Faculty of Education - Assiut University
Time: 2 hours
Marks: 50

2nd Semester –Final 2023
Computer (MC 100)
1st level

Important remarks
- No. of pages: 2 – Solve in Bubble Sheet.
- 2 marks for each point.

Q1. Choose the correct answer (30 marks)

1. What would be the output of the following code (in editor window)?

a = [1 0 2] ; b = [3 0 7] ; c=a.*b

a) 17 b) 3 0 14 c) 14 0 3 d) error

2. What is the command that return matrix containing the slope and the x intercept for a linear fit?

a) polyval b) polymatrix c) polyfit d) linearfit

3. In the flowchart, a parallelogram circle ○ is used to represent a .....

a) Start / Stop b) connector c) Process d) Loop

4. A shape that can represent two different conditions in flowchart is a .....

a) Rectangle b) Diamond c) Circle d) Parallelogram

5. If .....then.....elseif.....else .....endif

a) one condition b) two conditions c) three conditions d) four conditions

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- Consider the M-file and the code as follow, answer questions 6,7,8:

```
function out = squarer(A, ind)
if ind == 1
    out = A^2;
    elseif ind == 2
    out = A.^2;
end
```

```
A = ones(2,2);
out1 = squarer(A, 1)
out2 = squarer(A, 2)
```

6. What must be the name of the M-file?

a) A b) out c) squarer d) any name

7. What is the value of out1?

a) 1 1
1 1

b) 2 2
2 2

c) 1 0
0 1

(d) 4

8. What is the value of out2?

a) 1 1
1 1

b) 2 2
2 2

c) 1 0
0 1

(d) 4

9. We use command ---------- for condition sentences.

a) for b) if c)while (d) elseif

10. To ask the user via if statement that, x not equal y we write

a) x .noteq. y b) x ~= y c) x not= y (d) x ≠ y

11. Which command is used to slow down the execution in the M-file?

a) cancel b) wait c) pause (d) stop

12.We can view the folders from the .....

a) Command Window b) Current Directory c) Command History d) Workspace

13.If you need to use a saved array, you can find it in the .....

a) Command Window b) Current Directory c) Command History d) Workspace

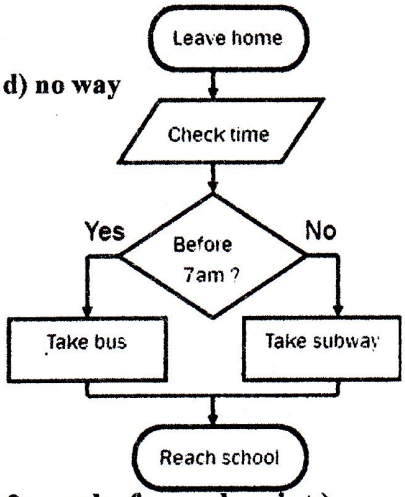
14. The flowchart (X) is a ..... Flowchart.

a) sequential b) selecting c) Loop d) Repetition

15. In the flowchart (X), When he must leave home to reach school?

a) after 7am b) before 7am c) any way d) no way

The flowchart (X):



Q2. Choose T the correct sentence or F for the wrong one (20 marks : 2 marks for each point)

16. The vector $x = -1{:}\,0.2{:}\,0$ is the same as $x = linspace(-1, 0.2, 0)$.

17. The shapes in the flowchart (X) are all correct.

18. The command solve is used to find the solution for the differential equation.

19. Drawing functions in MATLAB is by using draw command.

20. We use the command "syms" to identify the numeric characters.

21. Zeros(1,5)*Zeros(3,1) outputs 5x3 zero matrix.

22. We can show the sequence of steps in an algorithm in a structural diagram called a flow chart.

23. Find(x>2) is used to display the values greater than 2.

24. The Algorithm is a set of instructions in order.

25. >>1:2:10 is used to print the even numbers between 1 and 10.

The Egyptian Arabic Republic
Ministry of Higher Education
Assuit University
Faculty of Science
Mathematics Department

Second semester of the year 2022/2023
Date: Sunday 04/06/2023
Groups : First Science
Period: 9-11 - Time: Two hours

Final Examination for General Mathematics 105 r

الإختبار النهائي لمادة الرياضيات العامة 105ر (التكامل والهندسة التحليلية)

أولا: التكامل (25 درجة) (أجب عن الأسئلة الآتية)

First Question:- (8 Markes)

أجب عن أربعة فقرات فقط من الفقرات التالية:-

$(i) \int sinh^5 x\ cosh^3 x\, dx$ $(ii) \int tan^5 x\ sec^4 x\, dx$ $(iii) \int x \cos x\, dx$

$(iii) \int_1^2 \frac{x-2}{x^2-2x+3}\, dx$ $(iv) \int sinh^{-1} x\, dx$ $(v) \int_0^{\frac{\pi}{2}} \sqrt{36-x^2}\, dx$

Second Question:- (8 Markes)

أوجد الصيغة الاختزالية للتكاملات التالية:- $\int x^n ln\, x dx$, $\int cos^n x\, dx$ ومنها أوجد التكاملات التالية:-

$(i) \int cos^4 x\, dx$ $(ii) \int x^3 ln\, x dx$

Third Question:- (9 Markes)

(1) أوجد المساحة المحصورة بين المنحني $y = 2x^2$ والخطين المستقيمين $x = 4,\ x = 0$ والمحور الافقي مع الرسم.

(2) أوجد حجم المخروط الناتج من دوران المساحة المحصورة بين الخط المستقيم المعطى بالمعادلة $y = x$ والخطين المستقيمين الرأسيين $x = 4,\ x = 0$ والمحور الافقي دورة كاملة حول محور السينات موضحاً ذلك بالرسم.

Fourth Question:- (25 Markes)

ثانياً: الهندسة التحليلية (25 درجة) (أجب عن الأسئلة الآتية)

(1) أوجد على الرسم حل المتباينات الآتية: $y - x \geq 0,\ y + x \geq 0,\ 1 \leq y \leq 3$.

ثم أوجد محيط المنطقة الناتجة من حل المتباينات. (5 درجات)

(2) أوجد مركز ونصف قطر الدائرة: $r^2 - 3r\cos\theta - 3r\sqrt{3}\sin\theta = 16$. مع الرسم (5 درجات)

(3) أوجد معادلة المحور الأساسي للدائرتين:

$F_1: x^2 + y^2 = 2x,\ F_2: x^2 + y^2 - 2x - 6y + 6 = 0$ ثم إثبت أنهما متماستان. (5 درجات)

(4) أوجد احداثي الرأس والبؤرة ومعادلة الدليل ومعادلة المحور وطول الوتر البؤري العمودي للقطع المكافئ:

$(y-4)^2 = 8(x-3)$. (5 درجات)

(5) أوجد احداثي الرأسين والبؤرتين ومعادلة الدليلين والاختلاف المركزي للقطع: $25x^2 + 9y^2 = 225$ ثم أوجد نقطتي نهايتي الوتر البؤري العمودي في الربع الأول و الربع الثاني. (5 درجات)

"With our best wishes" Dr. Sayed Attia Ahmed && Dr. Mansour Elsayed Ahmed

Department of Mathematics		قسم الرياضيات
Faculty of Science		كلية العلوم
امتحان نهاية الفصل الدراسي الثاني ٢٠٢٢/ ٢٠٢٣م		
للفرقة: الأولى	علوم	التاريخ: ٤/ ٦/ ٢٠٢٣م
اسم المقرر: ١٠٠ر	درجة الامتحان: ٥٠ درجة	الزمن: ساعتان

أجب عن عشر فقرات فقط مما يلي (كل فقرة ٥ درجات):

(١) إذا كانت : $g(x)=x^2+2$, $f(x)=\sqrt{x-2}$. أوجد

$$(gof)(x)\ ,\ (fog)(x),\ D_{(fog)(x)}$$

(٢) أوجد قيمة c التي تجعل الدالة التالية متصلة عند النقطة $x=0$:

$$f(x)=\begin{cases}\dfrac{3x+\tan 2x}{\sin 4x}, & x\neq 0\\ \\ c\ , & x=0\end{cases}$$

(٣) اذا كانت $y=\sin x$ فاثبت انه $\dfrac{dy}{dx}=\cos x$ ومن ثم أحسب المشتقة النونية $y^{(n)}$.

(٤) أحسب قيم النهايات التالية: $(i)\ \lim\limits_{x\to\frac{\pi}{2}}(\sec x-\tan x),$ $(ii)\ \lim\limits_{x\to 0}\left(\dfrac{1}{x}\right)^{\sin x}$

(٥) أحسب المشتقة الأولى $\frac{dy}{dx}$ للدوال التالية:

$$(i)\ y=e^{\tan^{-1}\left(x^2+1\right)}+\cos ec\sqrt{x^2+1},\qquad (ii)\ \sec(xy)+y^2x-3x=0$$

(٦) أحسب المشتقة الأولى للدوال التالية:

$$(i)\ y=\left(\frac{1-\cos x}{\sin e^x+3}\right)^{\cosh x},\qquad (ii)\ y=3^{t^2}+2,\quad x=\tanh^{-1}(t+1)$$

(٧) اكتب نظرية ليبنتز لايجاد المشتقة النونية لحاصل ضرب دالتين ثم اوجد التفاضل النوني للدالة: $y=x^3e^{2x}$

(٨) حلل الكسر الاتي الي كسورة الجزيئة: $\dfrac{3x+2}{x(x-1)^2}$.

(٩) إستخدم الإستنتاج الرياضي في إثبات صحة العلاقة الأتية :

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

(١٠) إستخدم الإستنتاج الرياضي في إثبات ان n^2+n+2 يقبل القسمة على 2 لجميع قيم n الصحيحة الموجبة.

(١١) ادرس تقارب وتباعد المتسلسلات الاتية: $(i)\sum_{n=1}^{\infty}\frac{n}{n+1}$, $(ii)\sum_{n=1}^{\infty}\frac{4-n}{n^3+1}$, $(iii)\sum_{n=1}^{\infty}\left(\frac{n}{3n+1}\right)^n$

(١٢) حدد نوعية الحل لنظام المعادلات الخطية الاتية ثم أوجده اذا امكن ذلك :

$$x+3y-2z=-3,\ \ 2x-2y+z=7,\ \ 3x+y+z=6,$$

انتهت الأسئلة مع دعواتنا لكم بالتوفيق والنجاح

أ. د/ خلف عبد الحكيم & أ. د/ حمدى نور الدين

Department of Mathematics Faculty of science		قسم الرياضيات كلية العلوم
امتحان الفصل الدراسي الثاني للعام الجامعي 2022 / 2023 م		
الزمن: ساعتان التاريخ 14/ 6 / 2023 م	الكلة : العلوم طلاب البرنامج الخاص (النانو)	اسم المقرر : رياضيات 2 (105) درجة الامتحان : 50 درجة

أجب عن الأسئلة الاتية علما بان الدرجة موزعة بالتساوي.

السؤال الأول : أوجد قيم التكاملات الاتية

$$(i)\int \frac{dx}{xlnx} \qquad (ii)\int secx\,dx \qquad (iii)\int e^{x}sinx\,dx$$

$$(iv)\int_{2}^{3}\frac{dx}{(1+x^{2})tanx}$$

السؤال الثاني:

1. أوجد قيمة التكامل $\int_{0}^{\frac{\pi}{2}}(1+tanx)dx$
2. أوجد حجم المخروط القائم الذي نصف قطر قاعدته **R** وارتفاعه **L** .

السؤال الثالث:

1. اوجد طول قوس المنحني : $x = acos^{2}t \quad , \quad y = asin^{2}t$

2- أوجد معادلة المحور الأساسي للدائرتين :

$F_1: x^2 + y^2+x+2y+3=0$, $F_2: x^2 + y^2+2x+4y+5=0$

ووضح انه عمودي علي خط المركزين.

السؤال الرابع:

1. أوجد معادلة القطع المكافئ الذي محورة هو المحور الرئيسي ويمر بالنقاط (0,0), (3,6), (1,0), .
2. أوجد معادلتي المماس والعمودي للقطع الناقص $\frac{x^2}{4}+\frac{y}{9}=1$ عند النقطة $(1, -4\frac{\sqrt{2}}{3})$

مع تمنياتنا بالتوفيق والنجاح

أ.د. أحمد ماهر عبدالباسط

Faculty Of Commerce
Business Administration department
Pages #: 4 pages

Exam Committee
Dr. Dalia Samir
Exam date: 3/6/2023

Assiut University
Subject: Quality Assurance
Exam time: 2 hours

Name: ----------

Answer the following questions:

Question One: true or false : (True = A/ False = B):

1. One of the major benefits of applying ISO is the reduction of non-conforming products.
2. Total quality management involves factual approach to decision making process.
3. Quality assurance is mainly the responsibility of operation management.
4. Quality means continuous improvements.
5. Quality begins with satisfying customers' requirements.
6. Applying ISO doesn't involve too much cost.
7. Employees' improvement training should be conducted at all levels to enhance quality.
8. Defects are prevented when concentrating on planning and design stage.
9. Quality assurance is a separate part from all organizations' processes and functions.
10. Total quality management involves a reactive approach only.
11. The quantitative term of quality involves sampling inspection.
12. Elimination of surplus procedures helps to minimize waste.
13. Minimum level of communication is required when applying quality inside the organization.
14. Inspection is an aspect of quality involves directing organizational efforts towards planning and preventing problems from occurring at source.
15. Every person in the organization can take personal responsibility for the process of quality.
16. There is no limit to enhance quality.
17. Tolerance limits of products express quality.
18. Customers share the responsibility of quality.
19. Employee individual work is considered the base of applying quality in the organization.
20. Eliminating the root causing the problem is the main job of inspection.
21. The purpose of quality management system is to establish reference points to ensure that a process is performed every time in the same way.
22. In total quality management, there is no single route leading to success.
23. It is not acceptable in terms of quality to be outside marginal specification limit.
24. Quality management is concerned with the consistency of information, methods, skills, and controls of various processes.
25. Total quality management can be applied with different management styles and different corporate cultures.
26. Quality control involves operating in a detection type mode.
27. Total quality management involves a proactive approach only.

28. Implementing ISO means the Job is done the same way, time after time, and best approaches are shared.
29. Organizations can measure their performance based on the level of their customer satisfaction.
30. It is the market responsibility to ensure that adequate requirements are created and specified within the organization.
31. It is not necessary to document activities regarding quality management to apply ISO.
32. One of the indicators of total quality management is the time taken by the organization to respond to customer problems.
33. Inspection involves advanced quality planning.
34. ISO means the job is done in any way and best practices are shared.
35. One of the most important techniques to measure quality is self-assessment.
36. Fitness of quality purpose involves quality of conformance.
37. Fewer procedures and less work instructions are required with applying quality in large companies.
38. It is not necessary to train employees when applying total quality management.
39. Cost and quality are complementary objectives.
40. Implementing ISO is concerned with how to implement the steps rather than measuring the time taken to perform the task.
41. Focusing on fitness for use helps to prevent the over-specification of products and services.
42. Employees' lack of understanding of quality is one of the major obstacles to apply quality.
43. Quality and service improvements can be directly and logically linked to enhanced revenues.
44. Resistance to change affects the progress of implementing quality.
45. Reduction of the time taken to perform the job saves a lot of resources.

Question Two: choose the best answer:

46. **There are number of ways in which quality may be defined, all of the following are considered one of them except.....:**
    a. Satisfying customer expectations and understanding their needs.
    b. Uniformity of product characteristics.
    c. Not necessary that every item inspected meet quality level.
    d. To define product quality in terms of poor, good, or excellent.
47. **Quality assurance is .....:**
    a. Assignment of roles and responsibilities of each function within the organization.
    b. Determining customer needs.
    c. Determining the requirements of planning, designing, production, delivery, and after sale services.
    d. All of the above.
48. **To answer the question of how will the organization know when it has achieved total quality management.....:**
    a. Total quality management is a continuous process.
    b. It is the ability of the organization to respond to changing customer needs.
    c. It is considered as a race with no finishing line.
    d. All of the above.

49. All of the following is a ranking factor that people consider important when they purchase a product except.....:

a. Price.
b. Appearance.
c. Ease of repair and after sale service availability.
d. Inspection and quality control at the assembly line.

50. All of the following are considered among the factors that lead to a lot of time needed to apply ISO except.....:

a. The complexity of work location.
b. The type and number of production processes.
c. Employees' lack of understanding about the product/service quality.
d. None of the above.

51. Which of the following best describe integrating quality to management functions inside the organization.....:

a. To link directly to customer groups.
b. To permeate every function of an organization and to integrate with each department activities.
c. To develop measures of customer satisfaction.
d. All of the above.

52. Which of the following are considered main advantages of adopting quality standards.....:

a. One can negotiate the levels of product quality.
b. Cost, productivity, and quality improvements can be alternative objectives.
c. Quality means improved business performance.
d. Organization can adapt quality objectives for short term.

53. Quality management system provides all of the following except.....:

a. The consistency of performing a process.
b. Determining the recruitment process.
c. To communicate policies and procedures.
d. Monitor to improve teamwork.

54. The progress of applying total quality management can be assessed by.....:

a. The number of customers.
b. The number of employees.
c. Comparing with other companies.
d. The number of procedures.

55. The right order of evolution of quality management.....:

a. Quality control - Quality assurance - Inspection - Total Quality Management.
b. Total Quality Management - Quality control - Inspection - Quality assurance.
c. Inspection - Quality control - Quality assurance - Total Quality Management.
d. Quality assurance - Inspection - Quality control - Total Quality Management.

56. Of the difficulties of applying ISO.....:

a. Lack of flexibility.
b. The complexity of terminology used.
c. The degree of employees understanding of standards.
d. All of the above.

57. All of the following are considered as in – house measures of quality except.....:

a. Frequency of failures.
b. Time taken to respond to customers' problems.
c. Total quality costs.
d. None of the above.

58. All of the following is considered of the main principles of quality management as defined by ISO 9000 except.....:

a. People at all levels get involved to enhance their abilities in order to enhance quality.
b. Activities should be achieved in short period of times without any regards of quality aspects.
c. Developing a system approach for all processes to contribute to organization's effectiveness and efficiencies.
d. Decisions are based on the analysis of data.

59. All of the following are considered among the benefits of applying ISO except.....:

a. Reduction of errors and customers' complaints.
b. Reduction of ineffective and surplus procedures.
c. The degree of applicability of standards.
d. Better working environments.

60. All of the following are considered as a measure of quality except.....:

a. The level of training inside the company.
b. Attitudes of management.
c. Comparing to a high standing company.
d. The degree or amount of paper work.

Best Wishes,,,
Dr. Dalia Samir