

1. Write down the output of the following program?

[6]

```
#include<stdio.h>
int main()
{   int i,*p,a[7]={2,3};
    p=a+1;
    for(i=0;i<7;i++)
        printf("%d ",*(a+i));
    printf("\n-----\n");
    for(i=0;i<3;i++)
        p[i]=i-10;
    for(i=0;i<7;i++)
        printf("%d ",a[i]);
    printf("\n");
    return 0;}
```

2. Write down the output of the following program?

[6]

```
#include<stdio.h>
int main()
{   int i,j,*p,a[2][4]={0};
    p=(a+1)-2;
    for(i=0;i<4;i++)
        p[i] = i+10;
    for(i=0;i<2;i++)
        {for(j=0;j<4;j++)
            printf("%d ",a[i][j]);
          printf("\n");
        }
    return 0;}
```

3. An incomplete C program is given below. The output of the program is a=2,b=3,c=1. Write down the prototype of the function *mystery* and complete the details of the function *mystery*.

[7]

```
#include<stdio.h>
int main()
{int a=1,b=2,c=3;
  mystery(&a,&b,&c);
  printf("a=%d,b=%d,c=%d \n",a,b,c);
  return 0;}
```

4. Write down the output of the following program:

```
#include <stdio.h>
void aup3(int,int *,int,int *);
int main()
{int a[5]={5,4,3,2,1};
int i,sum = 4;
aup3(a[1],a+2,a[2],&sum);
printf("sum = %d\n",sum);
for(i=0;i<5;i++)
    printf("%d  ",a[i]);
printf("\n");
return 0;}

void aup3(int a, int *b, int c, int *total)
{int sum;
sum = a*b+c;
total = &sum;
*(b-1)=10;
*(b+2)=20;
a=14;
c=11;}
```

5. Complete the C program below. It calculates and prints the number of times the alphabet  $i$  occurs in the given string  $str$ . You may declare other variables. [6]

```
#include<stdio.h>
int main()
{ char str[]="The participants should be given a copy";
char ch='i';
```

6. Complete the C function

```
double erf(double x,double eps)
{

}
}
```

which returns the value of the error function. The error function,  $\text{erf}(x)$ , is defined using the following series:

$$\text{erf}(x) = \frac{2}{\sqrt{\pi}} \sum_{n=0}^{\infty} \frac{(-1)^n x^{2n+1}}{n!(2n+1)}.$$

Sum the terms in the series as long as their *magnitude* are greater than  $\text{eps}$ . [8]