PPS Assignment - 1

1604-21-748-045

MJCET

Assignment / Tutorial Sheet

Q1: One apple contains about 225 calories, a person burns up 100 calories by running a mile. Write an algorithm which asks a person to type in the number of apples a person wants to eat and display the number of miles a person should run to burn up the calories.

Sol: Algorithm:

Step 1: Start

Step 2: Declare 3 variables m, n and c

Step 3: Read value for n (no. of apples)

Step 4: Calculate the value of cal. as $c = (225 \times n)$

Step 5: Display c value

Step 6: Calculate the value of miles as $m = c/100$

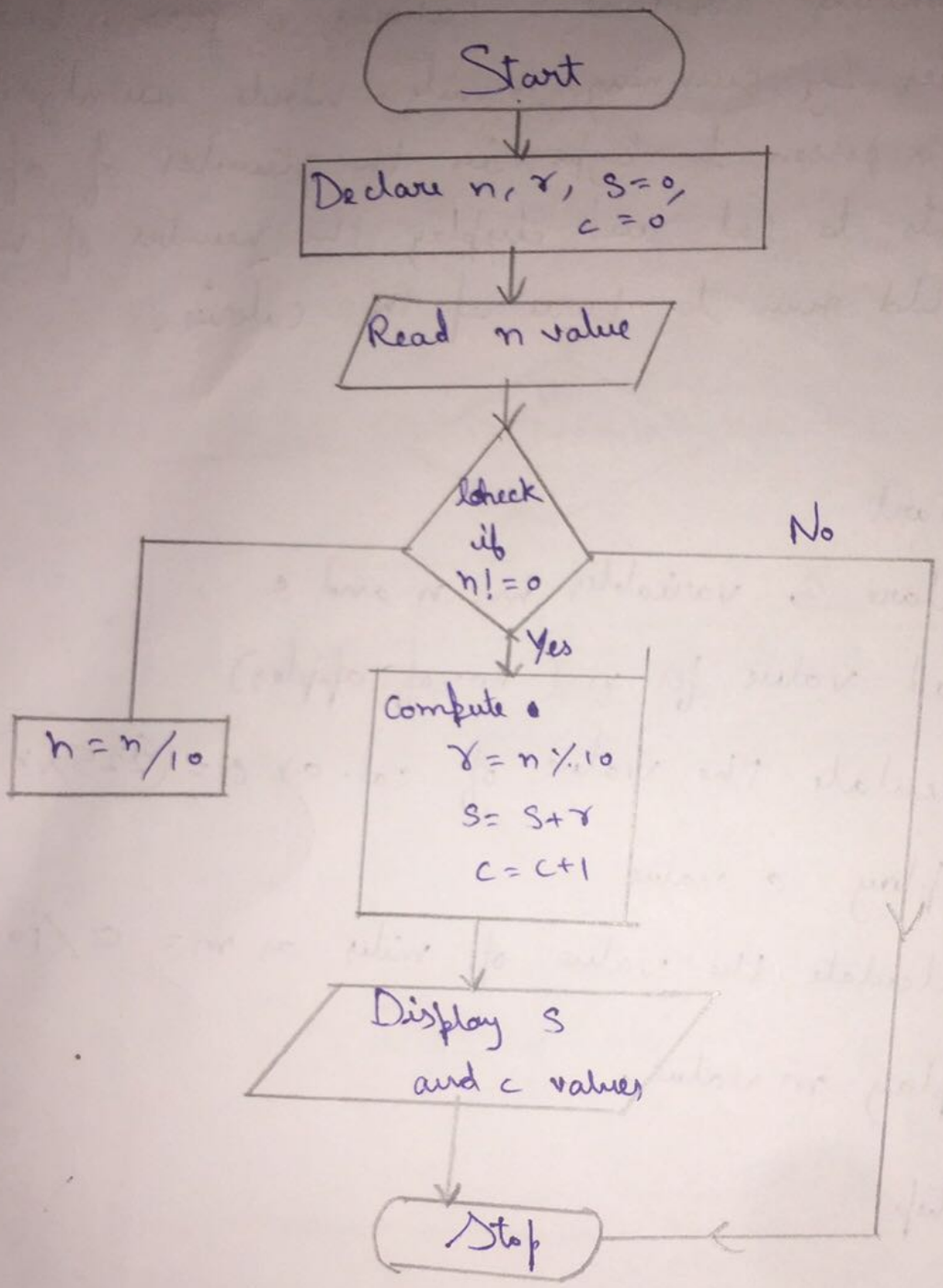
Step 7: Display m value.

Step 8: Stop

Q2: Draw a flowchart to find the sum and count of digits in a given number.

Sol:

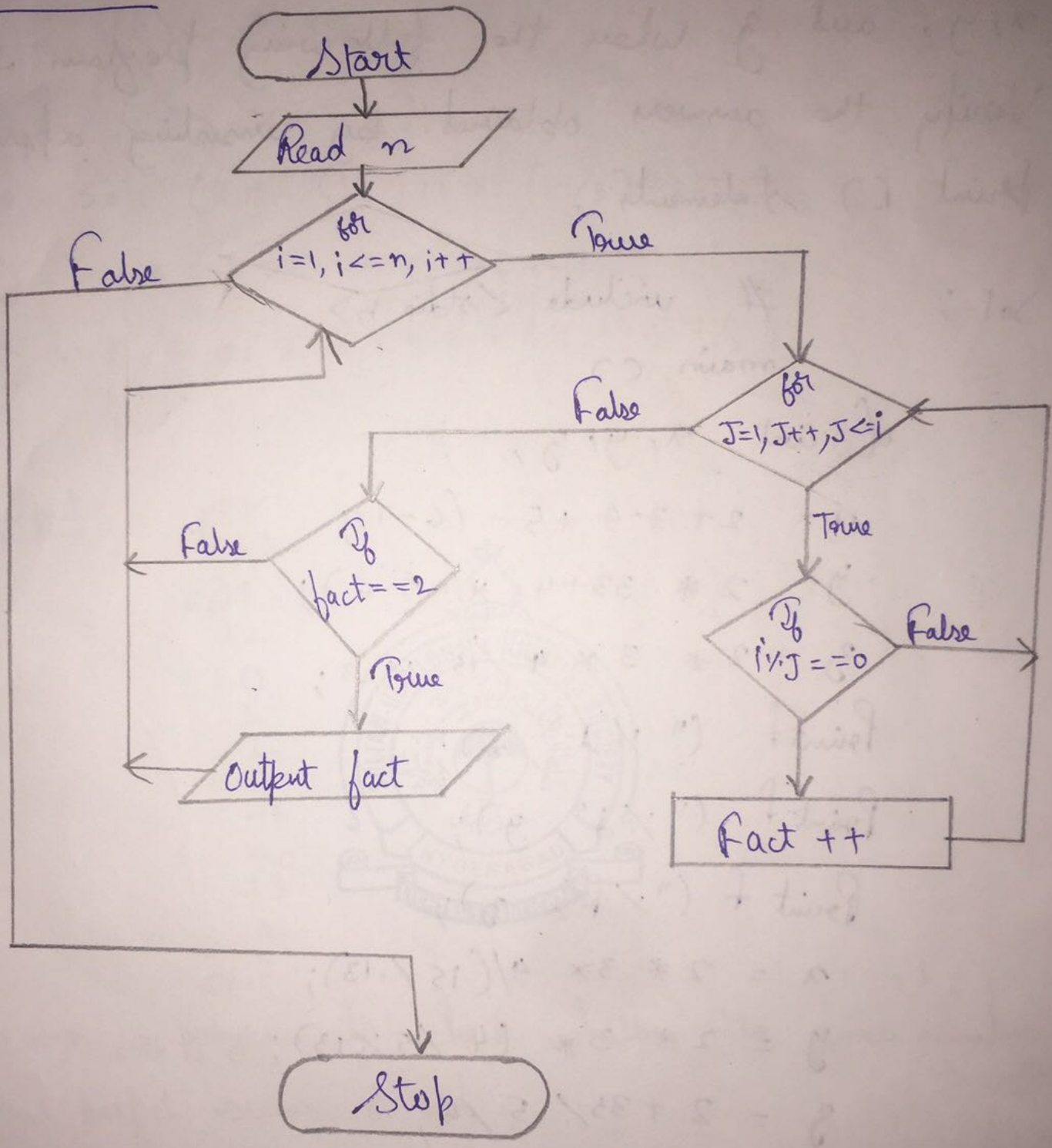
Sol: Flowchart:



Q3: Draw a flow chart to print prime numbers upto a given limit.

Sol:

Flowchart:



PPS Assignment - 2

Q1: Find the value that is assigned to the variable x, y, and z when the following program is executed. Verify the answers obtained by inserting appropriate print() statements.

Sol:

```
#include <stdio.h>
main()
{ int x, y, z;
  x = 2+3-4+5-(6-7);
  y = 2*33+4*(5-6);
  z = 2*3*4/15%13;
  Printf ("%d", x);
  Printf ("%d", y);
  Printf ("%f", z);
  x = 2*3*4/(15%13);
  y = 2*3*(4/15%13);
  z = 2+33%5/4;
  Printf ("\n%d", x);
  Printf ("\n%d", y);
  Printf ("\n%d", z);
  x = 2+33%-5/4;
  y = 2*33%-5/-4;
  z = -2*-3/-4%-5;
```

```
Printf ("\n %d", x);
Printf ("\n %d", y);
Printf ("\n %d", z);
    x = 50 % (5 * (16 % 12 * (17/3)));
    y = -2 * -3 % -4 / -5 - 6 + -7;
    z = 8 / 4 % 2 * 2 * 4 * 8 % 13 % 7 % 3;
    }
```

Output:

```
7
62
1
12
0
2
2
2
-1
50
-13
2
```

Q2) Design a program to check whether the given numbers is a perfect square of not.

Sol:

```
# include <stdio.h>
# include <math.h>
int main ()
{ int n, i;
  float s;
```

```
Printf ("Enter any positive number : ");
Scanf ("%d", &n);
    s = sqrt (n);
    i = s;
    if (i==s)
Printf ("%d is a perfect square ", n);
    else
Printf ("%d is not a perfect square ", n);
    return 0;
    }
```

output : Enter any positive number : 9
9 is a perfect square

(Q.6b) Write a C program to find the average of n numbers using for loop.

Sol:

```
# include <stdio.h>
main()
{   int n, num, i, s=0;
    float avg;
    Printf ("\n Enter how many numbers you want? : ");
    Scanf ("%d", &n);
    Printf ("\n Enter the elements one by one :");
    for (i=0; i<=n; i++)
    {  scanf ("%d", &num);
        S = S+num;
```

```
}
avg = s/n;
Printf ("Average of the %d numbers = %f", n,
                                        avg);
    return 0; }
```

output: Enter how many elements you want ?:

5

Enter the elements one by one :

1
2
2
3
5

Average of the 5 numbers = 2.00