

## Answer 1

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

typedef struct
{
    char name[20];
    float assignment[5];
    float test[2];
    float endSem,totalScore;
}student;

void read(student *s)
{
    printf("Enter name:\n");
    scanf("%s",(*s).name);
    printf("Enter 5 assignment scores:\n");
    scanf("%f %f %f %f %f",
    %f",&(*s).assignment[0],&(*s).assignment[1],&(*s).assignment[2],&(*s).assignment[3],&(*s).assignment[4]);
    printf("Enter 2 test scores:\n");
    scanf("%f %f",&(*s).test[0],&(*s).test[1]);
    printf("Enter endsem score:\n");
    scanf("%f",&(*s).endSem);
}

void compute(student *s)
{
    (*s).totalScore=(*s).assignment[0]+(*s).assignment[1]+(*s).assignment[2]+(*s).assignment[3]+(*s).assignment[4]+(*s).test[0]+(*s).test[1]+(*s).endSem;
}

void print(student s)
{
    printf("Name: %s\t",s.name);
    printf("Total Marks: %f\n",s.totalScore);
}

int main()
{
    student s[100];
    int n,i;
    printf("Enter number of students:\n");
    scanf("%d",&n);;
```

```

        for(i=0;i<n;i++)
        {
            read(&s[i]);
            compute(&s[i]);

        }
        for(i=0;i<n;i++)
        print(s[i]);
        return 0;
    }

```

## Answer 2

```

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

typedef struct
{
    char name[20];
    float assignment[5];
    float test[2];
    float endSem,totalScore;
}student;

void read(student *s)
{
    printf("Enter name:\n");
    scanf("%s",(*s).name);
    printf("Enter 5 assignment scores:\n");
    scanf("%f %f %f %f %f",
    %f",&(*s).assignment[0],&(*s).assignment[1],&(*s).assignment[2],&(*s).assignment[3],&(*s).assignment[4]);
    printf("Enter 2 test scores:\n");
    scanf("%f %f",&(*s).test[0],&(*s).test[1]);
    printf("Enter endsem score:\n");
    scanf("%f",&(*s).endSem);
}

void compute(student *s)
{
    (*s).totalScore=(*s).assignment[0]+(*s).assignment[1]+(*s).assignment[2]+(*s).assignment[3]+(*s).assignment[4]+(*s).test[0]+(*s).test[1]+(*s).endSem;
}

```

```

}
void print(student *s)
{
    printf("Name: %s\t",(*s).name);
    printf("Total Marks: %f\n",(*s).totalScore);
}
int main()
{
    student *s;
    int n,i;
    printf("Enter number of students:\n");
    scanf("%d",&n);
    s=calloc(n,sizeof(student));
    for(i=0;i<n;i++)
    {
        read(s+i);
        compute(s+i);
    }
    for(i=0;i<n;i++)
    print(s+i);
    return 0;
}

```

### Answer 3A

```

#include<stdio.h>

int *odd(int N)
{
    int *a,i,j;
    a=calloc(N,sizeof(int));
    for(i=1,j=0;j<=N;i+=2,j++)
        *(a+j)=i;
    return a;
}
void main()
{
    int n,i;
    int *a;
    printf("Enter number of odd numbers:\n");

```

```

scanf("%d",&n);
a=odd(n);
for(i=0;i<n;i++)
printf("%d ",*(a+i));
}

```

Answer 3B'

```
#include <stdio.h>
```

```

void main()
{
    int a[10][10];
    int *p=a;
    int m,n,i,j;
    printf("Enter number of rows and columns:\n");
    scanf("%d %d",&m,&n);
    printf("Enter elements:\n");
    int k=0;
    for(i=0;i<m;i++)
    {
        for(j=0;j<n;j++)
        {
            scanf("%d",(p+k));
            k++;
        }
    }
    printf("Elementms of the 2D array are:\n");
    k=0;
    for(i=0;i<m;i++)
    {
        for(j=0;j<n;j++)
        {
            printf("%d ",*(p+k));
            k++;
        }

        printf("\n");
    }
}

```

#### Answer 4A

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

int memRelease(int ** a)
{
    free(*a);
    *a=NULL;
    if(*a==NULL)
        return 1;
    else
        return -1;
}

void main()
{
    int rNum,cNum,i,j;
    printf("Enter elements\n");
    printf("Enter Row Number\n");
    scanf("%d",&rNum);
    int **table = calloc(rNum+1,sizeof(int *));
    table[rNum]=NULL;
    for(i=0;i<rNum;i++)
    {
        printf("Enter column size %d \n",i+1);
        scanf("%d",&cNum);
        table[i]=calloc(cNum+1,sizeof(int));
        table[i][0]=cNum;
        for(j=1;j<=table[i][0];j++)
            scanf("%d",&table[i][j]);
    }

    printf("\nElements are\n");
    for(i=0;i<rNum;i++)
        {for(j=1;j<=table[i][0];j++)
            printf("%d ",table[i][j]);
        printf("\n");}

    for(i=0;i<rNum;i++)
        j=memRelease(&table[i]);

    free(table);
```

```
}
```

#### Answer 4B

```
#include<stdio.h>
```

```
#include<stdlib.h>
```

```
int * copyto1D(int ** table)
```

```
{
```

```
    int no=0,i=0,j,k=0,rNum;
```

```
    while(table[i]!=NULL)
```

```
        no+=table[i++][0];
```

```
    rNum=i;
```

```
    int * a= calloc(no+1,sizeof(int));
```

```
    for(i=0;i<rNum;i++)
```

```
        for(j=1;j<=table[i][0];j++)
```

```
            a[k++]=table[i][j];
```

```
    *(a+no)='\0';
```

```
    return a;
```

```
}
```

```
void main()
```

```
{
```

```
    int rNum,cNum,i,j;
```

```
    printf("Enter elements\n");
```

```
    printf("Enter Row Number\n");
```

```
    scanf("%d",&rNum);
```

```
    int **table = calloc(rNum+1,sizeof(int *));
```

```
    table[rNum]=NULL;
```

```
    for(i=0;i<rNum;i++)
```

```
    {
```

```
        printf("Enter column size %d \n",i+1);
```

```
        scanf("%d",&cNum);
```

```
        table[i]=calloc(cNum+1,sizeof(int));
```

```
        table[i][0]=cNum;
```

```
        for(j=1;j<=table[i][0];j++)
```

```
            scanf("%d",&table[i][j]);
```

```
    }
```

```
    printf("\nElements are\n");
```

```
for(i=0;i<rNum;i++)
    {for(j=1;j<=table[i][0];j++)
        printf("%d ",table[i][j]);
        printf("\n");}

printf("\n\n1D Array is\n")
int * a = copyto1D(table);
i=0;
while(a[i]!='\0')
    printf("%d ",a[i++]);

}
```