**KABETE NATIONAL POLYTECHNIC**

**CAT DICT 17 sep 1st TERM**

**2 HOURS**

**STRUCTURED PROGRAMMING**

***Answer All Questions***

1) Write a **C** program that can **accept** an integer and determine if it is odd or even [3 Marks]

2) Write a **pascal** program that will accept three numbers and determine the larger number among three integers [4 Marks]

1. Draw a flowchart for question 2 above [4 Marks]

 (3) Write the output of K in each of the following Pascal statements

1. K: = Trunc (45.778);
2. K: = succ(‘b’);
3. K: = Pred (5)
4. K: = abs (-5);
5. K: = Round (3.6);
6. Ord(‘A’) ( 2 Marks)

3) Describe the **pascal** program structure (2 Marks)

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

**MARKS GRADE**

80 to 100 A

70 to 79 B

60 to 69 C

50 to 59 D

0 to 50 F

Write a **C** program using ***nested.. if*** statement that will **prompt** for marks and then display the corresponding grade. [5 Marks]

6) State **four** characteristics of assembly programming language (2 Marks)

7)State **four** rules of identifiers (4 marks)

9)Explain the three types of errors (3 marks)

10) Write a **Pascal** program to calculate the area of circle (4 marks)

11)differentiate between modular programming and monolithic programming paradigms (1 marks)

12)state two differences between interpreter and compiler. (1 Marks)

13)The total surface area of a solid cylinder is given by the formula $π$ r2 + 2$ π$rh. Given height (h) and radius(r) as input.

1. Draw a flowchart to depict an algorithm to calculate the total surface area of a cylinder
2. Marks)
3. Write a program to implement the flowchart in Question 13 (i) ( 5 Marks)