

# FBISE Computer PBA Class 12

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## SECTION A (Marks 15)

### Question No. 1: [8 marks]

The **principal amount** is the *initial sum of money* that is invested. **Profit** refers to the financial gain or return on the principal amount.

- Write a C++ program that can be used to **calculate profit**.
- Your program must **input principal amount** in rupees and **tenure in years**.
- **Calculate and display the profit** based on the following conditions:
  - i. If Principal amount is less than 25000 and Tenure is less than 10 years  
**Profit = 5% of Principal Amount**
  - ii. If Principal amount is equals to 25000 and Tenure is equals to 10 years  
**Profit = 7% of Principal Amount**
  - iii. If Principal amount is greater than 25000 and Tenure is greater than 10 years  
**Profit = 10% of Principal Amount**

### Program

```
#include <iostream.h>
void main()
{
    float principal, profit;
    int tenure;
    //Input principal amount and tenure
    cout << "Enter the principal amount (in rupees): ";
    cin >> principal;
    cout << "Enter the tenure (in years): ";
    cin >> tenure;
    // Calculate profit based on conditions
    if (principal < 25000 && tenure < 10)
        profit = 0.05 * principal;
    else if (principal == 25000 && tenure == 10)
        profit = 0.07 * principal;
    else if (principal > 25000 && tenure > 10)
        profit = 0.10 * principal;
    else
        profit = 0;
    // Display the profit
    cout << "The profit is: " << profit << " rupees" << endl;
```

}

**Question No. 2: [7 marks]**

Write a C++ program that lets the user enter the **total rainfall** for each of **12 months** into an **array of doubles**. The program should **calculate and display**:

- The **total rainfall** for the year,
- The **average monthly rainfall**
- The **months** with the highest amount.

**Program**

```
#include <iostream.h>
#include <string.h>
int main()
{
    const int MONTHS = 12;
    double rainfall[MONTHS];
    double totalRainfall=0.0, averageRainfall;
    int highestMonth=0;

    // Input rainfall for each month
    cout << "Enter total rainfall (in mm) for 12 months:\n";
    for (int i = 0; i < MONTHS; ++i)
    {
        cin >> rainfall[i];
        totalRainfall += rainfall[i];
        // Check if current month has the highest rainfall
        if (rainfall[i] > rainfall[highestMonth])
            highestMonth = i;
    }

    // Calculate average monthly rainfall
    averageRainfall = totalRainfall/MONTHS;

    // Display results
    cout << "\nTotal rainfall for the year: " << totalRainfall << " mm" << endl;
    cout << "Average monthly rainfall: " << averageRainfall << " mm" << endl;
    cout << "Month with the highest rainfall: " << rainfall[highestMonth] << " mm" << endl;
}
```

## Section B (Marks 10)

**Q3. Write a C++ program that have a class named "Triangle" and calculate the area of triangle with the following conditions: (2+3)**

- Two private data members base and height
- Member function area( )

### Program

```
#include <iostream.h>
class Triangle {
private:
    float base;
    float height;
public:
    //constructor to initialize variables
    Triangle(float b, float h) {    base=b; height=h; }

    float area() { return 0.5*base*height; }
};    //end of class

void main() {
    float base, height;
    cout<<"Enter base of triangle:";
    cin>>base;
    cout<<"Enter height of triangle:";
    cin>>height;
    Triangle tr(base,height);
    cout<<"Area of triangle is:"<<tr.area()<<endl;
}
```

**Q4. What will be the output of the following program segments? (2+3)**

No.	Program segment	Output
i.	<pre>int x=100,*myptr; myptr=&amp;x; cout&lt;&lt;myptr&lt;&lt;"\n"&lt;&lt;*myptr;</pre>	<pre>0x7ffee4c47b8c 100</pre>
ii.	<pre>int power(int n) { return (n*n*n*n); } int main() { int n=163; int result=0; int remainder; while(n!=0) { remainder=n%10; result=result+power(remainder); n=n/10; cout&lt;&lt;"\n Result: "&lt;&lt;result; } return 0; }</pre>	<pre>Result: 81 Result: 1377 Result: 1378</pre>

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