COMPUTER LABORATORY 8

Task1: Copy the program given below. Save (as ref.cpp). Compile and run it.

```
// Use of the references
#include <iostream>
using namespace std;
int main(){
    float n = 25.5; // the target
    float &r1 = n; // alias of the target
    float &r2 = n; // another alias of the target
    cout << "n, r1, r2 = " << n << '\t' << r1 << '\t' << r2<< endl;
    n = -4.2e-2;
    cout << "n, r1, r2 = " << n << '\t' << r1 << '\t' << r2<< endl;
    r1 = 12.55;
    cout << "n, r1, r2 = " << n << '\t' << r1 << '\t' << r2<< endl;
    //addresses
    cout << "&n, &r1, &r2 = " << &n << '\t' << &r1 << '\t' << &r2<< endl;
return 0;
}
```

Task2: Copy the program given below. Save (as ptr.cpp). Compile and run it.

```
// Use of pointers
#include <iostream>
using namespace std;
int main(){
    int n = 25;
    int *pn;
    pn = &n; // pn points to n

    cout << "n = " << n << '\n' << "&n = " << &n << endl;
    cout << "pn = " << pn << '\n' << "&pn = " << &pn << endl << endl;
    *pn = 70;
    // *pn is the alias of n
    cout << "n = " << n << '\n' << "*pn = " << *pn << endl;
    return 0;
}
```

Task3: Copy the program given below. Save (as ptrArrays.cpp). Compile and run it.

```
// Use of pointers and arrays
#include <iostream>
int main(){
    float a[5];
    float *p;
    p = a; // p holds the adr. of the 1st element of a
    *p = 1.5; // that means a[0] = 1.5;
    *(p+1) = 2.2;
    *(p+2) = 7.1;
    *(p+3) = 8.3;
    *(p+4) = 9.9;
    std::cout << " a[i]: ";
```

```
    for (int i=0; i<5; i++) std::cout << a[i] << " ";
    std::cout << std::endl;
    std::cout << "*(p+i): ";
    for (int i=0; i<5; i++) std::cout << *(p+i) << " ";
    std::cout << std::endl;
return 0;
}
```

Task4: Write a function named **float* max (float a[], int n)** that is passed a float array of size n and returns a pointer to the maximum of the n floats. Use this program in a suitable main program.