

BIL 104E QUIZ 3 (Section B)

1) Consider the following function prototypes (20)

`int test(int a, int b);`

a. How many parameters does the function test have? What is the type of the function test? (2, int)

b. Write the test function which will return the a^b .

```
int test(int a, int b){
```

```
    Return pow(a, b);
```

```
}
```

2) Consider the following functions (20)

```
int secret(int x)
{
    int i, j;

    i = 2 * x;

    if (i > 10)
        j = x / 2;

    else
        j = x / 3;

    return j - 1;
}

int another(int a, int b)
{
    int i, j;

    j = 0;

    for (i = a; i <= b; i++)
        j = j + i;

    return j;
}
```

What is the output of each of the following program segments? Assume that x, y are int variables.

c) `x = 10; k = secret(x);` (1 0 4 0)

`cout << x << " " << k << " " << another(x, k) << endl;`

d) `x = 5; y = 8;` (0)

`cout << another(y, x) << endl;`

3) Show the output of the following program: (20)

```
#include <iostream>

using namespace std;

int mystery(int);

int main()
{
    int n;

    for (n = 1; n <= 5; n++)
        cout << mystery(n) << endl;

    return 0;
}

int mystery(int k)
{
    int x, y;

    y = k;

    for (x = 1; x <= (k - 1); x++)
        y = y * (k - x);

    return y;
}
```

Output:

1

2

6

24

120

4) What is the output of the following program (20)

```

#include <iostream>
using namespace std;

void tryMe(int& v);

int main()
{
    int x = 8;

    for (int count = 1; count < 5; count++)
        tryMe(x);

    return 0;
}

void tryMe(int& v)
{
    static int num = 2;

    if (v % 2 == 0)
    {
        num++;
        v = v + 3;
    }
    else
    {
        num--;
        v = v + 5;
    }
    cout << v << ", " << num << endl;
}

```

Output:

11, 3

11, 4

11, 5

11, 6

5) Write a function called factorial that takes an integer as input and returns the factorial of that integer. (20). For example:

cout << factorial (5)<<endl; // prints 120

cout << factorial (0)<<endl; // prints 1

cout << factorial (-3)<<endl; // 0 invalid input

```

int factorial (int number) {
    int sum=1;
    if(number==0)
        return 1;
    if(number<0)
        cout<<"Invalid input";
    if(number>0) {

```

```
for(int i=1; i<=number;i++){  
    sum=sum*i  
  
}  
  
}  
return sum;  
  
}
```