**Question 1**

**Write a program to print the following pattern**

**1**

**2\*2**

**3\*3\*3**

**4\*4\*4\*4**

**Ans:**

**#include<iostream>**

**using namespace std;**

**int main()**

**{**

**for(int i=1;i<=4;i++)**

**{**

**for(int j=1;j<=i;j++)**

**{**

**cout<<i;**

**if(j<i)**

**{**

**cout<<"\*";**

**}**

**}**

**cout<<"\n";**

**}**

**return 0;**

**}**

**Question 2**

**Write a program to print the following pattern**

**1**

**01**

**101**

**0101**

**10101**

**Ans:**

**#include<iostream>**

**using namespace std;**

**int main()**

**{**

**for(int i=0;i<=6;i++)**

**{**

**for(int j=1;j<i;j++)**

**{**

**if((i+j)%2==0)**

**{**

**cout<<"0";**

**}**

**else**

**{**

**cout<<"1";**

**}**

**}**

**cout<<"\n";**

**}**

**}**

**Question 3**

**Write the similarity and difference between an array name and pointer variable.**

**Ans:**

**Similarity:**

**Arrays and pointers uses a very similar technique that is “address storage” both stores the address of the variables and then with the help of that it finds the value of the variable, when passing an array into a function you pass a pointer to the first element whih is name of the array.**

**ex:**

**int ans = 7;**

**int\* p = ans;**

**printf("the value of ans is %d\n",ans);**

**printf("the address is %x\n",&p); // prints in hexadecimal format**

**printf("we can get its value by using \* operator ans = %d",\*(&ans));**

**Difference:**

**Array also does the same thing as pointers do but not exactly, it only stores the address of the 1st variable and then based on the variable type it moves to the next one like for int it moves 4 bytes ahead.**