

10 . (b) Test 10

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. **Prime Factors**  
Write a ‘C’ program to find out prime factors of given number

Input Format

Input represents the value n

Output Format

Print the prime factors separated by space

Constraints

1<= num <= 1000000

Sample Input

Sample Output

225	3 3 5 5
-----	---------

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

Q2. **Prime Numbers Between Intervals**  
C Program to Display Prime Numbers between Two Intervals

Input Format

Input contains the start and end range

Output Format

Print the values separated by space

Constraints

1 <= start < end <= 1000000

Sample Input

Sample Output

5 15	5 7 11 13
------	-----------

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 explaining the pros and cons of the arms race. Do the benefits outweigh the risks? Provide examples.

**Directions**

In the nuclear age, the production and development of weaponry challenge the very existence of humankind. How useful are weapons? Do the benefits outweigh the risks?

**Keywords**



Answer Key & Solution

Section 1 - Coding Proficiency

Q1

Test Case

Input

Output

6745	5 19 71
------	---------

Weightage - 5

Input

Output

315	3 3 5 7
-----	---------

Weightage - 5

Input

Output

2940	2 2 3 5 7 7
------	-------------

Weightage - 10

Input

Output

8115	3 5 541
------	---------

Weightage - 10

Input

Output

6481	6481
------	------

Weightage - 10

Input

Output

7402	2 3701
------	--------

Weightage - 10

Input

Output

14416	2 2 2 2 17 53
-------	---------------



Weightage - 10

Input

Output

49498

2 24749

Weightage - 10

Input

Output

51078

2 3 8513

Weightage - 10

Input

Output

69511

13 5347

Weightage - 10

Input

Output

32535

3 3 3 5 241

Weightage - 10

Sample Input

Sample Output

225

3 3 5 5

Solution

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main() {

    int num, factor;
    scanf("%d",&num);
    for(factor=2 ; num>1 ; factor++)
    {
        if(num % factor==0)
        {
            while(num % factor==0)
            {
                num = num/factor;
                printf("%d ",factor);
            }
        }
    }
}
```

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main() {

    int num, factor;
    scanf("%d",&num);
    for(factor=2 ; num>1 ; factor++)
    {
        if(num % factor==0)
        {
            while(num % factor==0)
            {
                num = num/factor;
                printf("%d ",factor);
            }
        }
    }
}
```



```
        }  
    }  
    return 0;  
}
```

```
    }  
    return 0;  
}
```

Q2

Test Case

Input

100 200

Output

101 103 107 109 113 127 131 137 139 149 151 157

Weightage - 5

Input

20 100

Output

23 29 31 37 41 43 47 53 59 61 67 71 73 79 83 89

Weightage - 5

Input

125 567

Output

127 131 137 139 149 151 157 163 167 173 179 181

Weightage - 10

Input

642 1000

Output

643 647 653 659 661 673 677 683 691 701 709 719

Weightage - 10

Input

1000 2000

Output

1009 1013 1019 1021 1031 1033 1039 1049 1051 1061

Weightage - 10

Input

2000 5000

Output

2003 2011 2017 2027 2029 2039 2053 2063 2069 2081

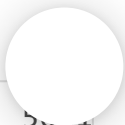
Weightage - 10

Input

5000 8000

Output

5003 5009 5011 5021 5023 5039 5051 5059 5077 5081



Weightage - 10

Input

Output

10000 15000

10007 10009 10037 10039 10061 10067 10069 10079 10081

Weightage - 10

Input

Output

1 10000

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

Weightage - 10

Input

Output

2000 20000

2003 2011 2017 2027 2029 2039 2053 2063 2069 2081

Weightage - 10

Input

Output

3000 25000

3001 3011 3019 3023 3037 3041 3049 3061 3067 3079

Weightage - 10

Sample Input

Sample Output

5 15

5 7 11 13

Solution

```
#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main()
{
    long long num, factor, till, start, end;
    scanf("%lld %lld",&start,&end);
    for(num=start ; num<=end ; num++)
    {
        till = num/2;
        for(factor=2 ; factor<=till ; factor++)
        {
            if(num % factor == 0)
                break;
        }
    }
}
```



```

    }
    if(factor>till && till!=0)
        printf("%lld ",num);
    }
    return 0;
}

#include <stdio.h>
#include <string.h>
#include <math.h>
#include <stdlib.h>

int main()
{
    long long num, factor, till, start, end;
    scanf("%lld %lld",&start,&end);
    for(num=start ; num<=end ; num++)
    {
        till = num/2;
        for(factor=2 ; factor<=till ; factor++)
        {
            if(num % factor == 0)
                break;
        }
        if(factor>till && till!=0)
            printf("%lld ",num);
    }
    return 0;
}

```

## Section 2 - Essay Writing

Q1

Sample Essay

No Essay

### Keywords

NUCLEAR AGE, PRODUCTION, DEVELOPMENT, WEAPONRY, CHALLENGE, EXISTENCE, HUMANKIND, USEFUL, WEAPONS, BENEFITS, OUTWEIGH, RISKS,

