TAYLOR'S

SCHOOL OF PRE-UNIVERSITY STUDIES
FOUNDATION PROGRAMMES

WRITTEN TEST 2 (SET 4) / 10%
AUGUST 2022 SEMESTER

MODULE NAME	: INTRODUCTION TO ALGORITHM
MODULE CODE	: ITS30705
TIME	: 1 HOUR
This paper consists of <u>THREE (3)</u> printed pages.	

Student Name   **Student ID**

Section Group   **1 / 2 / 3 / 4 / 5**

Instruction to Candidates:

1. Answer all questions in the paper. Create a Python file for each question, name it based on the question.
2. Non-programmable electronic calculators may be used.

Plagiarism

3. This is a closed book examination, no notes are permitted. You are forbidden from using any media to communicate with other students.
4. Severe disciplinary action will be taken against those caught violating examination rules.

Question 1 (3 Marks)

Write a Python program that ask user for a non-negative integer and check whether the integer is divisible by both 4 and 9.

Question 2 (5 Marks)

Write a Python program that ask user their GPA to calculate their CGPA and the program will stop when the user enter "done".

Expected output:

```
Type in a your GPA for each semester or "done" to calculate your final
CGPA
Semester 1 GPA: 3.22
Semester 2 GPA: 2.98
Semester 3 GPA: 3.78
Semester 4 GPA: done

Your CGPA is 3.33
```

Question 3 (5 Marks)

Write a program that check whether the employee can receive a raise or not. The program accepts the number of days the employee came to work and the total number of days they should be working. The employee will not receive a raise if the attendance is less than 80%.

Expected Output:

```
Employee Name >> Ginger
Number of days Ginger worked >> 78
Number of days Ginger should be working >> 90

Ginger can receive a raised (Attendance: 86.67%)
```

Question 4 (5 Marks)

Given a list with dictionaries of employee name and their preferred work environment. Write a Python program code that access the dictionary and list the employee that preferred to work onsite.

Expected Input:
```
employee_list = [{"employee_name":"Sarah","preferred_work":"online"},
                 {"employee_name":"Jonathan","preferred_work":"onsite"},
                 {"employee_name":"Dylan","preferred_work":"onsite"},
                 {"employee_name":"Benjamin","preferred_work":"online"},
                 {"employee_name":"Alice","preferred_work":"onsite"},
                 {"employee_name":"Rosa","preferred_work":"online"}
                 ]
```
Expected Output:
```
The list of employees that preferred to work onsite >>
1. Jonathan
2. Dylan
3. Alice
```

Question 5 (7 Marks)

Write a function called remove_duplicates that takes a sorted list of numbers and removes any duplicates. For example, if it is called on the following list:

```
data = [-2, 1, 1, 3, 3, 3, 4, 5, 6, 78, 78, 79]
```

after the call the list should be

```
data = [-2, 1, 3, 4, 5, 6, 78, 79]
```

Question 6 (5 Marks)

Using recursion function, write a Python program that calculate the sum of a list numbers.

Expected Input:
```
list_num = [90, 34, 67, 12, 59]
```

- **END OF QUESTION PAPER** -