

BIL 104E QUIZ 6 (Section B)

1) Given the following pseudo code, write a program that executes it.(25)

- ☐ read x (from user)
- ☐ initialize y to two times of x
- ☐ compute $p = x * y$
- ☐ calculate the remainder of $p/7$ and assign it to s
- ☐ $total = s^2 + p * (s - x) * (p + y)$
- ☐ print total

```
#include <iostream>
```

```
#include <cmath>
```

```
/* run this program using the console pauser or add your own getch, system("pause") or input loop */
```

```
using namespace std;
```

```
int main(int argc, char** argv) {
```

```
    int x,p,s,total;
```

```
    cout<<"Enter the x: ";
```

```
    cin>>x;
```

```
    int y=2*x;
```

```
    p=x*y;
```

```
    cout<<"p: "<<p;
```

```
    s=p%7;
```

```
    cout<<"s: "<<s;
```

```
    total=pow(s,2)+p*(s-x)*(p+y);
```

```
    cout<<"Total= "<<total;
```

```
    return 0;
```

```
}
```

2) Suppose that the input is:

58 23 46 75 98 150 12 176 145 -999

What is the output of the following program? (25)

```
#include <iostream>

using namespace std;

int main()
{
    int num;

    cin >> num;

    while (num != -999)
    {
        cout << num % 25 << " ";
        cin >> num;
    }

    cout << endl;

    return 0;
}
```

Output:

8
23
21
0
23
0
12
1
20

3) Write a program which, given an array of integers, outputs the unique integers in the array. E.g. for the array [1 2 3 2 3 4 2 5] your function should output 1 4 5. (50)

```
#include <iostream>
```

```
/* run this program using the console pauser or add your own getch, system("pause") or input loop */
```

```
using namespace std;
```

```
int main(){
```

```
int arr1[100], n,ctr=0;
```

```
int i, j, k;
```

```
    //Store the size of the array.
```

```
    cin>>n;
```

```
    // Stores the each element into the array.
```

```
    for(i=0;i<n;i++)
```

```
    {
```

```
        cin>>arr1[i];
```

```
    }
```

```
    for(i=0; i<n; i++)
```

```
    {
```

```
        ctr=0;
```

```
        for(j=0; j<i-1; j++)
```

```
        {
```

```
            if(arr1[i]==arr1[j])
```

```
            {
```

```
                ctr++;
```

```
            }
```

```
        }
```

```
        for(k=i+1; k<n; k++)
```

```
        {
```

```
            if(arr1[i]==arr1[k])
```

```
            {
```

```
                ctr++;
```

```
            }
```

```
        }
```

```
        if(ctr==0)
```

```
        {
```

```
cout<<arr1[i];
```

```
}
```

```
}
```

```
}
```