

Code No: 156BJ**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD****B. Tech III Year II Semester Examinations, August/September - 2024****INTERNET OF THINGS****(Common to AI&DS, AI&ML)****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 link layer protocols which are relevant in the context of IoT? [2]
- b) How does Intrusion detection is performed through IoT devices? [3]
- c) What are the advantages of Network Function Virtualization? [2]
- d) How do data collection and analysis approaches differ in M2M and IoT? [3]
- e) How do you declare class in Python? [2]
- f) What are the uses of module? Give an example. [3]
- g) How does data transfer occur in Raspberry Pi? Define them. [2]
- h) How does Raspberry Pi different from a desktop computer? [3]
- i) What is AutoBahn? How IoT and AutoBahn are related? [2]
- j) Differentiate Xively data stream and a channel. [3]

PART – B**(50 Marks)**

- 2.a) Explain the functional blocks of an IoT device and communication models used in IoT.
 - b) List the IoT levels of deployment templates. Compare them. [5+5]
- OR**
- 3.a) Discuss any two IoT application in cities domain.
 - b) Describe the role of IoT in agriculture domain. [5+5]
- 4.a) In detail, describe the SDN architecture and layers.
 - b) Justify the need for IoT system management. [5+5]
- OR**
- 5.a) Give the role of YANG and Trans API modules in device management.
 - b) What is SNMP? How to manage a device with SNMP? Give its limitations. [5+5]
- 6.a) What type of language is Python? List its features.
 - b) What operations are provided by Python related to date/time? Give examples. [5+5]
- OR**
- 7.a) Implement a sample Python program using JSON library package.
 - b) Write a Python program to handle exceptions. [5+5]

- 8.a) What are the components of Raspberry Pi? Give their functionality.
b) Implement Python code for controlling LED with a switch. [5+5]

OR

- 9.a) Implement Python program for sending email on switch press.
b) Implement Python program for blinking LED. [5+5]

- 10.a) Explain the detailed steps of WAMP protocol.
b) Describe the architecture of a Django application. [5+5]

OR

- 11.a) Write Python program for Django URL patterns.
b) Implement Python program for sending data to Xively cloud. [5+5]

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