



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

**WRITTEN TEST 2 (SET 1) / 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.

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**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 the grade of the mark.

*Note: A[80-100], B[60-79], C[40-59], F[0-39]*

### Question 2 (5 Marks)

Write a Python program that accept three sides of a triangle and check whether the triangle is an equilateral, isosceles and scalene triangle.

*(Note: An equilateral triangle is a triangle which all three sides are equal, a scalene triangle is a triangle that has three unequal sides, an isosceles triangle is a triangle with two equal triangle)*

### Question 3 (5 Marks)

Using a while loop, write a program that going to run until the user enters a value higher than 50.

### Question 4 (5 Marks)

Given a list with dictionaries of courses the student takes and his marks. Write a Python program that access the dictionary and list the courses that the student scores more than 70.

Expected input:

```
Student = [{"course": "Malay", "mark": "75.6"},
            {"course": "English", "mark": "56.4"},
            {"course": "Mathematics", "mark": "81.2"},
            {"course": "Science", "mark": "68.8"},
            {"course": "History", "mark": "99.4"},
            {"course": "Arts", "mark": "24.0"}
            ]
```

Expected Output:

```
The courses that the student scores more than 70 >>
1. Malay
2. Mathematics
3. History
```

### Question 5 (7 Marks)

Write a Python program where the program asks the user to input the temperature of the day and the program will stop when the user enter "done". Write a function called *average\_temp* that takes all the temperature entered and calculate the average temperature and calculate the days that have the temperature above average.

Expected output:

```
Type in a temperature or "done" to finish
Day 1's high temp: 45
Day 2's high temp: 44
Day 3's high temp: 39
Day 4's high temp: 48
Day 5's high temp: 37
Day 6's high temp: 46
Day 7's high temp: 53
Day 8's high temp: done
Average temp = 44.6
4 days were above average.
```

### Question 6 (5 Marks)

Write a function called *merge* that accepts two lists of integers and returns a new list containing all elements of the first list followed by all elements of the second.

Expected input:

```
a1 = [12, 34, 56]
a2 = [7, 8, 9, 10]
```

Expected output:

```
[12, 34, 56, 7, 8, 9, 10]
```

--- END OF TEST PAPER ---