كما أن إنجازاته قد اكتسبت صفات جديدة وأصبحت أهميتها تفوق بكثير كل ما كان الحلم يحققه فى أى عصر سابق . بل أن هذا التغير جعل العلم هو الحقيقة الأساسية فى عالم اليوم .

تكلم بالتفصيل عن الابعاد الاجتماعية للعلم المعاصر.

السؤال الرابع : (15 درجة)

التحالف الوثيق بين العلم والتكنولوجيا كان مصدر قوة الإنسان المعاصر . **تكلم بالتفصيل عن هذا التحالف .**

تمنياتى لكم بالتوفيق
أ.د./محمد زيدان

كلية العلوم الفصل الدراسي الثاني ٢٠١٦ ١٢٠١٧ م	امتحان لطلاب كليه العلوم المستوي الاولي تاريخ العلوم	الزمن: ساعتان المادة: تاريخ العلوم(١٢م.ج) اليوم: الخميس التاريخ: ١/ ٦/٢٠١٧م

أجب عن جميع الاسئلة الاتيه

السؤال الاول: ضع علامة صح او خطا امام العبارات الاتية: **(٣٠ درجة)**

(١) هيرودت أول من أعتقدت بان الارض كروية الشكل ومحاطه بالماء من جميع الجهات. ( )

(٢) يعتبر القدماء المصرين اول من رسموا أقدم خريطة للنجوم عام ٩٤٠م. ( )

(٣) يعد ابن سينا من اشهر علماء العرب في الطب في عصره ومن أعظم مولفاته كتاب الحاوي . ( )

(٤) اليونانيين هم اول من وضع اول طريقة للتقطير في العالم ( )

(٥) يعتبر ابن يونس من الرواد الاوائل في علم التشريح. ( )

(٦) يعتبر كتاب التصريف في الطب من أهم انجازات ابن ملكا. ( )

(٧) يعتبر كتاب القانون المنصوري من اشهر مولفات الدينوري. ( )

(٨) يعتبر فيثاغورس أول من حدد القيمة التقريبية باي وقدرها بالقيمة ٣،١٤. ( )

(٩) اعتبر فيرنر بان الماء والنار هما المصادر الوحيدة لبناء الطبقات المتعاقبة المكونة للقشرة الارضية. ( )

(١٠) شيخ الجراحين أبو القاسم الزهراوي هو أول من استعمل الفتيلة في الجرح. ( )

السوال الثاني: **(١٠ درجة)**

(أ) تكلم عن مراحل الابداع والانتاج العلمي عند الحضارة الاسلامية؟

(ب) تكلم عن مرحلة الترجمة عند الحضارة الاسلامة ولماذا كانت تعتبر مفخرة للحضارة الاسلامية؟

السوال الثالث: **(١٠ درجة)**

(أ) اكتب شرح مبسط عن تطور علم الكمياء عند القدماء.

(ب) اعطي نبذة مختصرة عن تطور علم الارض عند العرب.

مع تمنياتي لكم بالتوفيق

أستاذ دكتور \ أحمد ماهر عبدالباسط

Faculty of Science — كلية العلوم

امتحان نهاية الفصل الدراسي الثاني (٢٠١٦- ٢٠١٧)م

كلية العلوم -- المستوى الأول

اسم المقرر ورمزه: رياضيات عامة (٢) (١٠٥ ر) الزمن: (ساعتان)

الدرجة النهائية : (٥٠ درجة) التاريخ: ٢٠١٧/٥/٢١م

(جيولوجيا البترول و الكيمياء الصناعية)

(الإختبار في ورقتين)

Part I : Planar Analytic Geometry

Answer the following question

1-a) Write the equation of the ellipse with foci at $(0, \mp 6)$ and a vertex at $(0, 10)$; and determine the lengths of the semi-major , semi-minor, and latus rectum . (5 marks)

-b) Given the hyperbola $16x^2 - 9y^2 - 32x - 18y = 137$. Determine the following:-

(i) The values of a , b , c , and e, (ii) The coordinates of the center , foci , and vertices

(iii) The lengths of the latus rectum , the transverse , and conjugate axes ,

(iv) The equations Of the principal axis and asymptotes for the hyperbola ;

(v) Find the equation of the conjugate hyperbola , and sketch both curves . (10 marks)

Answer one of the following two questions

2-a) Find the equations of bisectors of the angles formed by the lines $L_1 : x - 3y + 6 = 0$ and $L_2 : 4x + 2y = 9$ (4 marks)

-b) Change the equation $4x - 5y - 8 = 0$to the following forms :- (3 marks)

(i) The slope- intercept form , (ii)The normal form , (iii) The two – intercept form .

- c) Find the radical axis of the circles

$3x^2 + 3y^2 + 12x + 6y - 3 = 0$, $4x^2 + 4y^2 - 32x - 16y + 48 = 0$ (3 marks)

3-a)Find the equation of the circle that passes through points $(0, 0), (6, -2), and\ (-4, 8)$and give the radius of the circle and the coordinates of itscenter . (5 marks)

-b)Find the coordinates of the vertex and focus , the equations of the axis and directrix , and the length of the latus rectum of the parabola $y^2 + 8x - 6y + 25 = 0$. (5 marks)

Part II : Integration (12.5 marks for every question)

Answer two of the following three questions1-a) use integration by parts to evaluate each of the following integrals:

(i) $\int e^x sin2x\, dx$, (ii) $\int \frac{ln\, x}{\sqrt{x}}\, dx$, (iii) $\int (sec\, x)^3\, dx$

-b) Find the length of the Astroid curve : $x = a(cos\, t)^3$, $y = a(sin\, t)^3$

2 – a)Find the area of the region enclosed by the curves : $x = y^2$, $x = y$, $y = 0$, $y = 1$

-b)Drive the following reduction formula using integration by parts :

$$I_n = \int x^{\alpha}(ln\, x)^n\, dx = \frac{x^{\alpha+1}(ln\, x)^n}{\alpha+1} - \frac{n}{\alpha+1} I_{n-1}$$

انظر خلف الورقة

3 – a)Find the volume of the solid formed by rotating the region between the line : $y = \frac{R}{L}x$ and $X - axis$ *around* $X - axis$ *from* $(0,0)$ *to* (L,R)

-b) Use the method of completing the square along with a trigonometric substitution if needed to evalutate each of the following integrals :

(i) $\int \frac{1}{\sqrt{x^2+2x+5}}\,dx$, (ii) $\int \frac{1}{\sqrt{8+2x-x^2}}\,dx$, (iii) $\int \frac{2x+1}{x^2+2x+2}\,dx$

انتهت الأسئلة ،،،،،،،،،،،،،،،،،،،،،، بالتوفيق د. مديحة عبدالمجيد د. شاكر أحمد

Department of Mathematics		
Faculty of Science	جامعة أسيوط	كلية العلوم

امتحان نهاية الفصل الدراسي الثاني للعام الجامعي 2017/2016م

أسم المقرر :رياضيات (100ر) درجة الامتحان :50 درجة	الفرقة: المستوي الاول	الزمن : ساعتان

اولا التفاضل: أجب عن خمسة اسئلة فقط ممايأتي: (خمس درجات عن كل فقرة)

[1] أدرس اتصال الدالة الاتية عند النقطة $x=2$

$$f(x)=\begin{cases}\dfrac{x^2-4}{x-2} & , \quad x\neq 2\\ 3 & , \quad x=2\end{cases}$$

[2] أحسب قيم النهايات الاتية:

$$(i)\ \lim_{x\to 0}\frac{\tan 4x}{\sqrt{x+3}-\sqrt{3}} \quad , \quad (ii)\ \lim_{x\to 0}\frac{\sin^2 2x\,\sin 4x\,\tan^2 3x}{x^3\sin^2 x}$$

[3] أوجد المشتقة الاولي للدوال الاتية :

$$(i)\ y=(\sinh x^2+\log x).\tan^{-1}x\ , \qquad (ii)\ x^3+2x^2\sin y^2+3y^3=2$$

[4] استخدم التفاضل اللوغاريتمي في ايجاد المشتقة الاولي $\frac{dy}{dx}$ للدالة

$$y=\frac{(x-2)^2(x+4)^3}{(x+2)^3}$$

[5] إذا كانت $y=\cos(m\sin^{-1}x)$ فاثبت أن $(1-x^2)\frac{d^2y}{dx^2}-x\frac{dy}{dx}+m^2y=0$ حيث m مقدار ثابت.

[6] أوجد $\frac{dy}{dx}$ للدوال الاتية:

$$(i)\ y=(x^2+\tan x)^{\sin^{-1}x} \quad , \quad (ii)\ y=\frac{e^{4x}+\cosh 3x}{x^2-\sin^{-1}x}$$

ثانيا الجبر: أجب عن خمسة اسئلة فقط ممايأتي: (خمس درجات عن كل فقرة)

[1] باستخدام الاستنتاج الرياضي اثبت أن:

$$1^3+2^3+3^3+\ldots\ldots\ldots+n^3=\frac{1}{4}[n(n+1)]^2$$

[2] حلل الكسر الاتى $\frac{1}{x^2+3x+2}$ إلى كسوره الجزئية.

[3] اوجد الاربعة حدود الاولي في مفكوك المتسلسلة $(1+2x)^{\frac{1}{2}}$ ثم اوجد قيم x التي تجعل المفكوك صحيحا.

[4] اجمع المتسلسلة الاتية إلي n حدا:

$$\frac{1}{1\times 2}+\frac{1}{2\times 3}+\frac{1}{3\times 4}+\ldots\ldots\ldots+\frac{1}{n(n+1)}$$

[5] ابحث تقارب و تباعد المتسلسلة الاتية (اختر اثنين) :

$$(i)\sum_{n=1}^{\infty}\frac{x^n}{n!} \quad , \quad (ii)\ \sum_{n=1}^{\infty}\frac{4n^2-2n+6}{8n^5+n-8} \quad , \quad (iii)\sum_{n=1}^{\infty}\left(\frac{n}{3n+1}\right)^n$$

[6] باستخدام طريقة الحذف لجاوس أوجد حل نظام المعادلات الخطية:

$$\begin{aligned}x-y+z&=1\\ 3x+2y-2z&=-7\\ 2x-2y+z&=5\end{aligned}$$

انتهت الأسئلة مع أطيب التمنيات بالتوفيق و النجاح

لجنة الممتحنون :د/سماح جابر محمد

Department of Mathematics		قسم الرياضيات
Faculty of Science		كلية العلوم
امتحان نهائي الفصل الدراسي الثاني ٢٠١٦/٢٠١٧م		
التاريخ: ٢٠١٧/٥/٢١م	علوم	للفرقة: الأولى
الزمن : ساعتان	درجة الامتحان: ٥٠ درجة	اسم المقرر: ١٠٥ر

أولاً: التكامل أجب عن الاسئلة التالية:

(١)كون قانون اختزالي للتكامل $I_n = \int \cos^n x dx$ واستخدم ذلك في حساب $\int \cos^3 x dx$ (٥درجات)

(٢)أوجد المساحه المحصوره بين المنحني $y = \ln x$ والمحور الصادي والمستقمين $y = 1, y = 3$ (٥درجات)

(٣) احسب خمسة تكاملات من التكاملات الاتيه (كل فقرة ٣درجات)

$$(1)\int x \ln x \, dx \,, \quad (2)\int \frac{\cos x}{\sin^2 x + 2\sin x + 5} dx \,, \quad (3)\int \frac{\sqrt{\tan x}}{\sin x \cos x} dx$$

$$(4)\int \tan^3 x \sec^4 x \, dx \,, \quad (5)\frac{1}{\sin^{-1} x\sqrt{1-x^2}} dx \,, \quad (6)\int \frac{6(\ln x)^5}{x} dx$$

ثانيا: الهندسة (أجب عن خمس فقرات فقط -٥درجات عن كل فقرة):

(١) بين بالرسم المنحنيات الاتيه : $(i) r = -2\sin\theta \,, \quad (ii) r = 6\sec\theta$

(٢) اوجد معادلة المماس والعمودي للدائرة $x^2 + y^2 - 2x + y - 1 = 0$ عند النقطه (-1,2).

(٣) أثبت أن المجموعه $C: \{(r,\theta): r^2 - 3r(\sqrt{3}\cos\theta + \sin\theta) = 16\}$ تمثل دائرة وعين مركزها ونصف قطرها.

(٤) أرسم القطع المكافئ الاتي موضحا احداثيات البؤرة والدليل والراس . $(y-3)^2 = 6(x-2)$

(٥)أكتب معادلة القطع الناقص الاتي في الصورة القياسية : $9x^2 + 25y^2 - 18x + 100y - 116 = 0$ ثم عين احداثيات رأسيه وبؤرتيه ومعادلة الدليلين والاختلاف المركزي.

(٦)أوجد معادلة القطع الزائد الذي مركزه نقطة الاصل وينطبق محورة القاطع علي y وطول وتره البؤري العمودي $\frac{32}{3}$ واختلافه المركزي $\frac{5}{3}$

انتهت الأسئلة مع أطيب التمنيات

منسق المادة: د. عبد الله الصفتي

د . سعاد علي حسن