

CS0.101: Computer Programming (Section B)

Quiz 1 (Fall 2023)

Duration: 45 mins

Question 1: (5 marks)

Write a program to find the sum of first n even numbers. Here n can be taken to be an input from the user.

Question 2: (5 marks)

Explain the control flow between the RAM, Hard disk and the CPU after a program is written.

Question 3: (5 marks)

Write -15 in 1's complement form (assume 8-bit representation).

Question 4: (5 marks)

State True/False with justification: Given two numbers x and y , the expression $y \wedge ((x \wedge y) \& \neg (x < y))$ calculates the minimum of the two numbers.

Question 5: (10 marks)

Write a program to print the following pattern.

Handwritten code:
 `for(i=1; i<=10; i++)`
 `printf("%d", i);`
 `printf("\n");`

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Handwritten calculations:
 $n=1$
 $n=2$
 $2+4=6$
 $n=3$
 $2+4+6=12$
 $n=4$
 $2+4+6+8=20$

Handwritten notes:
 $(0+2)$
 $an^2 + a + 3a$

Question 6:

What is output of the following programs with proper justification ?

1. (5 marks)

```
#include<stdio.h>
int main()
{
    int x=7, y, z;
    y = -- x;
    z = x + +;
    printf("%d %d %d\n", x, y, z);
    return 0;
}
```

x=7, y, z
y = -- x
y = 6, x
z = x
z = 6

2. (5 marks)

```
#include<stdio.h>
int main()
{
    int i;
    for(i = 9; i!=0; i - -)
        printf("i= %d\n", i - -);
    return 0;
}
```

i=9
i=9

i=9
i=8

i=7

i=7

i=6

i=5

i=5

i=4

i=4

i=3

i=3

i=2

i=1

i=1

i=0

i=9, i!=0

i=8

i=7

i=6

i=5

i=4

i=3

i=2

i=1

i=0

3. (5 marks)

```
#include<stdio.h>
int main()
{
    int x = 4, y = 4, z = 4;
    if (x == y == z)
    {
        printf("YES");
    }
    else
    {
        printf("NO");
    }
    return 0;
}
```

4. (5 marks)

```
#include<stdio.h>
int main()
{
    printf("%d", printf("Hello World"));
    return 0;
}
```

i=1

i=1

i=0

i=2

4

7