9. (b) Test 9

Test Summary

- No. of Sections: 2
- No. of Questions: 3
- Total Duration: 45 min

Section 1 - Coding Proficiency

Section Summary

- No. of Questions: 2
- Duration: 30 min

Additional Instructions:

None

Q1. **GCD Of N Numbers**

Write a 'C' program to find the GCD of N numbers

Input Format

Input will have the no of elements and the values

Output Format

print the GCD

Constraints

1 ≤ noe ≤ 100000
1 ≤ values ≤ 100000000007

Sample Input

```
5 2 4 8 16 32
```

Sample Output

```
2
```

Sample Input

```
5 15502 255004 350506 876878 89760
```

Sample Output

```
2
```

Time Limit: - ms Memory Limit: - kb Code Size: - kb

Q2. **Prime Numbers Below the Range**

Given a positive integer num, write a program to print all the prime numbers from 2 to num.

A prime number is a number that is divisible only by 1 and the number itself.
The input to the method ***primePrint*** of class Prime consists of the input number num.Print all the prime numbers from 2 to num, each separated by a single space. Do not return anything from the method.
Please ensure that the output should only consist of numbers separated by a single space.
For example
num: 11
Output: 235711
Make sure that your class and method are public. Do not accept any input from the console. They shall be passed as arguments to the method itself.
Useful Commands:
a%b returns the remainder when a is divided by b.
System.out.print() prints the content within the brackets to the screen.
Testcase 1:
Input:
11
Excepted return value
2 3 5 7 11
Testcase 2:
Input
4
Excepted return value
2 3

Input Format

Input contains the value n

Output Format

Print the numbers separated by space

Constraints

1<= n <= 10000007

Sample Input

```
10
```

Sample Output

```
2 3 5 7
```

Time Limit: - ms Memory Limit: - kb Code Size: - kb

Section 2 - Essay Writing

Section Summary

- No. of Questions: 1
- Duration: 15 min

Additional Instructions:
None

Q1. **ESSAY WRITING**

Write a response that expresses your thoughts on this statement. To what extent do you agree or disagree? Explain your reasoning.

Directions

The tight curriculum of our education system leaves no room for imagination and creativity.

Keywords

Answer Key & Solution

Section 1 - Coding Proficiency

Q1

Test Case

Input

```
4 3 6 9 12
```

Output

```
3
```

Weightage - 5

Input

```
3 5 10 15
```

Output

```
5
```

Weightage - 5

Input

```
2 50 100
```

Output

```
50
```

Weightage - 10

Input

```
1 30
```

Output

```
30
```

Weightage - 10

Input

```
4 30 45 60 900
```

Output

```
15
```

Weightage - 10

Input

```
4 4530 78050 83260 34900
```

Output

```
10
```

Weightage - 10

Input

```
6 54539 28059 18326 8349 23139 895429
```

Output

```
1
```

Weightage - 10

Input

```
12 67876 435 54539 28059 18326 8349 23139 895429
```

Output

```
1
```

Weightage - 10

Input

```
5 56 78 24 432 56672
```

Output

```
2
```

Weightage - 10

Input

```
9 64 32 16 8 128 256 512 1024 2048
```

Output

```
8
```

Weightage - 10

Input

```
3 1550 25500 35050
```

Output

```
50
```

Weightage - 10

Sample Input

```
5 2 4 8 16 32
```

Sample Output

```
2
```

Sample Input

```
5 15502 255004 350506 876878 89760
```

Sample Output

```
2
```

Solution

```
#include<stdio.h>
#include<malloc.h>
int Gcdof2num(int, int);
int main()
{
    int *arr, size;
    int result=0,index;
    scanf("%d",&size);
    arr = (int*)malloc(sizeof(int)*size);
    for(index=0;index<size;index++)
        scanf("%d",&arr[index]);
```

```
#include<stdio.h>
#include<malloc.h>
int Gcdof2num(int, int);
int main()
{
    int *arr, size;
    int result=0,index;
    scanf("%d",&size);
    arr = (int*)malloc(sizeof(int)*size);
    for(index=0;index<size;index++)
        scanf("%d",&arr[index]);
```

```
    for(index=0;index<size;index++)
        result=Gcdof2num(result,arr[index]);
    printf("%d",result);
    return 0;
}
int Gcdof2num(int n1, int n2)
{
    int rem;
    if(n1==0)
        return n2;
    if(n2==0)
        return n1;
    while(1)
    {
        rem=n1%n2;
         if(rem==0)
            break;
         n1=n2;
         n2=rem;
    }
    return n2;
}
```

```
    for(index=0;index<size;index++)
        result=Gcdof2num(result,arr[index]);
    printf("%d",result);
    return 0;
}
int Gcdof2num(int n1, int n2)
{
    int rem;
    if(n1==0)
        return n2;
    if(n2==0)
        return n1;
    while(1)
    {
        rem=n1%n2;
         if(rem==0)
            break;
         n1=n2;
         n2=rem;
    }
    return n2;
}
```

Q2

Test Case

Input

```
50
```

Output

```
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47
```

Weightage - 5

Input

```
364
```

Output

```
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59
```

Weightage - 5

Input

```
9484
```

Output

```
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59
```

Weightage - 10

Input

```
8547
```

Output

```
2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59
```

Weightage - 10

Input

Output

4297	2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59

Weightage - 10

Input **Output**

6528	2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59

Weightage - 10

Input **Output**

3743	2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59

Weightage - 10

Input **Output**

546	2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59

Weightage - 10

Input **Output**

1234	2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59

Weightage - 10

Input **Output**

4537	2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59

Weightage - 10

Input **Output**

3567	2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59

Weightage - 10

Sample Input **Sample Output**

10	2 3 5 7

Solution

Header

```
#include<stdio.h>



void primePrint(int n)
{
    // Create a boolean array "prime[0..n]" and initialize
    // all entries it as true. A value in prime[i] will
    // finally be false if i is Not a prime, else true.
    bool prime[n+1];
    memset(prime, true, sizeof(prime));

    for (int p=2; p*p<=n; p++)
    {
        // If prime[p] is not changed, then it is a prime
        if (prime[p] == true)
        {
            // Update all multiples of p
            for (int i=p*2; i<=n; i += p)
                prime[i] = false;
        }
    }

    // Print all prime numbers
    for (int p=2; p<=n; p++)
    if (prime[p])
        cout << p << " ";
}
```

Footer

```
int main()
{
    int n = 30;
  scanf("%d",&n);
    primePrint(n);
    return 0;
}
```

Header

```
#include <bits/stdc++.h>
using namespace std;
class Prime
{
   public :
   void primePrint(int n);
};



void Prime::primePrint(int n)

{
```

```
    // Create a boolean array "prime[0..n]" and initialize
    // all entries it as true. A value in prime[i] will
    // finally be false if i is Not a prime, else true.
    bool prime[n+1];
    memset(prime, true, sizeof(prime));

    for (int p=2; p*p<=n; p++)
    {
        // If prime[p] is not changed, then it is a prime
        if (prime[p] == true)
        {
            // Update all multiples of p
            for (int i=p*2; i<=n; i += p)
                prime[i] = false;
        }
    }

    // Print all prime numbers
    for (int p=2; p<=n; p++)
    if (prime[p])
        cout << p << " ";
    }
```

Footer

```
int main()
{
    int n = 30;
  scanf("%d",&n);
  Prime p;
    p.primePrint(n);
    return 0;
}
```

Section 2 - Essay Writing

Q1 Sample Essay

No Essay

Keywords

TIGHT, CURRICULUM, OUR, EDUCATION, SYSTEM, LEAVES, NO, ROOM, IMAGINATION, CREATIVITY,

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