

*Time Allowed: 2.5 Hours*

Answer to Question No. 1 of Group A must be written in the main answer script. In Question No. 1, out of 2 marks for each MCQ, 1 marks is allotted for right answer and 1 marks is allotted for correct explanation of the answer.

#### GROUP-A

xiv) Django is based on which design pattern?

- a) MVC                                      b) OOP                                      c) POP                                      d) AI

xv) What is the purpose of Django templates?

- a) Database management                                      b) URL handling  
c) Rendering HTML pages dynamically                                      d) Creating models

**GROUP-B**

**Answer any Five (05) questions.**

2. a) Discuss the various built-in data types provided by the Python programming language. [5+3]  
b) Why is Indentation Important in Python?
3. a) How do you represent a string in Python? [3+5]  
b) Write a Python program to check whether a given string is a palindrome or not.
4. a) Differentiate between lists, tuples, and dictionaries with examples. [5+3]  
b) Explain the difference between list slicing and list indexing.
5. a) What is a loop, and why is it essential in programming? [4+4]  
b) Explain the use of break and continue statements with examples.
6. a) Describe logical and identity operators in Python with suitable examples. [2+6]  
b) Write the output of the following code snippet.
- ```
a, b = 5, 3
print(a & b)
print(a | b)
print(a ^ b)
print(~a)
print(a << 4)
print(a >> 1)
```
7. a) What is the difference between a user-defined function and a built-in function? [3+5]  
b) What is a lambda function? Why is it used?
8. a) What is the purpose of Python packages? [2+6]  
b) Differentiate between modules and packages with a suitable example.
9. a) Explain the different file read and write functions with examples. [4+4]  
b) What is a lambda function? Why is it used?
10. a) Explain the working of regular expressions in Python with examples. [4+4]  
b) Explain Django MVC/MTV architecture.