

# SOLVED BY PRINCE ALVI

Sample Paper  
FINAL TERM EXAMINATION  
Fall 2022

CS201P – Introduction to Programming Practical

Time: 90 min  
Marks: 40

**Question No: 1 (Marks: 01) - Please choose the correct option**

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In C++, which one of the following is used for clarity and to force the order of evaluation in an expression?

- A. []
- B. {}
- C. ()
- D. <>

**Question No: 2 (Marks: 01) - Please choose the correct option**

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Which element is at arr[1] in the following array?

```
int arr[4]={0,1,2,3};
```

- A. 0
- B. 1
- C. 2
- D. 3

**Question No: 3 (Marks: 01) - Please choose the correct option**

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The \_\_\_\_\_ member of a class can be accessed from inside the class?

- A. Private
- B. Public
- C. Protected
- D. Constant

**Question No: 4 (Marks: 01) - Please choose the correct option**

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Choose the correct method to close a file.

- A. myFile.close(r);
- B. myFile.close(w);
- C. myFile.close(a);
- D. myFile.close();

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**Question No: 5 (Marks: 01) - Please choose the correct option**

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Which of the following is a parametrized manipulator in C++?

- A. hex
- B. ends
- C. setbase**
- D. cin

**Question No: 6 (Marks: 01) - Please choose the correct option**

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Which of the following is not a logical operator?

- A. ||
- B. !
- C. +=**
- D. &&

**Question No: 7 (Marks: 01) - Please choose the correct option**

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Which one of the following way is to extend the C++ language?

- A. Classes**
- B. If/else
- C. Loops
- D. Arrays

**Question No: 8 (Marks: 01) - Please choose the correct option**

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Which operator is used to de-allocate the memory.

- A. Delete**
- B. New
- C. Create
- D. Insert

**Question No: 9 (Marks: 01) - Please choose the correct option**

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To declare a friend function, we can put it \_\_\_\_\_.

- A. only at the start of the class
- B. only at the end of the class
- C. outside the class**
- D. anywhere in the class

**Question No: 10 (Marks: 01) - Please choose the correct option**

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Consider the expression  $\text{int } v = *((p+i)+j)$ ; where  $p$  is a pointer to 2D array and  $i$  and  $j$  are integer. Select the best option that describes  $v$ .

- A.  $v$  must be a pointer
- B.  $v$  points to the  $i$ th row and  $j$ th column of a table corresponding to  $p$**
- C.  $v$  points to the  $(i+j)$ th element of  $p$

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D. Expression is incorrect

**Question No: 11 (Marks: 01) - Please choose the correct option**

A pointer to pointer differs from reference in that.....

- A. a pointer to pointer can be null
- B. a reference can be null
- C. a pointer to pointer and reference can be null
- D. a reference cannot be null**

**Question No: 12 (Marks: 01) - Please choose the correct option**

\t, \s, \b are examples of .....

- A. special characters
- B. control characters**
- C. double characters
- D. branch characters

**Question No: 13 (Marks: 01) - Please choose the correct option**

Select the true statements about strcat() and strncat().

- A. both are used for appending the strings**
- B. both accepts same number of parameters
- C. strncat allows selected length of characters to be appended
- D. strcat allows the selected length of characters to be appended

**Question No: 14 (Marks: 01) - Please choose the correct option**

Consider the string "Food was tasty", How many invocations of strtok() would be required to print tasty.

- A) 3
- B) 4
- C) 1
- D) 2**

**Question No: 15 (Marks: 01) - Please choose the correct option**

The main difference between template function and normal function is

- A. data types are specific in normal function while in template not specific**
- B. data types are not specific in normal function while in template are specific
- C. template function accepts only single parameter unlike normal function
- D. template function accepts two parameters unlike normal function

**Question No: 16 (Marks: 01) - Please choose the correct option**

Function templates can operate with

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- A. Int data type
- B. float data type
- C. generic data type**
- D. char data type

**Question No: 17 (Marks: 01) - Please choose the correct option**

Which of the following keyword/keywords can be used in template?

- A. #define
- B. template
- C. typename
- D. both template and typename**

**Question No: 18 (Marks: 01) - Please choose the correct option**

Nested class in C++ can be accessed outside the enclosing class using

- A. Scope resolution operator ( :: )**
- B. Arrow sign (->)
- C. Using dot operator ( . )
- D. Using <> sign

**Question No: 19 (Marks: 01) - Please choose the correct option**

To call template function in main(), following is the correct syntax

- A. MyFunction<int>(3,7)**
- B. MyFunction(3,7)
- C. MyFunction(int 3, int 7)
- D. MyFunction(3,7) int

**Question No: 20 (Marks: 01) - Please choose the correct option**

Suppose A is matrix with 4 rows and 5 columns, then order of matrix A is \_\_\_\_\_.

- A. 4 \* 5**
- B. 5 \* 4
- C. 4 + 5
- D. 5 + 4

**Question No: 21 (Marks: 01) - Please choose the correct option**

The sum or addition of two matrices can be found if both matrices have \_\_\_\_\_.

- A. same no of rows
- B. same no of columns
- C. same no of rows and columns
- D. same no of columns of first matrix and no of rows of second matrix**

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**Question No: 22 (Marks: 01) - Please choose the correct option**

The input function which will get the input from the keyboard, takes an argument of type \_\_\_\_\_.

- A. ostream
- B. istream**
- C. ifstream
- D. instream

**Question No: 23 (Marks: 01) - Please choose the correct option**

All of the given are normal operations that are performed on matrices except \_\_\_\_\_.

- A. Matrix is added to another matrix
- B. Matrix is subtracted from another matrix
- C. Matrix is multiplied with another matrix
- D. Matrix is divided with another matrix**

**Question No: 24 (Marks: 01) - Please choose the correct option**

Suppose you want to perform scalar addition "x + A" on matrix A. Which of the following is the correct declaration to overload the addition "+" operator in C++?

- A. Matrix operator + (Scalar) const;
- B. Matrix operator + (Scalar, Matrix &) const;
- C. friend Matrix operator + (Scalar) const;
- D. friend Matrix operator + (Scalar, Matrix &) const;**

**Question No: 25 (Marks: 05)**

Carefully read and analyze the following code and determine its output.

```
int main(){
    int x = 2;
    double eq1 = (11+x)/(x*x*x) + 2*x*(5-x);
    cout << eq1;
    double eq2 = (x*x) + x*(2+2*x)/(11+x);
    cout << eq2;
}
```

**Solution:**

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2.5 marks for each.

13

4

## Question No: 26 (Marks: 05)

---

What will be output of the following program?

```
#include<iostream>
using namespace std;
void print(int arr[5])
{
    for(int i=4;i>=0;i--)
    {
        if(arr[i]%2!=0)
        {
            cout<<2*arr[i]<<" ";
        }
        else
        {
            cout<<arr[i]<<" ";
        }
    }
}
int main()
{
    int arr[5]={5,4,3,2,1};
    print(arr);
    cout<<endl;
    return 0;
}
```

**Solution:**

2 8 6 4 10

## Question No: 27 (Marks: 05)

---

Write a program in C++ to calculate area and circumference of a rectangle using macros. Take the values of length and breadth from user.

Hint: Area of rectangle is the product of its length and breadth whereas circumference of rectangle is sum of all the side lengths.

**Solution:**

```
#include <iostream>
```

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```
#define AREA(l, b) (l * b)
#define CIRCUM(l, b) (2 * (l + b))

using namespace std;

int main() {
    double length, breadth;

    cout << "Enter length of rectangle: ";
    cin >> length;

    cout << "Enter breadth of rectangle: ";
    cin >> breadth;

    double area = AREA(length, breadth);
    double circumference = CIRCUM(length, breadth);

    cout << "Area of rectangle: " << area << endl;
    cout << "Circumference of rectangle: " << circumference << endl;

    return 0;
}
```

**Question No: 28 (Marks: 05)**

---

Write down the output of the following code.

```
#include <iostream>
using namespace std;
class Student
{
    public:
    ~Student()
    {
        cout<<"Hello";
    }
    Student(int x)
    {
        for(int i=0;i<x;i++)
            cout<<"Welcome to VU"<<endl;
    }
};
int main()
{
    Student s1(4);
```

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}

## Solution:

Welcome to VU  
Welcome to VU  
Welcome to VU  
Welcome to VU  
Hello

## Question No: 29 (Marks: 05)

Fill the columns with correct answers:

Mode	Meaning
ios::in	Open a file or stream for extraction (input)
ios::out	Open a file or stream for insertion (output)
ios::app	Append rather than truncate an existing file. Each insertion(output) will be written to the end of the file
ios::trunc	Discards the file's contents if it exists. (similar to default behavior)
ios::binary	Treat the file as binary rather than text. A binary file has data stored in internal formats, rather than readable text format

## Question No: 30 (Marks: 05)

What will be the output of following program written in C++? [5 Marks]

```
#include<iostream>
#include<iomanip>
using namespace std;
class Fun
{
    float f;
    public:
        Fun():f(1.0){};
        Fun(float x):f(x){};
        float getf(){return f;};
        void setf(float a){f = a;};
        void display();
        friend Fun operator * (const Fun & , const Fun &);
};
Fun operator * (const Fun & Fn1 , const Fun & Fn2)
{
    Fun temp;
    temp.f = Fn1.f * Fn2.f;
    return temp;
}
void Fun::display()
```

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```
{
    cout<< setprecision(3) << this->f;
}
int main()
{
    Fun fobj[] = {Fun(2.563) , Fun(2.0) , Fun()};
    Fun fd = fobj [0] * fobj [1] * fobj [2];
    fd.display();
    return 0;
}
```

**Solution:**  
5.13

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