

Code No: 156FQ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year II Semester Examinations, August/September - 2024****PROGRAMMING LANGUAGES FOR IOT****(Computer Science and Engineering - IOT)****Time: 3 Hours****Max. Marks: 75**

- Note:** i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A**(25 Marks)**

- 1.a) What are the primary features of the Raspberry Pi B+ board? [2]
- b) Explain the keyword arguments in Python function with an example. [3]
- c) What are some key features of MicroPython? [2]
- d) What does the Python console allow you to do interactively? [3]
- e) List the primary types of cloud storage models. [2]
- f) What is the primary purpose of a web application framework in Python? [3]
- g) List the two primary methods for connecting a Raspberry Pi to a network. [2]
- h) Which file system format is commonly used for SD cards in Raspberry Pi? [3]
- i) What are the key configuration settings to be aware of when setting up Net Beans for Java development? [2]
- j) What is a Bill of Materials (BOM) in the context of a Java project? [3]

PART – B**(50 Marks)**

- 2.a) Discuss why it is important to choose the correct operating system for your Raspberry Pi model?
- b) How would you use string methods to format a user's name and display it in a specific format? [5+5]

OR

3. Explain how the pop() method differs from the remove() method in Python lists. [10]

- 4.a) Discuss how using the Python interpreter directly can be useful for executing scripts on the Raspberry Pi?
- b) What components are typically included in a basic electronics kit? [5+5]

OR

- 5.a) Discuss how starting with MicroPython can benefit embedded systems development compared to traditional C/C++ programming?
- b) Describe a session using the REPL console where you define a variable, perform a calculation, and print the result. [5+5]

- 6.a) Discuss the differences between object storage and block storage in cloud computing.
b) Explain the python web application framework- Django. [5+5]

OR

- 7.a) Describe a use case where using a cloud service for IoT would provide significant advantages over traditional server solutions.
b) Explain how Python web frameworks handle routing and request processing. [5+5]

- 8.a) Explain why it is important to properly format an SD card before installing an operating system for the Raspberry Pi?
b) What does NOOBS stand for, and what is its role in installing Raspbian on a Raspberry Pi? [5+5]

OR

- 9.a) Explain the steps to physically connect a Raspberry Pi to a monitor, keyboard, and mouse.
b) Discuss the benefits of using a wired Ethernet connection versus a wireless network for the Raspberry Pi. [5+5]

- 10.a) What is the purpose of the HelloRaspberryPi project in a Java development context?
b) What does the term “Brewing Java” refer to in the context of a Java project? [5+5]

OR

- 11.a) Discuss the challenges of integrating a USB scale with a Java application.
b) What is the purpose of a Coffee Calculator in a Java application? [5+5]

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