SAMPLE PAPERS

DIPLOMA THIRD SEMESTER EXAMINATION 2025 (JUT)

ADVANCED PYTHON PROGRAMMING

DIPLOMA WALLAH

CLICK HERE TO VISIT DIPLOMA WALLAH WEBSITE

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.

Section A (Compulsory)

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

(i) Which of the following is not a core data type?

(a) List

 (b) Dictionary

(c) Tuple

 (d) Class

(ii) The sys.argv[0] is always:

(a) The first argument

 (b) The script name

 (c) The Python path

(d) None

(iii) Which function forces writing of buffered data to a file?

(a) save()

 (b) dump()

(c) flush()

 (d) push()

(iv) json.dump() is similar to pickle.dump() but produces:

(a) Binary data

 (b) Human-readable text

 (c) Encrypted data

(d) Compressed data

(v) When an exception is raised, the normal flow of the program:

(a) Continues

(b) Is disrupted/Stopped

(c) Restarts

 (d) Pauses

(vi) The shape "turtle" in Turtle graphics can be set using:

(a) turtle.shape("turtle")

 (b) turtle.icon("turtle")

(c) turtle.set("turtle")

(d) turtle.view("turtle")

(vii) A set is:

(a) Ordered

 (b) Unordered

 (c) Indexed

 (d) Sequential

Q2. (Dictionary & Strings)

(a) Explain the zip() function. How can it be used to create a dictionary from two lists? (7 Marks)

(b) Write a program to combine two dictionaries. If they have the same key, add their values.

- *Dict A:* {'a': 100, 'b': 200}

- *Dict B:* {'b': 50, 'c': 300}

- *Result:* {'a': 100, 'b': 250, 'c': 300}   (7 Marks)

Q3. (Modules)

(a) Explain the dir() and help() functions with respect to modules. (7 Marks)

(b) Create a user-defined module calculator.py with functions add, sub, mul, div. Write a main script to import this and use these functions based on user choice. (7 Marks)

Q4. (Exception Handling)

(a) What are User-Defined Exceptions? Write the syntax to create a custom exception class. (7 Marks)

(b) Write a program to validate a Password. Raise a WeakPasswordError if the password is shorter than 8 characters or does not contain a digit. (7 Marks)

Q5. (File Handling)

(a) Explain Binary File Handling using pickle. Comparison between dump() and load(). (7 Marks)

(b) Write a program to copy the content of source.txt to destination.txt, but convert all text to UPPERCASE during the copy process. (7 Marks)

Q6. (Turtle Graphics)

(a) Explain the usage of turtle.circle(radius, steps=N). How does the steps argument change the shape? (7 Marks)

(b) Write a Turtle program to draw an Olympic Symbol (5 interlocking rings) using the circle() function and penup/pendown. (7 Marks)

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

(a) str.split() vs str.join()

(b) if __name__ == "__main__":

(c) try...except...else

(d) os.path.exists()

(e) turtle.bgcolor()