Grade 8 Computing

Unit 1 · From Blocks to Python

WORKSHEET

Full marks 33

Name _____ Class _____ Roll no. ____ Date _____ Marks _____ / 33

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.

Boolean	**comment**	**f-string**	**float**	**integer division**	**keyword**	**Python interpreter**
remainder	**string**	**text-based language**				

Python is a _____: its programs are typed, not built from blocks. A _____ reads a program and carries out its lines one at a time, from the top. A line that starts with # is a _____, which Python skips. 12 is an int, but `12.0` is a _____ and `"12"` is a _____. `17 // 5` is _____ and gives 3, and `17 % 5` gives the _____, 2. An _____, such as `f"Rs {bill}"`, puts values into text.

2 Multiple choice [5]

Choose the correct option for each of the following questions.

i. What does `print("10" + "5")` show? [1]

a. 15 **b.** 105
c. 10 5 **d.** an error

ii. What is `23 % 4`? [1]

a. 5 **b.** 5.75
c. 3 **d.** 92

iii. A program stops with `ValueError: invalid literal for int() with base 10: '12.5'`. What happened? [1]

a. The program has a spelling mistake.
b. `int()` was given text that isn't a whole number.
c. A number was joined to a string.
d. A variable was used before it was set.

iv. What type is the value of `7 / 7`? [1]

a. `int` **b.** `float`
c. `str` **d.** `bool`

v. Which of these can be a variable's name in Python? [1]

a. `total marks` **b.** `2nd_place`
c. `marks_2` **d.** `if`

3 What does it print? [6]

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

a. [3]

```
1  a = 5
2  b = 2
3  a = a + b
4  b = a * b
5  print(a, b)
6  print(a // b, a % b)
7  print(f"{a} and {b}")
```

OUTPUT

b. [3]

```
1  x = "4"
2  y = 4
3  print(x * 3, y * 3)
4  print(x == y, int(x) == y)
5  print(y / 2, y // 3, y % 3)
```

OUTPUT

4 Trace the program [4]

Fill in the trace table: what each line puts into a variable, and what the program prints. The first row is done for you.

```
1  money = 500
2  price = 60
3  books = money // price
4  money = money - books * price
5  money = money + 20
6  print(f"{books} books, Rs {money} left")
```

Line	money	price	books	Output
1	500			
2				
3				
4				
5				
6				

5 Find and fix the bug [4]

Read the program, then answer.

This program should print a bill for cups of tea at Rs 30 a cup. Asha types her name, then **2**.

```
1  name = input("Your name? ")
2  cups = input("How many cups? ")
3  bill = cups * 30
4  print(name + ", please pay Rs " + bill)
```

i. What does it print as the bill?
ii. Which line has the mistake, and why?
iii. Write that line correctly.
iv. With only that line corrected, line 4 stops with an error. Name the error, and write line 4 correctly.

6 Write a program [4]

Write the program in Python on the lines. Any program that gives the right result gets the marks.

Rewrite this block program in Python. Then write what it prints when the user types **4**.

```
1  when ▶ Run is pressed
2  set price to 30
3  ask “How many plates of momo?” and keep the answer in plates
4  set bill to plates × price
5  change bill by 20
6  say join “Total with the delivery charge: Rs ” bill
```

7 Short answers [2]

Write short answers to the following questions.

What is the difference between = and == in Python? Give an example of each.

8 Name the error [2]

Each line in Column A stops with an error. Match it with the kind of error in Column B. One item in Column B is not needed. Each carries 0.5 mark.

Column A		Column B
1. `print("Namaste)`	☐	a. TypeError
2. `pirnt("Hi")`	☐	b. ValueError
3. `print("Rs " + 60)`	☐	c. SyntaxError
4. `print(int("two"))`	☐	d. IndentationError
		e. NameError

9 Think [2]

Think, then answer.

Grade 7's blocks turned an answer that looked like a number into a number by themselves. Python's `input()` always gives a string, and the programmer must convert it. Why is that a good choice? Give two reasons.

10 Activity: Fix five programs (not marked)

At a computer, on the unit's page (the QR code), type and run each program, mistakes and all. Copy the last line of Python's message, then fix it.

Program	Last line of the message	My fix
`print("Hello"`		
`Print("Hello")`		
`age = 13` then `print("I am " + age)`		
`marks = int("forty")`		
`print(true)`		