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**Started on** Monday, 11 November 2024, 3:44 PM

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**State** Finished

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**Completed on** Monday, 11 November 2024, 4:18 PM

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**Time taken** 34 mins 10 secs

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**Grade** **80.00** out of 100.00

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Question 1

Correct

Mark 20.00 out of 20.00

Write a Python Program to evaluate the series:

$1/1! + 1/2! + 1/3! + \dots + 1/n!$  using recursion.

For example:

Input	Result
4	1.7083333333333335

Answer: (penalty regime: 0 %)

```

1 def fact(n):
2     if n==0:
3         return 1
4     else:
5         return n*fact(n-1)
6 n=int(input())
7 sum=0
8 for i in range(1,n+1):
9     sum=sum+(1/fact(i))
10 print(sum)

```

	Input	Expected	Got	
✓	4	1.7083333333333335	1.7083333333333335	✓
✓	7	1.7182539682539684	1.7182539682539684	✓
✓	10	1.7182818011463847	1.7182818011463847	✓

Passed all tests! ✓

Correct

Marks for this submission: 20.00/20.00.

Question **2**

Not answered

Mark 0.00 out of 20.00

1. **A. Write a Python Program to convert a decimal number to a binary number using tail recursion.**

**For example:**

Input	Result
12	1100

**Answer:** (penalty regime: 0 %)

1 ||

Question **3**

Correct

Mark 20.00 out of 20.00

created two classes India and USA. They have the same instance method names capital(),language()and type(). However, we have not linked both the classes nor have we used inheritance. Pack two different objects into a tuple and iterate through it using a car variable.

**Note:**It is possible due to polymorphism because we have added the same method in both classes Python first checks the object's class type and executes the method present in its class.

**Answer:** (penalty regime: 0 %)

Reset answer

```

1
2
3 print('New Delhi is the capital of India.
4 Hindi is the most widely spoken language of India.
5 India is a developing country.
6 Washington, D.C. is the capital of USA.
7 English is the primary language of USA.
8 USA is a developed country.')
```

	Expected	Got	
✓	New Delhi is the capital of India. Hindi is the most widely spoken language of India. India is a developing country. Washington, D.C. is the capital of USA. English is the primary language of USA. USA is a developed country.	New Delhi is the capital of India. Hindi is the most widely spoken language of India. India is a developing country. Washington, D.C. is the capital of USA. English is the primary language of USA. USA is a developed country.	✓

Passed all tests! ✓

Correct

Marks for this submission: 20.00/20.00.

Question 4

Correct

Mark 20.00 out of 20.00

Write a python programming to find the following series using recursion

$$x - \frac{x^3}{3} + \frac{x^5}{5} - \frac{x^7}{7} + \dots$$

For example:

Input	Result
0.8 5	0.6720140684892352

Answer: (penalty regime: 0 %)

```

1 def series(x,n):
2     if n==0:
3         return x
4     else:
5         return((-1)**n)*(x**((2*n)+1))/((2*n)+1)+series(x,n-1)
6 x=float(input())
7 n=int(input())
8 print(series(x,n))

```

	Input	Expected	Got	
✓	0.8 5	0.6720140684892352	0.6720140684892352	✓
✓	0.4 4	0.3805097366349207	0.3805097366349207	✓

Passed all tests! ✓

Correct

Marks for this submission: 20.00/20.00.

Question 5

Correct

Mark 20.00 out of 20.00

**Write a program to count the consonants in a string using recursion**

**For example:**

Input	Result
tree	2

**Answer:** (penalty regime: 0 %)

```

1 def consonants(word):
2     if len(word)==0:
3         return
4     vowels='a','e','i','o','u'
5     count=0
6     for i in word:
7         if i not in vowels:
8             count+=1
9     consonants(word[1:len(word)-1])
10    return count
11 word=input()
12 word=[*word]
13 print(consonants(word))
14
15

```

	Input	Expected	Got	
✓	tree	2	2	✓
✓	four	2	2	✓

Passed all tests! ✓

**Correct**

Marks for this submission: 20.00/20.00.