Theory Exam 01

Answer

Answer 01 :

```
#include<stdio.h>

int main()
{

   int a=5, b=13;
   //Write code here
   int temp = a;
   a = b;
   b = temp;
   //End of code
   printf("%d and %d" , a, b);
   return 0;
}
```

Answer 02 :

```
#include<stdio.h>

int main()
{
   int a=0, b=0, c=0, d=0;
   scanf("%d %d %d %d", &a, &b, &c, &d);
   if (a>b && a>c && a>d){
      printf("Largest = %d\n", a);
   }
   else if(b>a && b>c && b>d){
      printf("Largest = %d\n", b);
   }
   else if(c>a && c>b && c>d){
      printf("Largest = %d\n", c);
```

```
    }
    else{
        printf("Largest = %d\n", d);
    }

    if (a<b && a<c && a<d){
        printf("Smallest = %d", a);
    }
    else if(b<a && b<c && b<d){
        printf("Smallest = %d", b);
    }
    else if(c<a && c<b && c<d){
        printf("Smallest = %d", c);
    }
    else{
        printf("Smallest = %d", d);
    }
    return 0;
}
```

Answer 03 :

```
#include<stdio.h>
int main()
{
    long long int n, count=0;
    scanf("%lld", &n);
    while(n%10 > 0){
        count++;
        n = n / 10;
    }
    printf("%lld\n", count);
    return 0;
}
```

Answer 04 :

```
#include<stdio.h>
int main()
{
   long long int n, count=0;
   scanf("%lld", &n);
   while(n%10 > 0){
      count += n % 10;
      n = n / 10;
   }
   printf("%lld\n", count);
   return 0;
}
```

Answer 05 :

```
#include<stdio.h>
int main()
{
   int n;
   scanf("%d", &n);
   printf("%d, ", n);
   while(n != 1){
      if (n%2 == 0){
         n /= 2;
         if(n == 1){
            printf("%d", n);
         }
         else{
            printf("%d, ", n);
         }
      }
      else{
         n--;
         printf("%d, ", n);
      }
   }

   return 0;
}
```

Answer 06 :

```
#include<stdio.h>
int main()
{
   int a, b;
   printf("Enter the first number: ");
   scanf("%d", &a);
   printf("Enter the second number: ");
   scanf("%d", &b);
   if(a%b==0){
      printf("The first number is divisible by the second number.");
   }
   else if (b%a == 0){
      printf("The second number is divisible by the first number.");
   }
   else{
      printf("None of them are divisible by the other. ");
   }


   return 0;
}
```

Answer 07 :

```
#include<stdio.h>
int main()
{
   int n1, n2, a, b, temp=0;
   scanf("%d %d",&n1 ,&n2);
   a = n1;
   b = n2;
   if(a < b){
      while(b % a != 0){
         temp = b % a;
         a = b;
         b = temp;
      }
```

```
        printf("The GCD of %d and %d is %d.", n1, n2, temp);
    }
    else{
        while(a % b != 0){
            temp = a % b;
            b = a;
            a = temp;
        }
        printf("The GCD of %d and %d is %d.", n1, n2, temp);
    }

    return 0;
}
```

Answer 08 :

```
#include<stdio.h>
int main()
{
    int n1, n2, a, b, temp=0;
    scanf("%d %d",&n1 ,&n2);
    a = n1;
    b = n2;
    if(a < b){
        while(b % a != 0){
            temp = b % a;
            a = b;
            b = temp;
        }
    }
    else{
        while(a % b != 0){
            temp = a % b;
            b = a;
            a = temp;
        }
    }
```

```
    printf("The LCM of %d and %d is %d.", n1, n2, (n1 * n2)/ temp);

    return 0;
}
```

Answer 09 :

```
#include<stdio.h>
#include <math.h>
int main()
{
    int n;
    double s, temp;
    scanf("%d", &n);
    s = sqrt(n);
    temp = floor(n);
    printf("The factors of %d are: ", n);
    for(int i=1; i<n; i++){
        if(n%i==0){
            printf("%d, ",i);
        }
    }
    printf("%d.", n);

    return 0;
}
```

Answer 10 :

```
#include<stdio.h>
#include <math.h>
int main()
{
    int n, c=0;
    scanf("%d", &n);
    for(int i= 0; i<=n; i++){
        if(n%2 == 0){
```

```
            c++;
        }
    }
    if(c>2){
        printf("Composite");
    }
    else{
        printf("Prime");
    }
    return 0;
}
```