**KABETE TECHNICAL TRAINIG INSTITURE**

**STRUCTURED PROGRAMMING**

*ANSWER ALL QUESTIONS :*

**Question 1 (25 Marks)**

a) State **Four** advantages of modular programming [4 Marks]

b) Distinguish between

i) Machine and high level languages

ii) Visual and Object oriented programming [4 Marks]

c) Explain **the following functions** [3 marks]

i) Ord(‘A’)

ii) Pred(‘C’)

iii) 36 mod 15

d) Draw flowchart diagram for the following control structures.

1. FOR LOOP
2. WHILE LOOP
3. NESTED… IF [9 marks]

e) state five rules of Variables [5 Marks]

**Question 2 (20 Marks)**

(a)Write a **C** program to calculate the sum and the average of three numbers input from the keyboard using a function, [6 Marks]

b) Define the following terms as used in programming

* 1. List the three parts of a Loop
  2. Write the syntax of the following: [4 Marks]

a)Conditional statement

b)Function call

1. Write a Pascal program to find the average of all numbers divisible by 2 between 4 and 44. (4 Marks)
2. List stages of program development. (4 Marks)
3. Give two differences between interpreter and compiler. (2 Marks)

**Question 3 (25 Marks)**

a) The following table shows the relationship between the student score range and grades.

**Score range Grade**

80 to 100 A

70 to 79 B

60 to 69 C

50 to 59 D

Below 50 F

Write a **C** program using ***if.. else if*** statements that will prompt for score and then display the corresponding grade. [5 Marks]

b)Write a **C** program that would be used to produce the following output. Use a tab width of 5 and a for loop control structure [4 marks]

1

1 2

1 2 3

1 2 3 4

1. 2 3 4 5 6

c)State two advantages of compilation over interpretation [ 2 Marks]

d)Differentiate the following

1. The arithmetic operators **Div** and **Mod**
2. Variable and constants
3. Write and writeln
4. Read and readln [4 Marks]

e)Write a C program that can accept and output 10 elements. Use one dimension array

[5 Marks]

f)Write a **pascal** program that will accept three numbers and determine the larger number among three integers using a procedure [ 5 Marks]

**Question 4 (30 Marks)**

(a) The unit price of a particular product is £15 if less than 10 units are purchased, £14 if between 10 and 49 are purchased and £ 13.80 or more are purchased. If the customer also has preferred customer status the purchase is subject to a discount of 10%.

**Required – Construct**

1. Flowchart
2. A Pascal program - for the above information [6 Marks]
3. Explain the following [ 4Marks]

a)Control Structure

b)Infinite Loop

b) Write a **C** program that could generate the following output. Use for loop control structure [5 marks]

1 2 3 4 5

2 4 6 8 10

3 6 9 12 15

4 8 12 16 20

5 10 15 20 25

c) Write a C Program that accepts an integer, the program should then compute and output the factorial of the integer through a function [ 5marks]

d) write a pascal program that can accept and output 20 student records given the following:

Name,admno,Age, Department,course and Address [5 Marks]

e) Write a **C** program that accepts an integer n. The program should then compute and output the sum of all the multiples of 2 in the range 0 to n. Use ***While…do*** control structure [5 Marks]