**ST. JOSEPH’S COLLEGE (AUTONOMOUS), BENGALURU -27**

Registration Number:

Date & Session

**BCA–6th SEMESTER**

**SEMESTER EXAMINATION: APRIL 2024**

**(Examination conducted in May /June 2024)**

**CA6323: Internet of Things**

**(For current batch students only)**

**Time: 2 Hours Max Marks: 60**

**This paper contains 2 printed pages and 3 parts.**

**PART-A**

**Answer all the questions (2\*5=10)**

1. Define the challenges for IoT applications.
2. Highlight the features of “IBM Watson IoT platform”.
3. Differentiate between Arduino UNO and Arduino Micro.
4. Illustrate IoTWF architecture with a diagram.
5. Why has Raspberry pi become popular with respect to IoT?

**PART- B**

**Answer any five of the following questions (4\*5=20)**

#### Demonstrate with a sample sketch, interfacing potentiometer on Arduino.

1. Demonstrate the Arduino function libraries with an example.
2. Write a short note on “Things in IoT”.
3. Summarize the 4 messaging modes of COAP with diagram
4. Explain the given statements, associated with the challenges of IoT Analytics Applications

a. Heterogeneity of IoT data streams

b. The time and location dependencies of IoT stream

1. Illustrate
2. Architecture of Raspberry Pi.
3. Operating systems that can be installed on Raspberry pi.
4. Explain the key characteristics that defines a Smart Object.

**PART- C**

**Answer any three of the following questions (3\*10=30)**

1. Illustrate
   1. MQTT uses publish/subscribe architecture with a diagram (5 Marks)
   2. Layer 3 in simplified IoT architecture. (5 Marks)
2. Demonstrate
   1. Basic structure Sketch in Arduino programming with an example.(4 Marks)
   2. Write a sketch to implement

“blink alternative LEDs for four times with a delay of three seconds”.

1. a. Demonstrate the micropython code to “Read temperature and humidity values from the three DHT22 sensors and display on the console the average temperature and average humidity”. (5 Marks)
2. Interface Push button and LEDs on Arduino Uno for simulating traffic light signals. Write a program to perform interactive traffic system. (5 Marks)

11) a. Illustrate “The Phases of IoT analytics life cycle.” (6Marks)

b. Summarize the four Vs of IoT(BigData) (4 Marks)

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