

Code No: 156FQ

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B. Tech III Year II Semester Examinations, July - 2023****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) Write in brief about List in python. [2]
- b) How is string represented in python? [3]
- c) What are the steps to install an operating system on a Raspberry Pi? [2]
- d) Differentiate between configuration and state data. [3]
- e) What is an API? Explain the concept of mashing and scrapping APIs. [2]
- f) List and explain the standards to consider for implementing the API. [3]
- g) What is the operating system used by Raspberry Pi? [2]
- h) What is the purpose of the Raspberry Pi official Power over Ethernet (PoE) hat? [3]
- i) Name some applications of Raspberry Pi. [2]
- j) Which Debian's tool is used for partition resizing? [3]

PART – B**(50 Marks)**

- 2.a) Describe various features of a Raspberry Pi device.
 - b) With the help of neat diagram, explain the basic building blocks of IoT device. [5+5]
- OR**
3. Explain about:
 - a) Control flow
 - b) Packages
 - c) File handling of IoT. [10]
 4. Explain working with schematics to wire digital outputs. [10]
- OR**
5. Explain isolating the pin numbers to improve wirings. [10]
 - 6.a) Explain how cloud computing is playing key role in IoT.
 - b) Design a weather monitoring IoT system using Restful web API. [5+5]
- OR**
- 7.a) Design a smart home automation system using IoT with REST service mode.
 - b) Explain the IoT communication APIs and its importance. [5+5]

8. Explain Connecting Raspberry pi with SSH in detail. [10]

OR

9. Elucidate how to create a simple Raspberry pi application. [10]

10.a) Discuss the Infrastructures and Buildings development of an IOT.

b) Predict the output for the following,

i) `f1= "10" f2= "20" print(f1+f2)`

ii) `7//3`

iii) `3*2**3`

iv) `min("Welcome to HKBK")`

v) `3**3`

vi) `2**3+2**3`

[4+6]

OR

11. Explain how the IoT technology is impacting the healthcare sector and changing our everyday lifestyle with the following examples:

a) Health and Fitness monitoring

b) Wearable electronics.

[5+5]

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