

(Please write your Exam Roll No.)

Exam Roll No. ....

# END TERM EXAMINATION

SIXTH SEMESTER [BCA] JUNE-2024

**Paper Code: BCA-306**

**Subject: Internet of Things**  
**(Batch-2021 Onwards)**

**Time: 3 Hours**

**Maximum Marks: 75**

**Note: Attempt all questions as directed. Internal Choice is indicated.**

- Q1 Attempt **any five** of the following questions: **(5x5=25)**
- (a) Discuss and differentiate Arduino Uno and Raspberry Pi board.
  - (b) What do you mean by participatory sensing technology?
  - (c) Explain architecture of Arduino Board.
  - (d) Write about ease of designing and affordability of IoT systems.
  - (e) What are the key use cases for Smart Cities.
  - (f) Summarize the characteristics of IoT.
  - (g) Explain is RFID in detail along with its type.
  - (h) Explain Wireless Sensor Network.
- Q2 Explain IOT in detail along with its vision? Write about sources of IOT and Technology behind IOT. **(12.5)**
- OR**
- Q3 Explain IOT/M2M system layers and design standardizations. Differentiate the IoT and M2M. **(12.5)**
- Q4 Explain the Conceptual Framework and architecture of IoT with suitable diagram. **(12.5)**
- OR**
- Q5 (a) Explain "sensor" and its working. Describe any five types of sensors. **(6.25)**
- (b) Explain Actuator and its use in IoT? Explain types of actuators in detail. **(6.25)**
- Q6 Explain Wireless Medium Access Issues and MAC Protocol Survey. **(12.5)**
- OR**
- Q7 Write note on programming with Arduino IDE. Write Arduino code that uses ultrasonic sensor to measure distance of an object from the sensor. **(12.5)**
- Q8 Discuss the development and security issues in IOT applications in detail. **(12.5)**
- OR**
- Q9 Explain **any two** of the following IOT Applications in detail: **(6.25x2=12.5)**
- (a) Smart metering
  - (b) Smart Cards
  - (c) E-Health
  - (d) Home Automation

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