1. Determine which of the following are valid identifiers? If the alleged identifier is not valid, give a short explanation. [6]

    (a) A+b (b) h2!s (c) real (d) Real (e) sw=b (f) chaar (g) down_under (h) C fun

2. The following statements are part of a C program in which x, y and sum are integers. What are the outputs in each of these? [2+1+2+3]

    a.   x=1,y=2;
            while(x+y<12)
              {
              x++;
              y *=2;
              }
            printf("x = %d y = %d\n",x,y);

    b.   x=3,y=3;
            if(x<y)
               x +=2;
            if(x>y)
               y +=2;
            printf("x = %d y = %d\n",x,y);

    c.   x=0,y=1,sum=0;
            for(sum=0,x=1;x+y<5;x−−,y +=2)
              {
              sum += x+y;
              }
            printf("x = %d y = %d sum = %d\n",x,y,sum);

    d.   sum=10;
            for(y=1;y<sum;y *=2)
              {
              for(x=1;x<=y;x++)
                printf("%d",y);
                printf("\n");
              }

3. Rewrite the statements in Question 2(d) using *while* loop instead of *for* loop. [4]

4. Write a program which takes three integers input representing a time (in 24 hour clock convention) as hours, minutes, and seconds. While reading, the program checks the acceptability of the input numbers. It then prints out the time (in 24 hour clock convention) obtained by adding 15 seconds to the input time. [10]

   Example: For typical input *14 20 46* the typical output is *14:20:46+00:00:15=14:21:01*

5. Write down the output of the following program: [6]

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

6. Write a program which accepts an integer n and checks whether the input number n is in the range from *-10* to *10*. If the integer is *not* in the given range, then it asks the user to enter the integer again. It then calculates the sum of integers from n to n^3 and prints out the result. [9]

7. Write a program that accepts the monthly salary as an integer (maximum 5 digits) and produces the output as shown in the example. [7]

   Example: For input *4012* the output is *The monthly salary is Rupees 4 thousand and 12 only.* For input *24102* the output is *The monthly salary is Rupees 24 thousand 1 hundred and 2 only.*