

COMP 1006 Midterm Fall 2023

1) (10 marks) Write a function named `abs_val` that returns the absolute value of an `int` passed to it by value. You cannot use the `abs()` function library.

2) (10 marks) Write a `rangeSum` function which

- Prompt the user for two positive integers `a` and `b`. (asks for input)
- Write a separate function, **`rangeSum`** to compute the sum of the consecutive integers from `a` to `b` inclusive (that includes both `a` and `b`).
- The `rangeSum` function should only calculate the sum. It should print `a`, `b` and sum.
- Example: `a = 5`, `b = 7`. Output is `a is 5, b is 7, sum is 18`.

3) Short answers and theoretical questions (2 marks each)

a) What initial value should be assigned to **`b`** at line **6** so that the output of this program is **10**?

```
<?php
$sum=0; $n=1;
$b;

b=??;

while (n<b)
{
    $sum += $n;
    $n += 1;
}

echo $sum;

?>
```

3b) What is the function prototype to declare a reference to the `int` "numPlayers"?

3c) What is the purpose of a reference in PHP and when would you use it? (Describe with an example)

3d) What is the difference between an Array and Arraylist?

3e) What type of programming language is PHP. What is the difference between a server-side language and a client-side language?