

Code No: 158EX

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**B.Tech IV Year II Semester Examinations, June - 2024****INTERNET OF THINGS****(Computer Science and Engineering (Networks))****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 applications of IoT? [2]
- b) Explain what is cloud computing? [3]
- c) Explain simple network management protocol. [2]
- d) What is NETCONF protocol? [3]
- e) Explain about URLLib package in python. [2]
- f) What is a module in python? Give example. [3]
- g) List IoT physical devices. [2]
- h) How to interface an ultrasonic sensor with raspberry pi? [3]
- i) What is Xively cloud service? Explain. [2]
- j) Explain the key principles of RESTful in the context of designing a web API. [3]

PART – B**(50 Marks)**

- 2.a) Describe the characteristics of IoT.
- b) With the help of neat diagrams, describe the levels of IoT with an example each. [5+5]

OR

- 3.a) Explain in detail about IoT enabled technologies.
- b) Discuss the implementation of IoT technology in following areas:
i) Home ii) Energy iii) Agriculture. [5+5]

- 4.a) Explain the different protocol layers present in Network configuration protocol.
- b) Describe the need of systems management in IoT. [5+5]

OR

- 5.a) List the steps of IoT device management with NETCONF-YANG.
- b) Describe how NFV can be used for virtualizing IoT device. [5+5]

6. Explain the following data types of python with examples:
a) Numbers b) Strings c) Lists d) Tuples. [2+2+3+3]

OR

- 7.a) Explain about the classes in python with some examples.
b) What is the difference between a module and a package in python? Give examples.[5+5]
- 8.a) Mention the key differences between serial, SPI, and I2C interfaces in terms of their Characteristics and applications.
b) Design an automatic refrigerator light system with LED, switch and raspberry pi and write a python program to support the working of that design. [5+5]
- OR**
- 9.a) List and explain about the application areas of Raspberry Pi.
b) Explain about different GPIO pins used in Raspberry Pi. [5+5]
- 10.a) List various cloud services for IoT and explain.
b) Differentiate between object storage, block storage and file storage in IoT applications. [5+5]
- OR**
- 11.a) Illustrate RESTful architecture with a neat sketch and explain.
b) Explain Python web application framework in detail. [5+5]

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