

Institutional Affiliation

Professor's Name

Student's Name

Date

Q1. Mark as true or false

- a) False
- b) False
- c) True
- d) True
- e) False
- f) True
- g) True
- h) False
- i) True

Q2. Identifying Items

- a) `void hello(int&, double, char);`
- b) `hello(x,y,z);`
`hello(x,y-3.5, 'S');`
- c) Reference parameters are `int&`, `double`, `char`
Value parameters are `x,y`, `y-3.5,z,'S'`
- d) Local variables `int x`, `double y`, `char z`
Global variables is `int one`

Q3. Difference between**a) Actual and formal Parameter**

Parameter declared in the heading of a function is called formal parameter while actual parameter is expression or variable used in a function

b) Value and reference parameter

A value parameter receives a copy of the actual parameter's data while a reference parameter receives the address of the actual parameter.

c) Local and global variable

Local variable is one declared within a function or block while global variable is declared outside of every function

Q4. What is the output if**a) Input is 1**

TakeProgramming I.

```
Enter 1 or 2: 1
TakeProgramming I.
```

b) Input is 2

TakeProgramming II.

```
Enter 1 or 2: 2
TakeProgramming II.
```

c) Input is 3

TakeInvalid Input. You must enter 1 or 2

```
Enter 1 or 2: 3
TakeInvalid Input. You must enter 1 or 2
```

d) Input is -1

TakeInvalid Input. You must enter 1 or 2

```
Enter 1 or 2: -1
TakeInvalid Input. You must enter 1 or 2
```

Q5. Definition of function

void inputs(double value)

{

 cout<<"Enter number";

 cin>>value;

 cout<<" Output is "<<float value<<endl;

}

Q6. Definition of function

```
void inputs( double num1, num2 )  
  
{  
  
    int output;  
  
    cout<<"Enter fist number";  
  
    cin>>num1;  
  
  
    cout<<"Enter second number";  
  
    cin>>num2;  
  
  
    if(num1 !=0)  
    {  
  
        output=      num2/num1;  
  
    }  
  
    else  
  
    {  
  
        cout<<" num2 cannot be devided by num1 since num1 is ZERO  
"  
    }  
}
```

```
}
```

Q7. Definition of function

```
void func1(int =0, double= 0, string);
```

Q8. Definition of function

```
void fun1(int sum, int testScore)
```

```
{
```

```
    sum +=testScore;
```

```
}
```

Q9. What is the output

NB: At first the code is wrong.

There is an error since the coma after "int& c" should not be there.

Wrong: `void find ( int a, int& b, int& c,);`

```
void find ( int a, int& b, int& c,);
```

This brings a prompt to add identifier before ')' token

And no output when code is wrong.

It should be;

Wright: `void find ( int a, int& b, int& c);`

After correcting the code, below is the output

```
5, 10, 15
20, 10, 15
25, 30, 15
45, 30, 60
```

Q10. Output of Program

```
15 56
15 24-9
```

Q11. Order of execution

```
Please Enter two integers.  
4 5  
The sum and products are 9 and 20  
The two integers are 4,5
```

Q12. What is output if;

a) Input is 3 625?

```
Enter two numbers: 3 625  
  
3.00,625.00,8.33  
625.00,3.00,0.00
```

b) Input is 24 1024?

```
Enter two numbers: 24 1024  
  
24.00,1024.00,1.33  
1024.00,24.00,0.00
```

c) Input is 0 196?

```
Enter two numbers: 0 196  
  
Enter nonzero number: 0 196  
  
0.00,196.00,1.00  
196.00,0.00,0.00
```

Q13. The output of this program will be similar even if we change it in the function call

Q14. Determine scope of each identifier

The scope of any identifier begins at the declaration.

double x and double y are global variables since they are declared outside the main function. double z is also a global variable. The identifier is global. double one and double two are local variables since their declaration is within a compound statement within the main function, main();

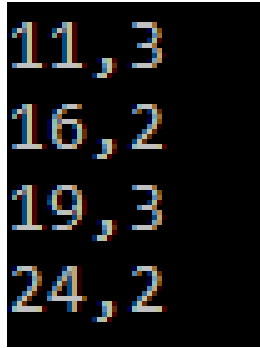
Q15. Output of Fragment

```
10 20
5 20
```

Q16. Exact output

```
Line 3: In Main: num1 = 10, num2=20
Line 8: In funOne: a = 10, x=12, and z=22
Line 10: In funOne: a = 10, x=17, and z=22
Line 12: In funOne: a = 18, x=17, and z=22
Line 5: In Main after funOne: num1 = 18, num2=20
```

Q17. Output of program



```
11, 3
16, 2
19, 3
24, 2
```

Q18. Signature of a function

Refers to combination of function's name and the number, order and the type of its formal parameters

Q19. Correct function calls

a, b and d are correct.

a calls an integer parameter, b calls two integers and c calls two integers and a character

Q20. Function definition

18 25.6

9 18.4

9 0 36.8

PROGRAMMING EXERCISES

Q1. Definition of function

a) `void initialize(int y, int x = 0);`

b)

```
void getHoursRate(double rate, double hours)
```

```
{
```

```
    cout<<"Enter Hours worked";
```

```
    cin>>hours;
```

```
    cout<<"Enter rate";
```

```
    cin>>rate;
```

```
}
```

c)

```
void payCheck(double rate, double hours, double amount)
```

```
{
```

```
    int rate=300; //rate per first 40 hours
```

```
    cout<<"Enter Hours worked";
```

```
    cin>>hours;
```

```
    cout<<"Enter rate";
```

```
    cin>>rate;
```

```
    if(hours==40)
```

```
    {
```

```
        amount = rate * hours;
```

```
d)
```

```
void printCeck(double rate, double hours, double amount)
```

```
{
```

```
    int rate=300; //rate per first 40 hours
```

```
    int ratePerHour;
```

```
    double salary;
```

```
    cout<<"Enter Hours worked";
```

```
    cin>>hours;
```

```
    cout<<"Enter rate";
```

```
    cin>>rate;
```

```
    ratePerHour = rate / hours;
```

```
    if(hours==40)
```

```
    {
```

```
        amount = rate * hours;
```

```
        salary= amount;
```

```
    }
```

```
    else
```

```
    {
```

```
        amount = (1.5 * rate) * hours
```

```
    }
```

```
}
```

```
}
```

```
        else
        {
            amount = (1.5 * rate) * hours
        }
    }
```

e) .

```
void funcOne(int x, int y)
{
    int num;
    cout<<"Enter a Number";
    cin>>num;
    x= 2*x+y-num;
}
```

f)

```
void nextChar(char z)
{
    z += z;
}
```

```
g) .
int main()
{
    int x, y;
    char z;
    double rate, hours;
    double amount;
    void initialize(int y, int x = 0);
    void getHoursRate(double rate, double hours);

    void payCheck(double rate, double hours, double amount);

    void printCeck(double rate, double hours, double amount);

    void funcOne(int x, int y);
    void nextChar(char z);

}
```

Q2. Function definition

a)

```
void func2( int a, int b, double c)
{

    cout <<"Enter Integer1";
    cin>>a;

    cout<<"Enter Integer2";
    cin>>b;

}}
```

b)

```
void func2( int a, int b, double c)
{

    cout <<"Enter Integer1";
    cin>>a;

    cout<<"Enter Integer2";
    cin>>b;

    if(a>=b)
    {
        c= pow(a, b);
    }
    else if(a<b)
    {
        c= pow(b, a);
    }
}
c)
```

```
void func2( int a, int b, double c)
{

    cout <<"Enter Integer1";
    cin>>a;

    cout<<"Enter Integer2";
    cin>>b;

    if(b != 0 && a==0)
    {
        c= sqrt(a);
    }

}
```

d)

```
void func2( int a, int b, double c)
{

    cout <<"Enter Integer1";
```

```
    cin>>a;

    cout<<"Enter Integer2";
    cin>>b;

    if(a != 0 && b==0)
    {
        c= sqrt(b);
    }
}
```

e)

```
void func2( int a, int b, double c)
{

    cout <<"Enter Integer1";
    cin>>a;

    cout<<"Enter Integer2";
    cin>>b;

    if(a != 0 && b==0)
    {
        c= sqrt(b);
    }
    else
    {
        c=0;
    }
}
```



Q3. Rearranging the Code

Programming Exxercise Q3.fpj

The correct code is in a .zip file

```
This program calculates the total time spent by an employee on the job.
To run the program, enter (y/Y):y

Enter employees name: James Jean

Enter departure hour: 6

Enter departure minute: 12

Enter (y/Y) is departure is before 12:00 PM: y

James Jean
Enter arrival Hour: 8

Enter arrival minute: 30

Enter (y/Y) if arrival is before 12:00 PM: y

Time spent of Job: 4274478hours and 32Minutes.
```

Q4. CalculateGrade

```
void printGrade( int courseScore)
{
    if(courseScore>=80)
        return courseScore;
    calculateGrade=courseScore;
}
```

Q5.

This question has some missing information/ requirements.
It is not complete.