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Class: First ISE

Title: The question of the chepter 4

The Questions

1. A local variable in python is a variable that is ?

The correct answer: c. Accessible from within the function

2.Which of the following statements are the advantages of using function ?

The correct answer: d. All of these

3.the keyword that is used to define the block of statements in function ?

The correct answer: c. def

4.The characteristcs of docstring are ?

The correct answer:d. All of these

5. the two types of functions used in python are ?

The correct answer: a. built_in and user_defined

6._____ refers to built_in mathematical function ?

The correct answer: a. sqrt

7.The variable defined outside the function is referred as ?

The correct answer: b. global

8.Functions without a return statements do return a value and it is ?

The correct answer: c. None

9. The date type of the elements in sys.argv ?

The correct answer: d, string

10.The length of sys.argv is ?

The correct answer: b. total number of arguments including the filename

11. The syntax of keywords arguments specified in the function header?

The correct answer: c. **followed by an identifier

12.The number of arguments that can be speed to a function is ?

The correct answer: c. 0 or more

13.The Library that is used to create , manipulate,format and convert dates ,times and timestamps in Python is ?

The correct answer: a. Arrow

14.The command line arguments is stored in ?

The correct answer: b. sys.argv

15. The command that is used to install a third-party module in python is ?

The correct answer: a.pip

16. Judge the output of the following code ?

```
Import math
Math.sqrt(36)
```

The correct answer: d. 6.0

17.the function divmod(10,20) is evaluated as ?

The correct answer: b. (10//20,10%20)

18. predict the output of the following code ?

```
Def tweet():
```

Print(“Python programming”) tweet()

The correct one : a. python programming

19.The output of the following code ?

```
Def displaymessages(message,=times = 1):
 Print(“message*time”)
Displaymessage(“date”)
Displaymessage(“scince”,5)
```

The correct answer: a. date science science science science science

20.Guse the output of the following code ?

```
Def quad(x):
        Return*x*x*x*x
X=quad(3)
Print(x)
```

The correct answer: d. 81

21.The output of the following code is ?

```
Def add(*args):
X=0
For I in args:
X+=i
Return x
Print(add(1,2,3))
Print(add(1,2,3,4,5))
```

The correct answer: b. 615

22. Gauge the output of the following code ?

```
Def foo():
        Return total + 1
Print(foo())
```

The correct answer: a . 1

23.The default arguments specified in the function header is an ?

The correct answer: a. Identefier followed by an = and the default value

Review Questions.

1.Define function.what are the advantages of using a function ?

Answer. Functions are one of the fundamental building blocks in python language.

The advantages, one. Function used to multiple when we have a blocks of satatements,

And also the second you can use function that perform that action.

2. Differentiate between user-defined function and built-in functions ?

Answer . built_in functions are those functions that are save as befor in the python language and they are avaible always, But the user defined function are those the functions that we define it and we built these functions and they are not into python programming language.

3.Explain with syntax how to create a user-defined functions and how to call the user-defined function from the main function ?

Answer . first the syntax **def function_name(parameters):**

Function_name(arguments)

if__name__==”__name__”:

these **name** and **main** is the entry point to your program. When python interpreter reads the the if statement and sees that it will be excute the block of statements present there.E

4.Explain the built-in functions with examples in python ?

Answer . Are the functions that python interpreter has into it . and always are those available .

Ex . abs(),min(), max(),dvmod(),pow(),,,,,,,,,

5.Defferentiate between local and global variables with suitable examples ?

Answer . python have two scope. A variable is a global variable if its value is accessible and modifiable through out from our program.

And A variable is a local variable that is just perform in a function . the local variable `s life time is not always it mean that it can destroyed every time.

Example. X=10 # Global scope

```
        Def my_function():
Y=5     # local scope
        Print("Inside function – x:" ,x)
        Print(Inside function – y:",y)
        My_function()
        Print("Outside function – x:",x)
        Print("Outside function – y:",y)
        Cause an error (y is not define here)
```

6. Explain the advantages of *args.and ** kwargs with examples ?

Answer . args and kwargd are used as parameters in function definition,

Allows to us pass a variable number of arguments to calling function.

Example.

```
Def cheese_shop(kind,*args,**kwargs):
    Print(f"do you have any{kind}?")
    Print(F"I'm sorry , we are all out of {kind}")
    For arg in args:
    Print(arg)
    Print("-"*40)
    For kw in kwargs:
        Print(kw,":",kwargs[kw])
Def main():
Cheese_shop("LImburage", "It's very runny ,sir .,
"It's really very , VERY runny ,sir .,
Shop_-keeper='Micheal Plain",
Client="Jhon Cleass",
Sketch="Cheese Shop Sketch")
If__name__=="__main__":
```

Main():

7.Demonstrate how functions return multiple values with examples in python ?

Answer. Returning as tuple .This is one of python's powerful features.

Example .

```
Def calculate(a,b):
    Sum_ = a+b
    Diff = a-b
    Product = a*n
    Return  sum_ , diff, product   #tuple of three values
Call the function
Result = calculate(10,5)
Print(result)
# Output:
(15,5,50)
Print(result[10])
Output (15)
```

8.Explain the utility of docstrings ?

Answer .

A docstring = document string : is a string in placed inside of functions and classes or modules to describe what they do it's used mostly in documentation mainly and code readability.

Utility of dostring :. Clear code understanding,Built_in Help system,Documentation Tools and etc

9.Write a program using functions to perform the arithmetic operations ?

Answer.

```
Def add(a,b):
                    Return a+b
Def subsract(a,b):
                    Return a – b
```

Def multiple(a,b):

Return a*b

Def divide(a,b)

If b !=0:

Return a/b

Else:

Return "Error division by the zero".

10. Write a program to find the largest of three numbers using functions ?

Answer. Import math

Print(math.max(2,3,4):

11.Write a python program using functions to find the value of npr and ncr ?

Answer .

Import math

Def nPr(a,b):

Return

Math.factorial(n) //

Math .factorial(a-b)

Def nCr(a,b):

Return

Math.factorial(n) //

Math.factorial(b)*

Math.factorial(a-b))

12.Write a python functions named area that finds the area of a pentagon ?

Answer .

Import math

Def area_pentagon(s):

```
                                        Area = (5*s**2) / (4* math.tan(math.pi /5))
                                        Return area
```

13.Write a program using functions to display Pascals`s trigonal ?

Answer .

```
Def factorial (n):
                                        If n == 0 or n==1:
                                        Return 1
                                        Return n*
                                        Factorial(n-1)
Def nCr(n,r):
                                        Return
Factorial(n) //
(factorial (r) *
Factorial(n-r))
Def print_pascal's trigonal(rows):
For I in range (rows):
                                        # print leading spaces
                                        Print(" " *(rows-i) ,  end = "")
For j in range (i+1):
Print(nCr(I,j) , end = "")
                                        # print()       Newline
```

14.Write a program using functions to print harmonic progression series and its sum till N terms ?

Answer .

```
Def print_harmonic_progression(n):
Sum_hp = 0.0
Print("Harmonic Progression :")
```

For I in range (1,n+1):

Terms = 1/i

Print(f"1{i}", end = " ")

Sum_hp += term

Print(f"\nsum of HP up to {n} terms :

{round(sum_hp,4)}")

15.Write a program using functions to do the following tasks :

a. Convert milliseconds to hours , minutes and seconds .

answer .

def convert_milliseconds (ms):

seconds = ms // 1000

minutes = seconds // 60

hours = minutes // 60

seconds = seconds % 60

minutes =minutes %60

return hours , minutes , seconds

b. Compute a sales commissions ,given the sales amount and the commissions rate ?

answer .

sales =

float(input("Enter sales amount:"))

rate =

float(input("Enter commission rate (%):"))

commission = calculate_commision(sales,rate)

print(f"Sales commission = commission:.2f"")

c. convert Celsius to Fahrenheit.

Answer.
Def Celsius_to_Fahrenheit(Celsius):
Return (Celsius *9/5) + 52
C= float(input("Enter tempreture in Celsius:"))

F = Celsius_to_Fahrenheit (c)
Print(f"{c} C = {f:.2f} F")

d. Compute the monthly payment ,given the loan amount numbers of years and the annual interest rate.

Answer .

Def calculate_monthly_payment(principal,years,annual_rate):

Months = years *12

Monthly_rate =

Annual_rate / 12/100

If monthly_rate ==0:

Return

Principal / months #

NO interest case

Payment = principal *monthly_rate *(1+monthly_rate)*months / +1))

Monthly_rate)months -1)

Return payment