Department of Computer Science
Class Assignment No.
2, June 2020 [Total Marks 25]
Instructor: Samreen Ishfaq
Data Structure & Algorithms

Batch: F18 **Section: B**

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This assignment is due on 19th June, 2020. This page will be the front page of your assignment, you have to write your group member names and registration numbers on it. Late submission is not acceptable.

Question: Show complete dry run, output and number of function call of these recursive functions.

1	**F('G') & F('3')**

int F(char ch)
{
If ('A'<= ch && ch <= 'H')
{
F(ch-1) cout<<ch;
}
Else
{
cout<<endl;
}
}	

2 int F(char ch)
{
if('A'<= ch && ch <= 'H')
{
F(ch+1); cout<<ch;
}
else
{
cout<<endl;
}
}
	F('C')

3-int F(char ch)
 	
{
 	
if('A'<= ch && ch <= 'H')
{
cout<<ch; F(ch-1);
}
else
{
cout<<endl;
}
}
	FUN('C')

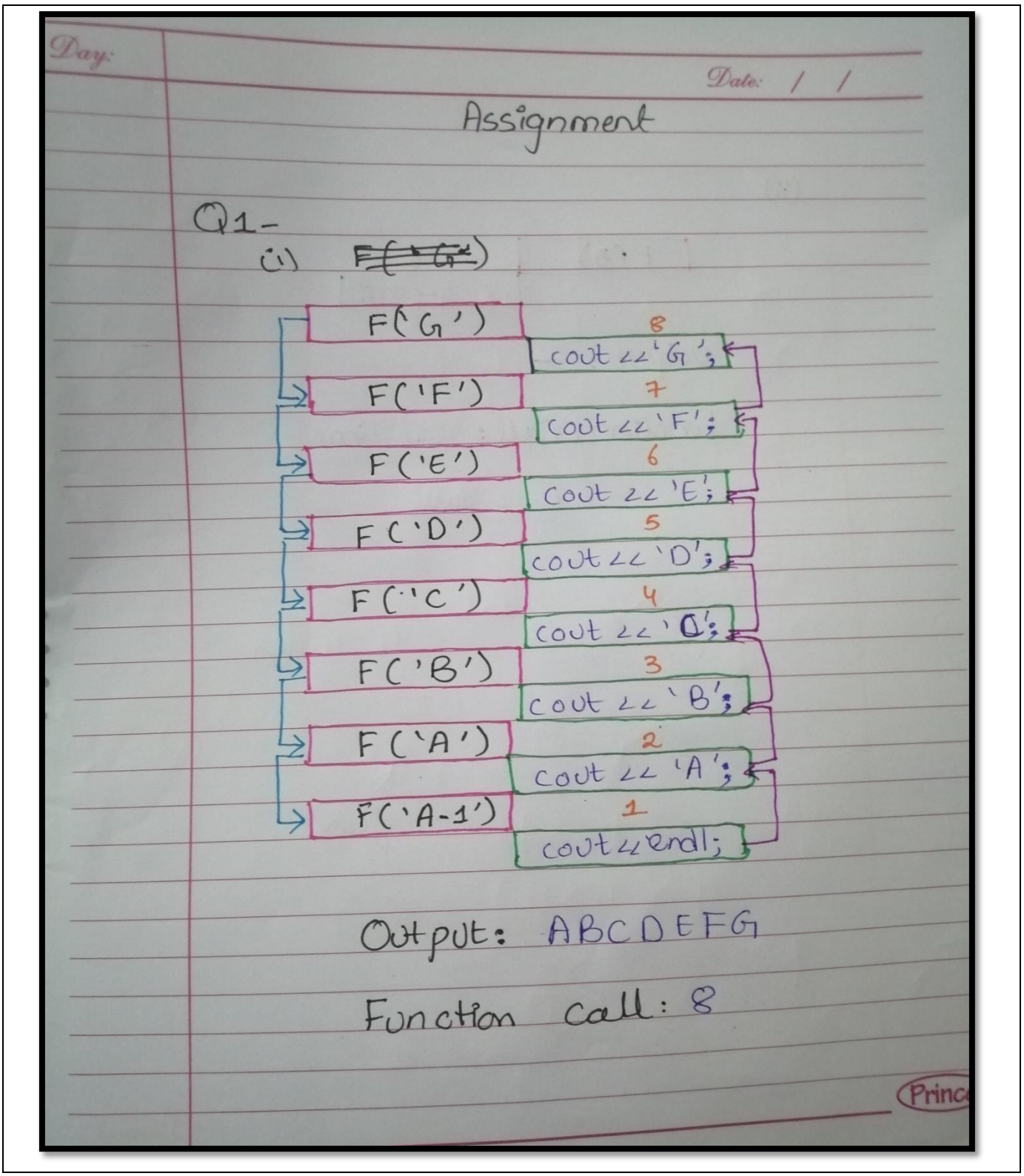
4-int Fun(char c1,char c2)	**Function call with :Fun('a','e'); & Fun('h','c');**

```
{
    if(c1>c2)
        return 0;
    if(c1+1==c2)
        return 1;
  return Fun(c1+1,c2-1)+2;
}
```

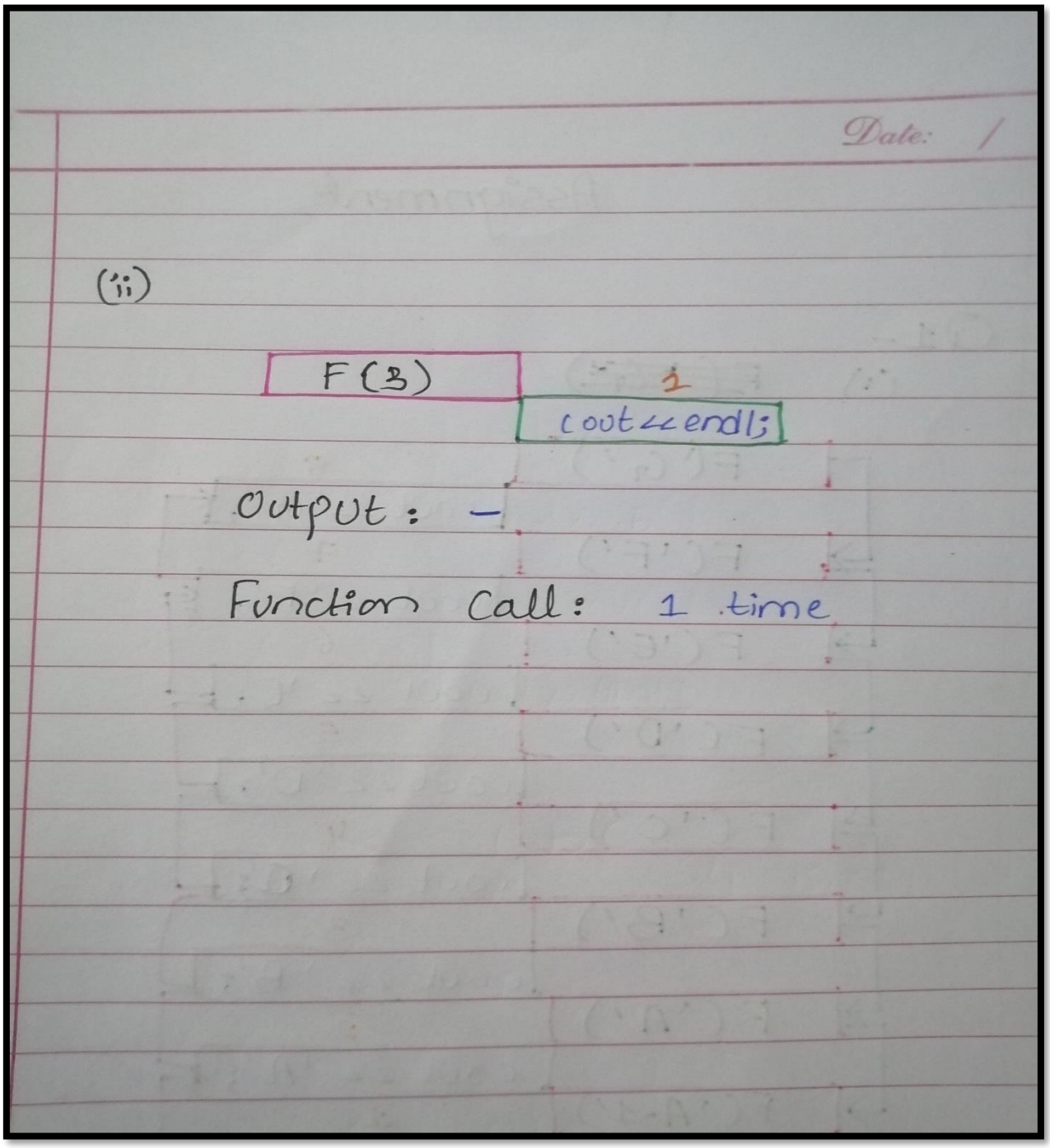
5-void G(char ch,int n)	**Input: G('M',4)**

```
{
   if(n<=0)
       cout<<endl;
   else
   {
     G(ch-1,n-1);
     cout<<ch;
     G(ch+1,n-1);
    }
}
```

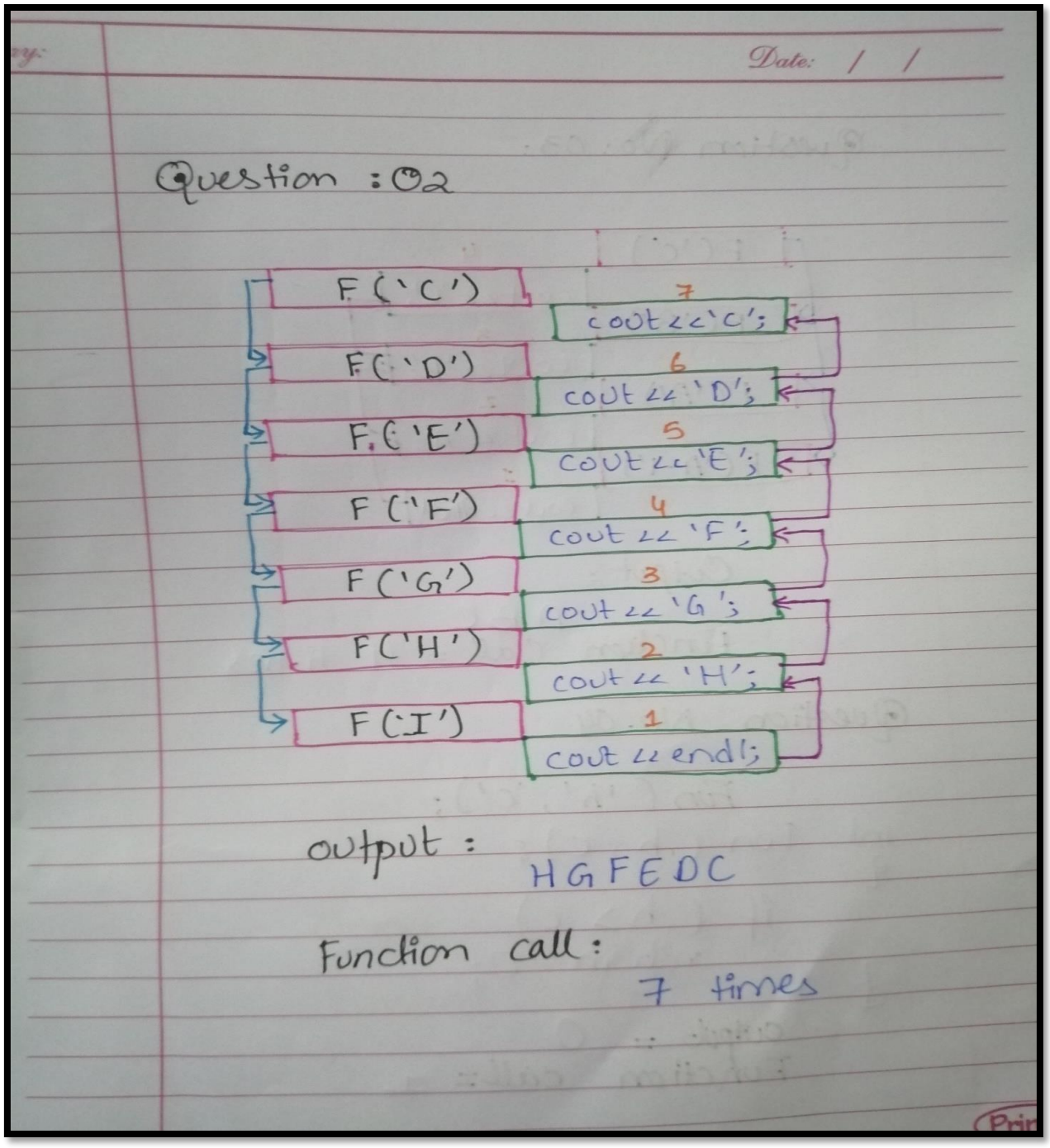
Question 01:


Day:
Date: / /
Assignment
Q1-
(i)
F('G')
F('F')
F('E')
F('D')
F('C')
F('B')
F('A')
F('A-1')
8
cout << 'G';
7
cout << 'F';
6
cout << 'E';
5
cout << 'D';
4
cout << 'C';
3
cout << 'B';
2
cout << 'A';
1
cout << endl;
Output: ABCDEFG
Function call: 8

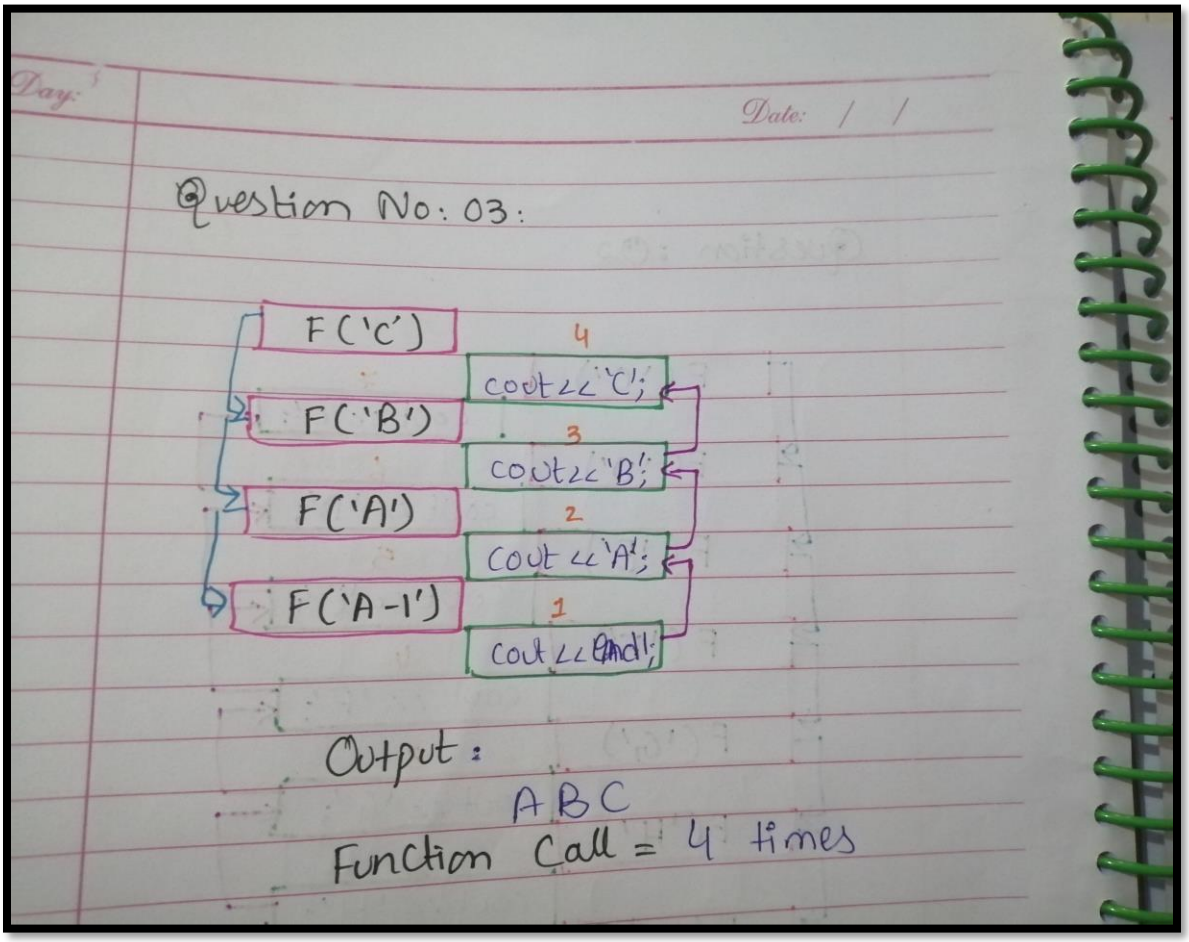
Part 2



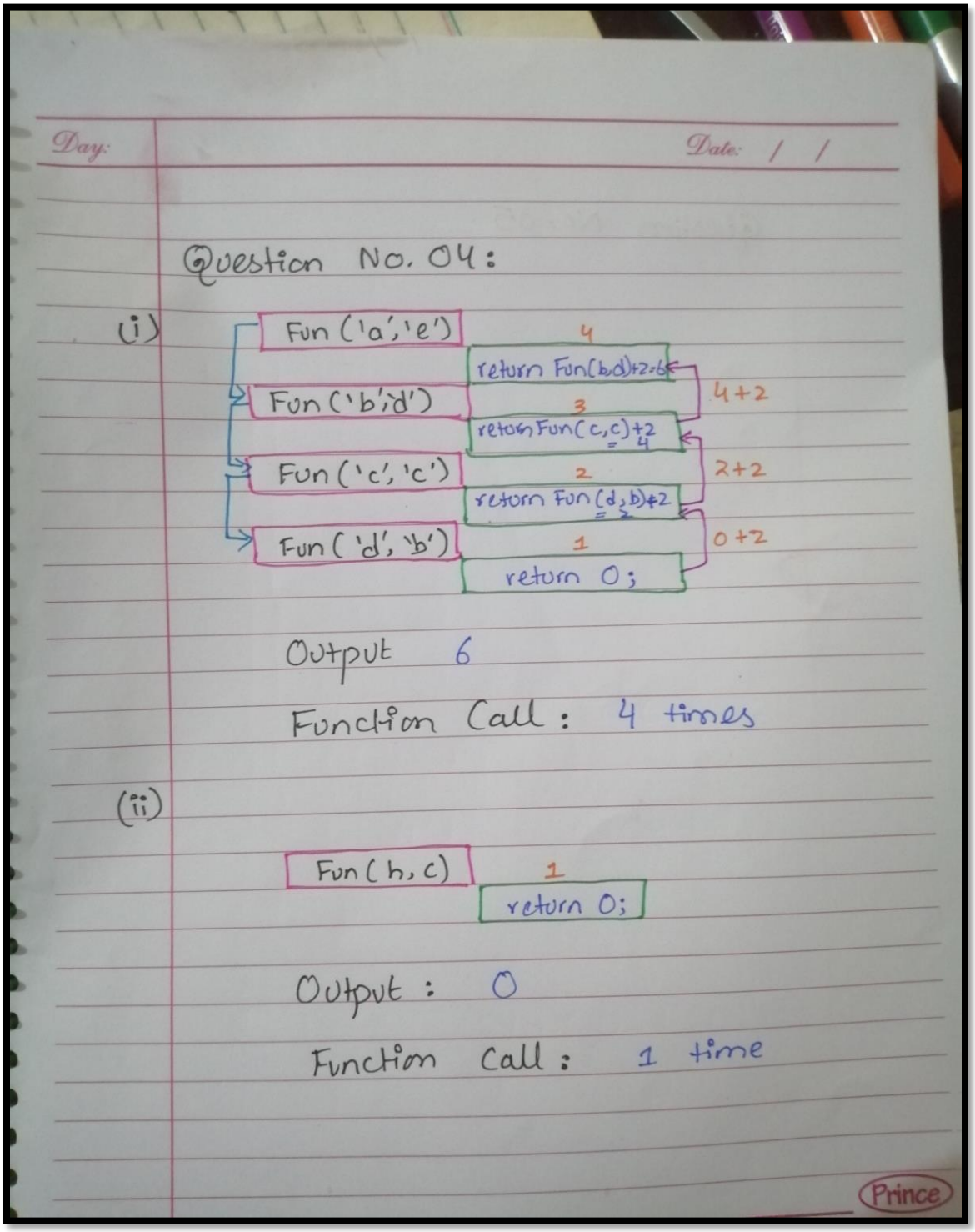
Question 02:


Date: / /
Question : 02
F('C')
F('D')
F('E')
F('F')
F('G')
F('H')
F('I')
7
cout << 'C';
6
cout << 'D';
5
cout << 'E';
4
cout << 'F';
3
cout << 'G';
2
cout << 'H';
1
cout << endl;
output :
HGFEDC
Function call :
7 times

QUESTION 03:


Day:
Date: / /
Question No: 03:
F('C')
F('B')
F('A')
F('A-1')
4
cout<<'C';
3
cout<<'B';
2
cout<<'A';
1
cout<<endl;
Output:
ABC
Function Call = 4 times

QUESTION 04:


Day:
Date: / /
Question No. 04:
(i)
Fun ('a','e')
4
return Fun(b,d)+2=6
Fun ('b','d')
3
return Fun(c,c)+2
=4
Fun ('c','c')
2
return Fun(d,b)+2
=2
Fun ('d','b')
1
return 0;
4+2
2+2
0+2
Output 6
Function Call: 4 times
(ii)
Fun(b,c)
1
return 0;
Output : 0
Function Call: 1 time
Prince

QUESTION 05: