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MJC45CSC102(T)25

2nd Semester Exam., 2026 (May) (FYUP)

MAJOR-2 (COMPUTER SCIENCE)

[Python Programming]

Full Marks : 70

Pass Marks : 28

Time : 3 hours

*The figures in the margin indicate full marks
for the questions.*

All questions are compulsory

PART—A

Choose the correct answers and rewrite them :

1×10=10

1. Who is the creator of Python programming language?

(a) Dennis Ritchie

☒ (b) Guido van Rossum

(c) James Gosling

(d) Brendan Eich

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(Turn Over)

(2)

2. Which keyword skips current iteration and goes to next iteration of loop?

(a) break

☒ (b) continue

(c) pass

(d) skip

3. Which data structure does not allow duplicate values?

(a) List

(b) Tuple

☒ (c) Set

(d) Dictionary

4. Function without name is called

(a) hidden function

☒ (b) anonymous/lambda function

(c) void function

(d) empty function

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(Continued)

(3)

5. What is the output of the following code?

```
class A;
    x = 5
    obj = A()
print(obj.x)
```

(a) A

(b) obj

☒ (c) 5

(d) Error

6. Match data type, example and output of type() :

Column—I	Column—II	Column—III
A. int	1. "Python"	i. <class 'str'>
B. float	2. 25	ii. <class 'int'>
C. str	3. 3.5	iii. <class 'float'>
D. bool	4. True	iv. <class 'bool'>

Select the correct combination.

☒ (a)	A	B	C	D
	2	3	1	4
	ii	iii	i	iv
(b)	A	B	C	D
	3	2	4	1
	iii	ii	iv	i

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(4)

(c) A B C D
 1 4 2 3
 i iv ii iii

(d) A B C D
 2 3 1 4
 iii ii iv i

7. Consider the following statements about List, Tuple and Set :

1. List is mutable.
2. Tuple allows duplicate values.
3. Set maintains order of elements.
4. Tuple is immutable.
5. Set does not allow duplicates.

Select the correct option.

- (a) 1 and 3
- (b) 2 and 4
- ☒ (c) 1, 2, 4 and 5
- (d) 3 and 5

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(Continued)

(5)

8. Correct order after these operations on
lst = [1, 2] :

```
lst.append(3)
lst.insert(0, 0)
lst.pop()
```

Options :

- ☒ (a) [1, 2] → [1, 2, 3] → [0, 1, 2, 3] → [0, 1, 2]
- (b) [1, 2] → [0, 1, 2] → [0, 1, 2, 3] → [1, 2, 3]
- (c) [1, 2] → [1, 2, 3] → [1, 2, 3, 0] → [1, 2, 0]
- (d) [1, 2] → [0, 1, 2] → [0, 1, 2, 3] → [0, 1, 2]

9. Statement I :

def keyword is used to define a function in Python.

Statement II :

Lambda function in Python can have multiple statements.

Select the correct answer.

- (a) Both Statement I and Statement II are correct
- ☒ (b) Statement I is correct, but Statement II is incorrect
- (c) Statement I is incorrect, but Statement II is correct
- (d) Both Statement I and Statement II are incorrect

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(Turn Over)

(6)

10. Assertion (A) :

Object obj = Student() can access methods of Student class.

Reason (R) :

Object is instance of class and inherits all class properties.

Select the correct answer.

- (a) Both (A) and (R) are true, and (R) explains (A)
- (b) Both (A) and (R) are true, but (R) does not explain (A)
- (c) (A) is true, but (R) is false
- (d) (A) is false, but (R) is true

PART—B

Answer all the questions in approximately in 30–40 words each : $2 \times 5 = 10$

- 11. What is Python? Write the extension of Python file.
- 12. Write the syntax of if-elif-else statement.
- 13. Differentiate list and tuple on mutability.

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(Continued)

(7)

14. What is function? Give the syntax of function definition.

Or

What is the difference between import math and from math import sqrt?

15. Explain inheritance using father-son property example.

Or

Explain class and object using suitable example.

PART—C

Answer all the questions in around 80–100 words each : $5 \times 6 = 30$

- 16. List five features of Python.
- 17. Explain the types of loops in Python with syntax.
- 18. Write a Python program to take principal, rate, time from user and calculate simple interest.
- 19. Explain five components of a user-defined function.

Or

Write five uses of built-in modules math and random.

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(Turn Over)

(8)

20. State five characteristics of `*init*` constructor method.

Or

Explain the file modes in Python.

21. Read the passage carefully and write the answer to the questions from the passage :

Python is an interpreter, high-level programming language known for its easy and readable syntax. Unlike C or Java, Python does not require data type declaration. Variables are created when a value is assigned. Python supports dynamic typing, which means the same variable can hold an integer in one line and a string in the next. The `print()` function is used to display output, and `input()` is used to take user input. By default, `input()` returns data as string type.

Based on the above case, answer the following questions :

- (a) What are the two key features of Python? 2
- (b) State two differences between `print()` and `input()`. 2
- (c) What happens to data type if same variable is assigned int then str? 1

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(Continued)

(9)

PART—D

Answer all the questions within 180–200 words :

10×2=20

22. Describe for loop, `range()` function and its variations.

Or

Explain while loop, `break` and `continue` with flow control.

23. Compare local and global variable scope. What will be the output if global `x = 100` and function assigns `x = 200` without global? Justify.

Or

Justify when to use recursive function and loop for factorial. Analyze memory and speed trade-off.

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