

Roll No: CS2311027

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Quiz 2, October 2023

Course Code: CS1000

Batch: First Semester 2023-2024

Date of Examination: 28th October 2023

Duration: 1 hour

Course Title: Problem Solving and Programming

Category: Core

Max. Marks: 20

Part A:

Part B:

Part C:

Total:

Instructions to students:

- Part A should be answered in Question Paper.
- Part B and Part C should be answered in answer sheet.
- For Multiple Choice Question, fill the correct answer in the space provided
- Wherever output is required to be written, write the output in the space provided for it
- Question paper and answer sheet should be returned back to the invigilator
- Any String function like `strlen()`, `strcmp()`, `strrev()` or `strcpy()` is NOT allowed
- Keep the explanations to the point, not exceeding one line and use only PEN for answering

Part - A (5 * 1 mark = 5 marks)

Q1: What is the output/error of the following program?

```
#include<stdio.h>
void main()
{
    int c=6;
    while(c--)
    {
        printf("%d\t",c);
    }
}
```

Answer: 5 5 5 5 5 5

As `c--` is 6, It is considered as True and while loop condition is always true so loop gets executed infinite times with `c=5`. (Post decrement)

Q2: What is the output/error of the following program?

```
#include<stdio.h>
void main()
{
    int c=3;
    switch(c)
    {
        case 3:
        case 5:
        case (7-4):
            printf("It is something");
            break;
        case c=1:
```

```
printf("It is one");
break;
}}}
```

Answer: Error : Duplicate case value since $7-4=3$ too.

Q3: What is the output/error of the following program?

```
#include<stdio.h>
void main()
{
int k=1;
do
{
printf("%d ", k);
k=k+1;
}while(k%2==0 && k<=8);
}
```

Answer: 1 2 4 6 8

Do while loop executes first and then checks

Q4: How to convert the following char array to string (i.e. Which of the given options can be added after initialization?):

Given initialization:

```
char str[]={'g','l','o','b','e'};
```

- A. `str[5] = '\0';`
- ☒ B. `str[5] = "\0";`
- C. `str[]={'g','l','o','b','e','\0'};`
- D. All the above

Answer: Null Character denotes end of a string and is the end so null can be assigned.

Q5: Choose the best option for the following program:

```
#include<stdio.h>
void main()
{
int x=11;
for(x=0;0;)
printf("success");
}
```

- A. The loop will execute infinitely
- B. The loop will not be executed and the x value will remain 11
- ☒ C. The loop will not be executed but value of x will change to 0
- D. The loop will be executed atleast once and the value of x will change to 0 after line 2

Answer: First statements in for loop executed, so x becomes 0 and condition is '0' is false so loop won't get executed

Part - B (5 * 2 marks = 10 marks)

Q1:

Consider the following code. Fill up all the blanks. After filling all the blanks the final code should give proper output according to the given sample cases.

```
#include<stdio.h>
void main()
{
    int c,a,b,d;
    printf("Enter the number\n");
    scanf("%d",&a);
    b=a%6;
    c=a%7;
    d=___;
    switch(d)
    {
```

```
case __:
    printf("The number is either
    divisible by 6 or 7");
    break;
```

```
case __:
    printf("The number is neither
    divisible by 6 or 7");
    }
}
```

Sample case 1:

Enter the number

6

Output:

The number is either divisible by 6 or 7

Sample case 2:

Enter the number

8

Output:

The number is neither divisible by 6 or 7

Q2:

Consider the following code and find out the output and explain.

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

```
{
    int i=6;
    for(i=i/3;i<3;i--)
    {
        if(i==0)
        break;
```

```
while(i<=4)
{
    printf("%d",i);
    i++;
    break;
}
i++;
}}
```

Q3:

Write the output/error, discuss the reason in both the cases:

```
#include<stdio.h>
void main()
{
    char arr[4][3]={"hi","how",
    "are","u"};
    printf("%s",arr[2]);
}
```

Q4:

What is the output of the following program? Explain.

```
#include<stdio.h>
void main ()
{
    int x[5]={6,2,12,18,20};
    int p,r;
    p = --x[1];
    r = x[p++];
    printf("%d,%d",p,r);
}
```

Q5:

What is the output of the following program? Elaborate.

```
#include<stdio.h>
void main() {
    int i,j = 0,sum=0;
    for(i=2;i<3;)
    {
        j++;
        for(;j>1;j=j/2)
            sum=sum+ ++i;
        printf("%d%d\n",j, sum);
    }
}
```


Part - C (1 * 5 marks = 5 marks)

Q1. Write a C Program to take a string from the user and segregate string into two portions, first portion will have all the characters with even ASCII value and the remaining part has the characters with odd ASCII values. Finally, the resultant portions (one and two) should be printed as a single string. [String Functions should not be used] [Only one extra single dimension array can be used]

Sample:

Input 1:

Enter the string

abcde

Output 1:

bdace

Input 2:

Enter the string

klmn

Output 2:

lnkm