Assignment (03)

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:- Determine Output following Program:-

a)

```
main( )
{
   printf ("\nOnly stupids use C?");
    display ( );
}
display( )
{
   printf ("\nfools too use C!");
    main( );
}
```

Output:-

- Only stupids use C?
- fools too use C!

a):-

corre

void (

{

}

ma

{

b):-

```
main( )
{
    printf("\n C to if that C survives");
    main( );
}
```

Out put:-

- C to if that C survices.

c):-

```
main( )
{
    int i= 45, c;
    c= cheak(i);
    printf("%d",c);
}
cheact (int ch)
{
    if (ch >= 45)
        return (100);
    else
        retur (10*10);
}
```

Out put:-

- 100.

b):- (

d):-

```
mein ( )
{
    int i= 45 c;
    c= multiply (i*1000)
    printf("\n %d", c);
}
check(int ch)
{
    if(ch>= 40000)
        return (ch\10);
    else
        return (10)
}
```

Out put:-

- 4500.

Point out the error, if any, in the following program.

a):-

correct program is:

```
void addmult(int ii, int jj, int *sum, int *product)
{
  *sum = ii+jj;
  *product= ii*jj;
}
main()
{
  int i= 3, j= 4, k, l;
  addmult(i, j, &k, &l);
  printf("\n%d %d",k,l);
}
```

c:- correct program:

```
main(){
    float a= 15.5;
    char ch= 'C';
    printit(a, ch);
}
void printit(a, ch){
        printf("\n%f %c",a,ch);
```

b):-

Correct program:-

```
void massage()
{
   printf("\n Viruses are written in C");
    return;
}
main()
{
   massage();
}
```

e:- correct program is:-

```
void let-us-c ( );

main ( )
{
  let_us-c( );
}
void let-us-c ( ){
    printf("\nC is simple minded language!");
    printf ("\nOther are of cource no math!");
}
```

f:- correct program:

```
void massage( );
main ( )
{
   massage ( );
}
void massage ( ){
   printf ("\nPraise worthy and c worthly are synonym");
}.
```

: Write the following programs.

a.):

```
#include <stdio.h>
int factorial(int c){
    if (n==0){
        return 1;
    }
    else{
        return n* factorial(n-1);
    }
}
int main(){
    int num;
    printf("Enter an integer:");
    scanf("%d", &num);
    if (num<0){
        printf("factorial is not defined for negative number.\n");
    }else{
        printf("factorial of %d is %d\n", num, factorial(num));
    }
    return 0;
}
```

```c
#include <stdio.h>
int power (int a, int b){
    if (b==0){
        return 1;
    } else {
        return a* power(a, b-1);
    }
}
int main (){
    int base, exponent;
    printf("Enter base: ");
    scanf("%d", &base);
    printf("Enter exponent:");
    scanf("%d", &exponent);
    printf("%d raised to the power of %d is %d\n", base, exponent,
        power (base, exponent));
    return 0;
}
```

```c
# include <stdio.h>
int is_leap_year (int year){
    if (year % 4==0){
        if (year % 100==0){
            return year % 400==0;
        }else{
            return 1;
        }
    }else {
        return 0;
    }
}
int main (){
    int year;
    printf("Enter a year:");
    scanf("%d", & year);
    if ( is_leap_year (year)){
        printf("%d is a leap year.\n", year);
    } else {
        printf("%d is not a leap year.\n", year);
    }
    return 0;
}
```

```c
#include <stdio.h>
void prime_factors(int n){
    int i;
    printf("Prime factors of %d are: ", n);
    for(i=2; i<=n; i++){
        while (n%i==0){
            printf("%d, i){;
            n/=i;
        }
    }
    if(n>1){
        printf("%d", n);
    }
    printf("\n");
}
int main(){
    int num;
    printf("Enter a positive number: ");
    scanf("%d", &num);
    prime_factors(num);
    return 0;
}
```