SCHOOL OF PRE-UNIVERSITY STUDIES
FOUNDATION PROGRAMMES

WRITTEN TEST 1 (SET 2) / 10%
AUGUST 2022 SEMESTER

MODULE NAME	**: INTRODUCTION TO ALGORITHM**
MODULE CODE	**: ITS30705**
TIME	**: 1 HOUR**
This paper consists of THREE (3) 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.

DO NOT TURN THIS PAGE UNTIL INSTRUCTED TO DO SO.
TO BE RETURNED AT THE END OF THE TEST.

Question 1 (3 Marks)

Write a Python program to check whether a person is eligible for voting or not. (*Note: The age for voting is 18*)

Question 2 (5 Marks)

Write a Python program that accept number of units from user. The input is passed to a function that calculate the electricity bill and return the total bill amount. The following table are the criteria for the electric bill. (*For example, if input unit is 350 than total bill amount is RM 305.00*).

Unit	Price
First 100 units	No Charge
Next 100 units	RM0.80 per unit
After 200 units	RM1.50 per unit

Question 3 (5 Marks)

Using a while loop, write a program that going to run until the user enters a value higher than 10.

Question 4 (5 Marks)

Given a list with dictionaries of students ID and their CGPA. Write a Python program code that access the dictionary and list the student that have CGPA more than 3.

Expected Input:

```
student_list = [{"std_id":"035721","cgpa":"3.4"},
                {"std_id":"036013","cgpa":"2.8"},
                {"std_id":"039026","cgpa":"2.2"},
                {"std_id":"037843","cgpa":"4.0"},
                {"std_id":"031284","cgpa":"3.7"},
                {"std_id":"038032","cgpa":"1.8"}
               ]
```

Expected Output:

```
The list of students with CGPA more than 3.0 >>
1. 035721
2. 037843
3. 031284
```

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 to calculate the value of ‘a’ to the power ‘b’.

- END OF QUESTION PAPER -