

**LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034**



**B.Sc. DEGREE EXAMINATION – COMPUTER SCIENCE**

**FOURTH SEMESTER – APRIL 2022**

**UCS 4604 – INTERNET OF THINGS**

Date: 23-06-2022

Dept. No.

Max. : 100 Marks

Time: 09:00 AM - 12:00 NOON

**PART – A**

**Answer all the questions**

**10x2=20**

1. What is the IoT conceptual framework equation defined by Oracle?
2. List some examples of technologies involved in IoT.
3. Define Gateway.
4. List the features of 6LOWPAN.
5. What are the features of a data store?
6. What is knowledge management?
7. Write a note on Industrial IoT.
8. Define RTOS.
9. List the building blocks of an IoT device.
10. What are the five pins on raspberry pi for the SPI interface?

**PART - B**

**Answer all the questions**

**5x8=40**

- 11 a. Describe the IoT reference model suggested by CISCO and list the features of Oracle IoT framework.  
(OR)  
b. Describe the various popular IoT development boards. What is the role of RFID in IoT applications?
- 12 a. Explain the ITU-T reference model with a neat diagram.  
(OR)  
b. Explain the features of IPv4 header with a neat diagram.
- 13 a. Explain the processes involved in i) Data centre management ii) Server management.  
(OR)  
b. Explain Descriptive analytics
- 14 a. Explain the applications of an actuator.  
(OR)  
b. Explain the hardware units that are embedded in an IoT motherboard.
- 15 a. Brief the steps involved in controlling an LED with Raspberry Pi.  
(OR)  
b. Explain pcDuino and beaglebone with a block diagram.

**PART - C**

**Answer any TWO questions**

**2x20=40**

- 16 a. Write in detail about the major components of an IoT system.
- b. Compare the features of NFC, BT-LE, ZigBee and WLAN protocols
  
- 17 a. Write in detail about the different types of online transactions and processing.
- b. Explain the basic concepts of embedded software and Integrated Development Environment.
  
- 18 a. Explain the steps in interfacing a light sensor with Raspberry Pi.
- b. Illustrate and explain the UDP header format. Enumerate its applications.

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