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**NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Programming, Data Structures And Algorithms Using Python (course)**



## Course outline

How does an NPTEL online course work? ()

Week 1 : Introduction ()

Week 1 Quiz ()

☐ Quiz: Week 1 Quiz (assessment? name=86)

Week 2: Basics of Python ()

Week 2 Quiz ()

Week 2 Programming Assignment ()

# Week 1 Quiz

The due date for submitting this assignment has passed.

**Due on 2020-02-12, 23:59 IST.**

**As per our records you have not submitted this assignment.**

All questions carry equal weightage. All Python code is assumed to be executed using Python3. You may submit as many times as you like within the deadline. Your final submission will be graded.

1) What is the value of  $f(4000)$  for the function below?

```
def f(x):
    d=0
    while x >= 1:
        (x,d) = (x/5,d+1)
    return(d)
```

No, the answer is incorrect.

Score: 0

Feedback:

*The function computes the number of digits required to write x in base 5.*

Accepted Answers:

(Type: String) 6

**2.5 points**

2) What is  $h(36) - h(34)$ , given the definition of h below?

**Week 3:**  
**Lists,**  
**inductive**  
**function**  
**definitions,**  
**sorting ()**

**Week 3**  
**Programming**  
**Assignment**  
**()**

**Week 4:**  
**Sorting,**  
**Tuples,**  
**Dictionaries,**  
**Passing**  
**Functions,**  
**List**  
**Comprehension**  
**()**

**Week 4 Quiz**  
**()**

**Week 4**  
**Programming**  
**Assignment**  
**()**

**Week 5:**  
**Exception**  
**handling,**  
**input/output,**  
**file handling,**  
**string**  
**processing ()**

**Week 5**  
**Programming**  
**Assignment**  
**()**

**Week 6:**  
**Backtracking,**  
**scope, data**  
**structures;**  
**stacks,**  
**queues and**  
**heaps ()**

```
def h(n):
    s = 0
    for i in range(2,n):
        if n%i == 0:
            s = s+i
    return(s)
```

No, the answer is incorrect.  
Score: 0

Feedback:

*h(n) adds up the factors of n from 2 to n-1. h(36) = 2+3+4+6+9+12+18 = 54 and h(34) = 2+17 = 19, so the difference is 35.*

Accepted Answers:  
(Type: String) 35

**2.5 points**

3) For what value of n would g(637,n) return 4? If there are multiple possibilities, write any one.

```
def g(m,n):
    res = 0
    while m >= n:
        (res,m) = (res+1,m/n)
    return(res)
```

No, the answer is incorrect.  
Score: 0

Feedback:

*This function computes the log (integer part) of m in base n.*

- $4^4=256 \leq 637 < 4^5=1024$
- $5^4=625 \leq 637 < 5^5=3125$

Accepted Answers:  
(Type: String) 5  
(Type: String) 4

**2.5 points**

4) Consider the following function f:

**2.5 points**

```
def mys(m):
    if m == 1:
        return(1)
    else:
        return(m+mys(m-1))
```

**Week 6 Quiz**  
( )

**Week 7:  
Classes,  
objects and  
user defined  
datatypes** ( )

**Week 7 Quiz**  
( )

**Week 8:  
Dynamic  
programming,  
wrap-up** ( )

**Week 8  
Programming  
Assignment**  
( )

**Text  
Transcripts** ( )

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**Online  
Programming  
Test -  
Sample** ( )

**Online  
Programming  
Test 1, 01  
Dec 2020,  
10:00-12:00**  
( )

**Online  
Programming  
Test 2, 01  
Dec 2020,  
20:00-22:00**  
( )

**Online  
Programming  
Test 1, 09**

Which of the following is correct?

- ☐ The function always terminates with  $\text{mys}(n) = \text{factorial of } n$
- ☐ The function always terminates with  $\text{mys}(n) = 1+2+\dots+n$
- ☐ The function terminates for positive  $n$  with  $\text{mys}(n) = \text{factorial of } n$
- ☐ The function terminates for positive  $n$  with  $\text{mys}(n) = 1+2+\dots+n$

No, the answer is incorrect.

Score: 0

Feedback:

*The function recursively computes  $1+2+\dots+m$  provided  $m \geq 1$ . If  $m \leq 0$ , the recursive calls do not terminate.*

Accepted Answers:

*The function terminates for positive  $n$  with  $\text{mys}(n) = 1+2+\dots+n$*

**Mar 2021,  
10:00-12:00  
()**

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**Online  
Programming  
Test 2, 09  
Mar 2021,  
20:00-22:00  
()**