

Assignment - 10

Functions in C Language

Que 1: Write a function to calculate the area of a circle. (TSRS)

```
#include <stdio.h>

int area(int r){
    int a = 3.14*r*r;
    return a;
}

int main()
{
    printf("enter radius of circle");
    int x;
    scanf("%d",&x);
    int areaofcircle = area(x);

    printf("area is %d : ",areaofcircle);

    return 0;
}
```

Que 2: Write a function to calculate simple interest. (TSRS)

```
#include <stdio.h>

int simpleinterest(int a,int b , int c){
    int d = (a*b*c)/100;
    return d;
}

int main()
{
    printf("enter p r t :");
    int p,r,t;
    scanf("%d%d%d",&p,&r,&t);
    int interest = simpleinterest(p,r,t);

    printf("simple interest is %d : ",interest);
}
```

```
    return 0;
}
```

Que 3 Write a function to check whether a given number is even or odd. Return 1 if the number is even, otherwise return 0. (TSRS)

```
#include<stdio.h>

int checknumber(int n){

    if(n%2==0){
        return 1;
    }
    else
        return 0;
}

int main(){

    int x = 9;

    printf("%d",checknumber(x));

    return 0;
}
```

Que :4 Write a function to print first N natural numbers (TSRN)

```
#include<stdio.h>

void printnum(int n){

    int sum =0 ;
    int i=1;
    while(i<=n){
        sum = sum+i;
        i++;
    }
    printf("%d",sum);
}

void printnum();
```

```
int main(){  
  
    int x;  
    printf("enter a number :");  
    scanf("%d",&x);  
  
    printnum(x);  
    return 0;  
  
}
```

Que 5: Write a function to print first N odd natural numbers. (TSRN)

```
#include<stdio.h>  
  
void printnum(int n){  
  
    int sum =0 ;  
    int i=1;  
    while(i<=n){  
        if(i%2 !=0){  
            sum = sum+i;  
        }  
        i++;  
  
    }  
    printf("%d",sum);  
  
}
```

```

void printnum();
int main(){

    int x;
    printf("enter a number :");
    scanf("%d",&x);

    printnum(x);
    return 0;

}

```

Que :6 Write a function to calculate the factorial of a number. (TSRS)

```

#include<stdio.h>

void fact(int n){
    //int num =1;
    int i =1;
    int factorial = 1;
    while(i<=n){

        factorial = i*factorial;
        i++;

    }
    printf("%d",factorial);
}

void fact();
int main(){

    int x;
    printf("enter a number :");
    scanf("%d",&x);

    fact(x);
    return 0;

}

```

Que : 7 Write a function to calculate the number of combinations one can make from n items r selected at a time. (TSRS)

```

#include<stdio.h>

```

```

int fact(int n ){
    int fact =1;

    for(int i  = 1;i<=n;i++){
        fact = fact*i;
    }
    return fact;
}

int combination(int n , int r){

    int comb = fact(n)/(fact(r)*fact(n-r));
    return comb;
}

int comb();
int fact();

int main(){

    int num1 ;
    int b ;

    printf("enter 2 number ");
    scanf("%d%d",&num1,&b);
    // int result = comb(num1,b);

    printf("%d",combination(num1,b));

    return 0;
}

```

Que : 8 Write a function to calculate the number of arrangements one can make from n items

and r selected at a time. (TSRS)

```

#include<stdio.h>

```

```

int fact(int n ){

```

```

    int fact =1;

    for(int i = 1;i<=n;i++){
        fact = fact*i;
    }
    return fact;
}

int arrangement(int n , int r){

    int comb = fact(n)/fact(n-r);
    return comb;
}
int comb();
int fact();

int main(){

    int num1 ;
    int b ;

    printf("enter 2 number ");
    scanf("%d%d",&num1,&b);
    // int result = comb(num1,b);

    printf("%d",arrangement(num1,b));

    return 0;
}

```

Que : 9 Write a function to check whether a given number contains a given digit or not.
(TSRS)

```

#include<stdio.h>

int check(int num , int dig){

    while(num>0){
        int rem = num%10;
    }
}

```

```

        num/=10;

        if(rem == dig){
            return 1;
        }
    }
    return 0;
}

int main(){

    int num1 ;
    int x ;

    printf("enter two numbers ");
    scanf("%d%d",&num1,&x);
    int result = check(num1,x);
    printf("%d",result);

    return 0;
}

```

Que : 10 Write a function to print all prime factors of a given number. For example, if the number is 36 then your result should be 2, 2, 3, 3. (TSRN)

```

#include<stdio.h>

int prime(int n ){

    for(int i = 2 ;i >1;i++){
        while(n%i==0){

            printf("%d",i);
            n/=i;
        }
    }
}

int main(){

```

```
int num1 ;  
int x ;  
  
printf("enter a number ");  
scanf("%d",&num1);  
int result = prime(num1);  
printf("%d",result);  
  
return 0;  
}
```