International University - VNUHCM
School of Industrial Engineering and Management

Midterm Examination

Date: 14/11/2023; Duration: 90 minutes
Open book; **Offline.**

SUBJECT: INTRODUCTION TO COMPUTING (ID:IS086IU)	
Approval by the School of Industrial Engineering and Management Signature  Full name: Nguyễn Văn Hợp	Lecturer: Signature  Full name: Nguyễn Lập Luật
Proctor 1 Signature Full name:	Proctor 2 Signature Full name:
STUDENT INFO	
Student name: **Student ID:**	

INSTRUCTIONS: the total of point is 100 (equivalent to 30% of the course)

1. *Purpose:*
   - Apply knowledge of mathematics, science and engineering (CLO1)
   - Design and conduct experiments, as well as to analyze and interpret data (CLO2)
   - Use the techniques, skills, and modern engineering tools necessary for engineering practice (CLO3)
2. *Requirement:*
   - Read carefully each question and answer it following the requirement.

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- In each question, **the script/function** and **screenshots of your result** must be attached in the word file and submit in Blackboard
- ONLY LECTURE NOTES allowed.
- Discussion and material transfer are strictly prohibited
- Any violation will be considered as cheating and will receive ZERO of this course.

QUESTIONS

Q1. (20 marks)

Enter a number N from command windows. Writing script to find the sum of all even numbers from 1 to N.

Example:

>> yourname – ID

Enter N: 15

Sum of all even number from 1 to N is: 56

```
user = input('Please input: ');
sum = 0;

for i = 1:user
  if mod(i , 2) == 0
    sum = sum + i;
  endif
end

disp(sum)
```

Q2. (20 marks) Write a MATLAB script file (***yourfirstname_Q2.m***) to:

```
A = [1.6 3.1 3.4 0.6 ; 0.6 5.1 -0.6 3.1 ; -4.5 0.6 5.5 0 ; 3

max_columns = max(A)
min_columns = min(A)

max_rows = max(A, [], 2)
min_rows = min(A, [], 2)

row_sums = sum(A, 2)
total_sum = sum(A(:))
```

a. create the following matrix A (2 marks)

$$A = \begin{bmatrix} 1.6 & 3.1 & 3.4 & 0.6 \\ 0.6 & 5.1 & -0.6 & 3.1 \\ -4.5 & 0.6 & 5.5 & 0 \\ 3.7 & 7.6 & 9.1 & 5.8 \\ 5.1 & 3.5 & 1.7 & 3.8 \end{bmatrix}$$

b. Write a MATLAB code to find the maximum and minimum values in each column of Matrix A (3 marks)

c. Write a MATLAB code to find the maximum and minimum values in each row of Matrix A. (5 marks)

d. Write a MATLAB code to sum all of values in each row of Matrix A. (5 marks)

e. Write a MATLAB code to sum all of values in Matrix A. (5 marks)

Q3. (10 marks)

Write a MATLAB script file to create the following matrix A with input N from command window:

$$A = \begin{matrix} 1 & 2 & 3 & 4 & .. & N \\ 2 & 4 & 6 & 8 & .. & 2*N \\ 3 & 6 & 9 & 12 & .. & 3*N \\ 4 & 8 & 12 & 16 & .. & 4*N \\ .. & .. & .. & .. & .. & .. \\ N & 2*N & 3*N & 4*N & .. & N*N \end{matrix}$$


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