

R18

Code No: 156DR

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, July - 2023

FUNDAMENTALS OF INTERNET OF THINGS

(Common to CSE, IT, CSBS, CESE, CSE(CS), CSE(AI&ML), CSE(DS), CSE(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 is physical design in IoT? [2]
- b) What are the characteristics of IoT? [3]
- c) Define M2M. [2]
- d) Define Actuator. [3]
- e) How Raspberry Pi can be interfaced with various peripheral devices? [2]
- f) How can Raspberry Pi be used in IoT? [3]
- g) Define SDN. [2]
- h) How to implement IoT application? [3]
- i) Define Cloud Computing. [2]
- j) Define Sensor-Cloud. [3]

PART - B

(50 Marks)

- 2.a) Enlighten different IoT Protocols.
- b) What are the main challenges of an Internet of Things (IoT)? [5+5]

OR

- 3.a) What is the function of communication block in IoT?
- b) Why are communication protocols important in IoT? [5+5]

- 4.a) What are some good resources to learn about Machine-to-Machine communication (M2M)?
- b) How does M2M communication work? Explain. [5+5]

OR

5. Explain Integration of Sensors and Actuators with Arduino. [10]

6. Explain in detail the Raspberry Pi interfaces. [10]

OR

7. What is the use of SPI and I2C interfaces on Raspberry pi? [10]

QA QA QA QA QA QA QA G

8. There are two models of Raspberry Pi, A and B. Which model is suitable for IoT applications? Justify your answer with necessary technical details by comparing the above two models. [10]

QA QA QA QA OR QA QA QA G

9.a) How SDN can be used for various levels of IoT? [5+5]
b) Describe the steps for data acquiring in IoT implementation.

10. Explain Smart city security architecture. [10]

OR

11. Explain the different services of Cloud computing. [10]

QA QA QA QA QA QA QA G

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QA QA QA QA QA QA QA G

QA QA QA QA QA QA QA G

QA QA QA QA QA QA QA G

QA QA QA QA QA QA QA G

QA QA QA QA QA QA QA G