

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2025

B.Tech-VI Semester (IT)

COURSE CODE (CREDITS): 18B11CI315 (3)

MAX. MARKS: 15

COURSE NAME: PYTHON PROGRAMMING WITH RASPBERRY PI

COURSE INSTRUCTORS: Dr. Vikas Baghel

MAX. TIME: 1 Hour

**Note:** (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

| Q.No | Question  | CO  | Marks |
|------|---|-----|-------|
| Q1   | Explain the role of I <sup>2</sup> C pins on Raspberry Pi. How do they enable communication with multiple sensors?  | CO1 | [3]   |
| Q2   | Compare and contrast the advantages and limitations of using a Raspberry Pi in IoT applications compared to other microcontrollers. Identify examples where each would be more suitable.  | CO1 | [3]   |
| Q3   | a) Describe the concept of lambda functions in Python. Illustrate with examples how they can be used for quick data transformation tasks.<br>b) Examine the role of Python's <code>__init__.py</code> file in a package. Construct a small Python package with three modules and demonstrate its usage. | CO2 | [3]   |
| Q4   | Write a Python function that accepts a list of numbers and returns a new list containing only the even numbers using a list comprehension.  | CO2 | [3]   |
| Q5   | Develop a Python script that logs temperature and humidity data from a DHT11 sensor connected to a Raspberry Pi. The script should store the readings in a CSV file for further analysis.   | CO2 | [3]   |