

Name: Roll No:
e.g. 17001Dept.:
e.g. CHESect.:
e.g. A4IIT Kanpur
ESC101 Fundam. of Comp.
NAME OF EXAMINATION
Date: January 16, 2018

Instructions:

Total: 010 marks

1. This question paper contains a total of 6 pages (6 sides of paper). Please verify.
2. Write your name, roll number, department on **every side of every sheet** of this booklet.
3. Write final answers **neatly with a pen**. Pencil marks can get smudged and you may lose credit.
4. Do not give derivations/elaborate steps unless the question specifically asks you to provide these.

Problem 1 (Ultra Short Answer: 5 marks). Give your answers in the space provided only.

1. In the space given, write down the output of the program given below.

```

1 #include<stdio.h>
2 int value;
3 void recurse(int array[], int sz){
4     if(sz == 1)
5         return;
6     array[sz/2] = value;
7     value++;
8     recurse(array + sz/2, sz/2);
9     recurse(array, sz/2);
10 }
11 int main() {
12     value = 0;
13     int sz = 5;
14     int array[5];
15     for (int i = 0; i < sz; ++i)
16     {
17         array[i] = 100+i;
18     }
19     recurse(array, sz);
20     for (int i = 0; i < sz; ++i)
21     {
22         printf("%d\n", array[i]);
23     }
24 }

```

```

1 100
2 2
3 0
4 1
5 104

```

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Problem 2 (Ultra Short Answer: 5 marks). Give your answers in the space provided only.

1. In the space given, write down the output of the program given below.

```

1 #include<stdio.h>
2 void recurse(int array[], int sz){
3     if(sz == 1)
4         return;
5     for(int i = 1; i < sz; i++){
6         array[i] = array[i] + array[i-1];
7     }
8 }
9 void deepRecurse(int array[], int sz){
10    for(int i = 0; i < sz; i++)
11        recurse(array+i, sz-i);
12 }
13 int main() {
14     int array[5];
15     int sz = 5;
16     for (int i = 0; i < sz; ++i)
17     {
18         array[i] = i;
19     }
20     for(int i = 1; i < sz; i++)
21         deepRecurse(array+i, sz-i);
22     for (int i = 0; i < sz; ++i)
23     {
24         printf("%d\n", array[i]);
25     }
26 }

```

1	0
2	1
3	3
4	12
5	64