Quiz 1: Set A

Introduction to Computing and Programming (CSD101)

Max. Marks: 15 **Date: 12-09-2024**

Duration: 35 min.

Name: _____ **Roll No. _____**

1. If integer needs two bytes of storage, then maximum value of unsigned integer is
   (a) $2^{16} - 1$ (b) $2^{15} - 1$ (c) 2^{16} (d) 2^{15}
   (1 mark)

   Solution: (a)

2. Match the following: (2 marks)

;	Output function
%f, %d, %c	function
printf	Address Operator
main()	Format specifier
&	Statement terminator

Solution:

;	Statement terminator
%f, %d, %c	Format specifier
printf	Output function
main()	function
&	Address Operator

3. Point out the errors, if any in the following C statements

   3.1 (0.5 mark)

   (a) char = ‘5’;

   Solution: char is a keyword

   (b) 4/3 * 3.14 * r = vol ; (0.5 marks)

   Solution:

   Variable “vol” should be left side

   3.2 (1 mark)

```
#include<stdio.h>
int main(){
int a = 3, b = 4, c;
c = b - a;
switch (c)
{ case 1 || 2:
        printf("Help the needy people\n");
        break;
  case a || b:
        printf("Don't be so rude\n");
        break;
 } }
```

Solution: case 1 || 2 and case a || b both are 1 only

4. Evaluate the following expression (2 marks)

```
x = y = 3%8/2+7<<1 / 2
```

Solution: x = y = 8;

5. What will be output of the following programs:

5.1 (1 mark)

```
#include<stdio.h>
void main(){
int x = 4, y=3, z;
z = x-- - --y;
printf( "%d%d%d\n", x,y,z);
}
```

Solution: 3, 2, 2

5.2 (1 mark)

```
#include<stdio.h>
int main()
```

```
{ int a =50;
   switch(a){
      default: a=45;
      case 49: a++;
      case 50: a--;
      case 51: a =a+1;}
   printf("%d",a);}
```

Solution: 50

6. What are the functions of computers? (1 mark)

Ans: input, output, processing data, storage

7. What is the significance of the default case in a switch statement? (1 mark)

Ans: The **default case** in a switch statement is executed when none of the defined case values match the expression. It acts as a fallback, ensuring that some action is taken even if no other cases are satisfied.

8. Convert the numbers in the given format

8.1 $(21.35)_{10}$ to $(\ )_2$ (1 mark)

Solution: 10101.01011

8.2 $(2BD.2A)_{16}$ to $(?)_{10}$ (1 mark)

Solution: 701.1640

9. Write a C program to check whether a number is palindrome or not (2 marks)

Program:

```
#include <stdio.h>
int main() {
    int num, reversedNum = 0, remainder, originalNum;
    // Input the number from the user
    printf("Enter an integer: ");
    scanf("%d", &num);
    originalNum = num; // Store the original number to compare later
    // Reverse the digits of the number
    while (num != 0) {
        remainder = num % 10;  // Get the last digit of the number
        reversedNum = reversedNum * 10 + remainder;  // Build the reversed number
        num = num / 10;  // Remove the last digit from the original number
    }
    // Check if the original number and reversed number are the same example 121
    if (originalNum == reversedNum) {
        printf("%d is a palindrome.\n", originalNum);
    } else {
        printf("%d is not a palindrome.\n", originalNum);
    } return 0; }
```