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.

[handwritten annotations: $2+4$, $2+4+6+8$ ..., $0,2$, $\frac{n}{2}[4+(n-1)2]$, $n[2+(n-1)]$, $n(n+1)$]

Question 2: (5 marks)

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

[handwritten: $f-d-e$]

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 $y \wedge ((x \wedge y)\& -(x < y))$ calculates the minimum of the two numbers.

Question 5: (10 marks)

Write a program to print the following pattern.

```
X _ X _ X _ 1
X _ X _ 2 _ X _ 3
X _ 4 X _ X 5       6
   7     8     9       10
```

[handwritten:
$i = 0$
$i = 1$, (1+11...6 2i spaces
$i + 2$ epaces
print $i + k$ *]*