

SAMPLE PAPERS
DIPLOMA THIRD SEMESTER EXAMINATION 2025 (JUT)
ADVANCED PYTHON PROGRAMMING
DIPLOMA WALLAH

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Full Marks: 70 | **Time:** 3 Hours

Instructions: * Answer **five** questions in total.

- **Question No. 1** is compulsory.
- Answer any **four** questions from the remaining (Q2 to Q7).
- All questions carry equal marks.

Q1. Choose the correct alternative: ($2 \times 7 = 14$ Marks)

(i) Which dictionary method returns a default value if the key is missing?

- (a) items()
- (b) keys()
- (c) get()
- (d) pop()

(ii) What is the output of `bool([])`?

- (a) True
- (b) False
- (c) Error
- (d) None

(iii) To list all files in the current directory, we use:

- (a) `os.list()`
- (b) `os.dir()`
- (c) `os.listdir()`
- (d) `os.files()`

(iv) A syntax error is detected by:

- (a) Interpreter
- (b) Compiler/Parser
- (c) Runtime Manager
- (d) Operating System

(v) Which mode opens a file for exclusive creation (fails if file exists)?

- (a) 'w'
- (b) 'x'
- (c) 'a'
- (d) 'c'

(vi) The pickle module handles:

- (a) JSON data
- (b) Object Serialization
- (c) Encryption
- (d) Compression

(vii) Which turtle function stops the screen from closing immediately?

- (a) turtle.stop()
- (b) turtle.done()
- (c) turtle.wait()
- (d) turtle.hold()

Q2. (Sets & Tuples)

(a) Compare Lists and Tuples. Why are Tuples used for dictionary keys but Lists are not? (7 Marks)

(b) Write a program to remove duplicate elements from a list while maintaining the original order.

- *Input:* [10, 20, 10, 30, 20] --->*Output:* [10, 20, 30] (7 Marks)

Q3. (Modules)

(a) Explain the usage of `from ... import *`. Why is this generally discouraged in production code? (7 Marks)

(b) Write a program to implement a Number Guessing Game using the random module. The computer picks a number (1-50), and the user loops until they guess it correctly. (7 Marks)

Q4. (Exception Handling)

(a) Explain the hierarchy of exceptions. What is the parent class of all exceptions? (7 Marks)

(b) Write a program that takes two numbers as input for division. Use a single try block to handle:

1. ZeroDivisionError
2. ValueError (non-numeric input)
3. Generic Exception (unexpected errors) (7 Marks)

Q5. (File Handling)

(a) What are file offsets? Explain `seek()` and `tell()` methods with examples. (7 Marks)

(b) Write a program to count the total occurrence of the word "Python" (case-insensitive) in a text file notes.txt. (7 Marks)

Q6. (Turtle Graphics)

(a) Explain how to fill color in shapes using `begin_fill()` and `end_fill()`. (7 Marks)

(b) Write a Turtle program to draw a Pattern of Concentric Circles (circles with the same center but increasing radii) using a loop. (7 Marks)

Q7. Write short notes on any four: ($3.5 \times 4 = 14$ Marks)

(a) `set.intersection()`

(b) `pip install` vs `pip uninstall`

(c) `assert` statement

(d) Absolute vs Relative Path

(e) `turtle.stamp()`

