



**SCHOOL OF PRE-UNIVERSITY STUDIES
FOUNDATION PROGRAMMES**

**WRITTEN TEST 2 (SET 3) / 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 TES**

Question 1 (3 Marks)

Write a Python program that ask user for three number and return the maximum numbers between the numbers entered.

Question 2 (5 Marks)

Write a Python program that ask user their salary income to calculate their income tax where the income tax is 5% from their salary. The program only ends when the user enters -1.

Question 3 (5 Marks)

Write a Python program that accept age, gender, and number of days that calculate the total wages to be accepted based on the number of days and display the total wages. If the age does not fall in any range, then display message “Enter appropriate age”.

Age	Sex	Wage/day
18 – 29	M	700
	F	750
30 – 40	M	800
	F	850

Question 4 (5 Marks)

Given a list with dictionaries of employee name and their salary. Write a Python program code that access the dictionary and list the employee that have a salary above 50,000.

Expected Input:

```
employee_list = [{"employee_name": "Sarah", "salary": "28000"},  
                  {"employee_name": "Jonathan", "salary": "80000"},  
                  {"employee_name": "Dylan", "salary": "57000"},  
                  {"employee_name": "Benjamin", "salary": "32000"},  
                  {"employee_name": "Alice", "salary": "20000"},  
                  {"employee_name": "Rosa", "salary": "89000"}  
                ]
```

Expected Output:

```
The list of employees with salary more than 50,000 >>  
1. Jonathan  
2. Dylan  
3. Rosa
```

Question 5 (7 Marks)

Write a Python program where the program asks the user to input the GPA for each semester and the program will stop when the user enter “done”. Write a function called *average_gpa*

that takes all the GPA entered and calculate the average GPA and calculate the number of GPA that have above average.

Expected output:

Type in the GPA for each semester or "done" to finish

Semester 1 GPA: 4.00

Semester 2 GPA: 3.21

Semester 3 GPA: 3.88

Semester 4 GPA: 2.14

Semester 5 GPA: 3.77

Semester 6 GPA: 2.67

Semester 7 GPA: 3.50

Semester 8 GPA: done

Average GPA = 3.31

4 semester were above average.

Question 6 (5 Marks)

Using recursion function, write a Python program that calculate the factorial of a non-negative integer.

– END OF TEST PAPER –