Unit 4 · Programming in Python

WORKSHEET

Full marks 34

Name _____ Class _____ Roll no. ____ Date _____ Marks _____ / 34

1 Key words [4]

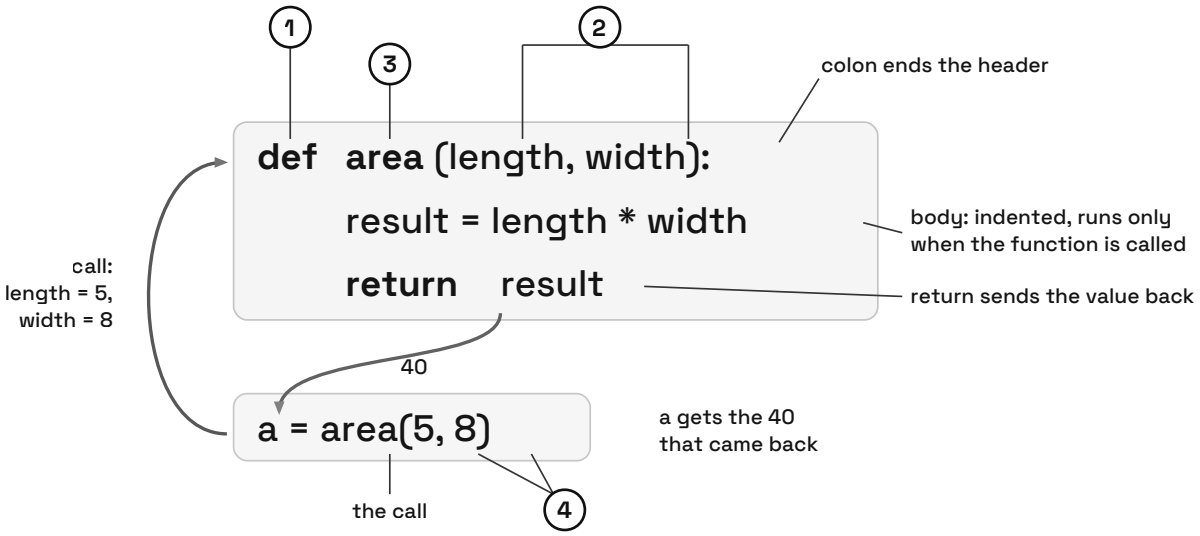
Fill in the blanks with words from the box. Two words in the box are not needed. Each blank carries 0.5 mark.

arguments	def	exception	finally	global	local	module	parameters	pip	return

A function is defined with the keyword _____. The names written in the brackets of its header are its _____, and the values sent to it when it is called are its _____. The _____ statement sends a value back to the line that called the function. A variable made inside a function is _____: it can be used only inside that function. A file of Python code, such as `math` or `random`, that a program can import is a _____. An error that happens while a program is running, such as dividing by zero, is an _____. In error handling, the _____ block runs every time, whether an error happened or not.

2 Label the diagram [2]

The diagram shows the parts of a function and its call. Write the name of the part in place of 1 to 4. Each carries 0.5 mark.



1. _____ 2. _____

3. _____ 4. _____

3 Multiple choice [5]

Choose the correct option for each of the following questions.

i. What type of argument lets you call a function by naming the parameters? [1]

a. positional arguments **b.** default arguments
c. keyword arguments **d.** required arguments

ii. A function that performs an action but does not return a value is called a: [1]

a. non-void function **b.** void function
c. recursive function **d.** anonymous function

iii. A program runs without any error message, but prints that the average of 8 and 6 is 11. What kind of error is this? [1]

a. syntax error **b.** runtime error
c. logical error **d.** exception

iv. When writing a DataFrame to a CSV file with `to_csv()`, what does `index=False` do? [1]

a. It includes the index as a column in the CSV file.
b. It removes the header row from the CSV file.
c. It leaves the index column out of the CSV file.
d. It sorts the data by the index.

v. A file `marks.txt` holds a whole class's marks. A program runs `f = open("marks.txt", "w")`. What happens to the marks already in the file? [1]

a. They are kept, and new writing goes at the end.
b. They are wiped as soon as the file is opened.
c. They are wiped only when `write()` is called.
d. Python raises an error because the file exists.

4 What does it print? [5]

Write exactly what each program prints, in the box under it.

a. [2]

```
1  def fee(months, rate=1500):
2      return months * rate
3
4  print(fee(3))
5  print(fee(2, 2000))
6  print(fee(rate=1000, months=4) + fee(1))
```

OUTPUT

b. [3]

```
for v in ["20", "0", "five"]:
    try:
        n = int(v)
        print(100 // n)
    except ValueError:
        print("not a number")
    except ZeroDivisionError:
        print("zero")
    finally:
        print("next")
```

OUTPUT

5 Short answers [2]

Write short answers to the following questions.

Write any two differences between a local variable and a global variable.

6 Think [2]

Think, then answer.

A program asks “How many students?” and divides the total fee collected by the number typed. Name two different things a user could type that would stop it with an error, give the error for each, and say how to keep the program running.

7 Activity: Try, except, else, finally (not marked)

On the unit’s page (the QR code), step through **Try, except, else, finally** for each input.

The user types	The lines that run, in order	What is printed
4		
0		
abc		

8 Trace the program [4]

Fill in the trace table: one row for each time round the loop, then what the program prints. The first row shows the values before the loop.

```
1  def reverse(n):
2      rev = 0
3      while n > 0:
4          d = n % 10
5          rev = rev * 10 + d
6          n = n // 10
7      return rev
8
9  print(reverse(472))
```

n (at the start of the round)	d	rev	Output
(before) 472		0	

9 Find and fix the bug [3]

Read the program, then answer.

This program should print the average of 8 and 6 and then double it, but it stops with an error.

```
1  def average(a, b):
2      avg = (a + b) / 2
3      print(avg)
4
5  result = average(8, 6)
6  print("Double:", result * 2)
```

i. Which line stops the program, and with which error?

ii. Why does it happen?

iii. Write the corrected line.

10 Pandas [3]

Read the file and the program, then answer.

MARKS.CSV

```
Name,Class,Marks
Sita,10,72
Hari,10,55
Gita,9,81
Ram,9,48
```

```
1  import pandas as pd
2
3  df = pd.read_csv("marks.csv")
4  passed = df[df["Marks"] >= 60]
5  print(passed)
6  print(len(df), df["Marks"].max())
```

Write what the program prints.

OUTPUT

11 Write a program [4]

Write a program for the following.

Write a Python program with a function `area_rectangle(length, breadth)` that returns the area of a rectangle. The program asks the user for the length and breadth, calls the function and prints the area. If the user types something that isn't a number, it prints "Please type a number." instead of stopping with an error.