COMPUTER PROGRAMMING I GROUP (5) LAB(1) 12224

BY

NAME–SURNAME:

Student ID:

DATE: 01.11.2022

LAB INSTRUCTION

• LAB Mode: INDIVIDUAL.

• The font must be ARIAL and the size must be 12. JUSTIFY. SPACING 1.5. • Kindly use YOUR NAME, SURNAME, and DATE as a variable in your answer • Complete the cover sheet and attach it to your lab as (first page). • Answer lab with own work (No Plagiarism).

• Your marks will be deducted in the case of:

- Late submission.
- Plagiarism.
- Different instruction.

[P/S: There may be more than one error in each piece of code.]

LAB QUESTIONS

1. What does the following program print? A.

```
· #include <stdio.h>
· int main( void )
· { int x = 1;
· int y = 0;
· while ( x <= 5 )
· total+= x * x;
· printf( "%d\n", x*x);
· ++x; }
· printf( "Total is %d\n", total);
```

B.

```
· #include <stdio.h>
· int main( void )
· { int outer_count = 1;
· while ( outer_count <= 10 )
· int inner_count = 1;
· while ( inner_count <= outer_count ) {
· printf( "*" );
· inner_count++;}
· printf( "\n" );
· outer_count++; } }
```


2. Complete the program and identify and correct the errors in each of the following.

a) if (sales => 5000) puts("Sales are greater than or equal to $5000") else puts("Sales are less than $5000)

b) int x = 1, product = 0; while (x <= 10); { product *= x;
++x;
}

c) While (x <= 100) total =+ x;
++x;

d) while (y < 10) { printf("%d\n", y); }

3. Write a single pseudocode statement that indicates each of the following: a) Display the message "Enter your name:"

b) Assign the product of variables a, b, c and d to variable p.

c) The following condition is to be tested in a conditional statement: if x is greater than y, then x is assigned the value 10, otherwise x is assigned the value 20. d) d) Obtain values for variables a, b, c and d from the keyboard.

4. State which of the following are true and which are false. If a statement is false, explain why.
a) An algorithm is a procedure for solving a problem in terms of the actions to be executed, without specifying the order of the actions.
b) Unless directed otherwise, the computer automatically executes C statements in sequence.
c) The if...else double-selection statement selects a single action.
d) A logic error affects the program when the program is compiled. It does not fail or ter-minate the program prematurely.
e) You can determine your platform's maximum unsigned int value with the constant UINT_MAX from <limits.h>.

Answers to verbal and pseudocode questions

```
Begin
Print "Enter Your Name:"
End
```

```
Begin
Declare a,b,c,d,p
Input a
Input b
Input c
Input d
Compute p = a * b * c * d
Print “p”
End
```

```
Begin
Declare x,y
Input x
Input y

If x greater than y

Print "x=10"
else
Print "x=20"

Endif
```

4- State which of the following are true and which are false. If a statement is false, explain why.

F a) An algorithm is a procedure for solving a problem in terms of the actions to be executed, without specifying the order of the actions.

T b) Unless directed otherwise, the computer automatically executes C statements in sequence.

T c) The if...else double-selection statement selects a single action.

T d) A logic error affects the program when the program is compiled. It does not fail or ter-minate the program prematurely.

T e) You can determine your platform’s maximum unsigned int value with the constant UINT_MAX from .

An algorithm is a procedure for solving a problem in terms of the actions to be executed and the order in which those actions are to be executed. An algorithm is merely the sequence of steps taken to solve a problem. The steps are normally "sequence," "selection, " "iteration," and a case- type statement. In C, "sequence statements" are imperatives. The "selection" is the "if then else" statement, and the iteration is satisfied by a number of statements, such as the "while," " do," and the "for," while the case-type statement is satisfied by the "switch" statement.