

	Course:	Data Structures	Course Code:	CS218
	Program:	BS(Computer Science)	Semester:	Fall 2022
	Duration:	10 Minutes	Total Marks:	10
	Paper Date:	20-Oct-22	Weight	
	Section:	D	Page(s):	1
	Exam:	Quiz 3(a)	Roll No:	
			Section:	D

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What is the functionality of following recursive function? Give your answer in 2 lines only also compute its answer for n=27

```

int fun1(int n)
{
    if(n == 1)
        return 0;
    else
        return 1 + fun1(n/2);
}
    
```

for of random $n = 40$

$n = 40$

$n = 105$

$fun1.$
 $1 + (13)$
 $1 + 1 + fun1.$
 $1 + 1 + (6)$
 $1 + 1 + 1 + fun(3)$
 $1 + 1 + 1 + 1 + fun(1)$

$1 + fun1(20)$
 $1 + 1 + fun1(10)$
 $1 + 1 + 1 + fun1(5)$
 $1 + 1 + 1 + 1 + fun(2)$
 $1 + 1 + 1 + 1 + 1 + fun(1)$
 answer = 5

$1 + 52$
 $1 + 1 + 26$
 $1 + 1 + 1 + 13$
 $1 + 1 + 1 + 3$
 answer = 6

if input is 27 answer will be 4

it is computing $\log_2 n$ it gives the answer in whole number of $\log_2 n$

550
 $1 + 275$
 $1 + 137$
 $1 + 1 + 68$
 $1 + 1 + 1 + 34$
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