



Kambalig

Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category A by MHRD (now MoE)

Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Examination – November 2025

V Semester

Class : III UG

Major : Computer Science

Time: 3 Hours

Max. Marks: 100

23BCSDE5 Internet of Things

Course Outcome

CO1: Obtain on the basic ideas of Microcontrollers and Actuators.

CO2: Acquire skills in the functionalities of sensors and their working principles.

CO3: Gain knowledge in the general concepts of Communication Protocols.

CO4: Familiarize with hardware components and sensors used for developing IoT products.

CO5: Master the basics of Data Analytics and Cloud Computing.

Part A

10 x 1 = 10

Choose the Correct Answer

1. Which layer in IoT system is responsible for sensing environment? CO2 K1
a. Application b. Perception
c. Network d. Business
2. Which microcontroller board uses ATmega328P? CO1 K1
a. Arduino UNO b. Raspberry Pi
c. BeagleBone d. ESP8266
3. The sensor that works on thermistor principle is called _____. CO2 K1
a. Temperature sensor b. Light sensor
c. Voltage sensor d. Ultrasonic sensor
4. Wireless technology used for short-range communication _____. CO3 K2
a. Bluetooth b. WiFi
c. ZigBee d. RFID
5. The architecture style supporting interoperability called as _____. CO3 K2
a. SoA b. API
c. LAN d. VPN
6. Which standard defines low-rate wireless personal area networks? CO3 K1
a. IEEE 802.15.4 b. IEEE 802.11
c. IEEE 802.3 d. IEEE 802.16
7. Identify the actuator used for precise angular control. CO1 K2
a. Servo motor b. DC motor
c. Stepper motor d. Ultrasonic sensor
8. Which actuator is used for precise angular control? CO4 K1
a. Raspberry Pi b. Arduino UNO
c. Arduino Nano d. Arduino Mini
9. Name the process of examining raw IoT data to find patterns CO5 K1
a. Analytics b. Storage
c. Virtualization d. Monitoring
10. Which extended architecture brings cloud closer to edge? CO5 K2
a. FOG computing b. Grid computing
c. Parallel computing d. Blockchain

Part B

5 x 6 = 30

Answer ALL questions

Each answer should not exceed 400 words or two pages.

- 11.a. Explain the characteristics of IoT System. CO1 K2
(or)
- ✓ 11.b. Differentiate between Arduino Nano and Arduino Mini. CO1 K3
- 12.a Write notes on the Temperature and humidity sensors. CO2 K1
(or)
- 12.b. Write note on i) Wireless Bluetooth Sensor and ii) Embedded Sensors. CO2 K1
- 13.a. Explain on Fundamentals of Networking. CO3 K2
(or)
- 13.b .Present the Features of Service Oriented Architecture. CO3 K1
- 14.a. Write notes on Arduino Programming.. CO4 K1
(or)
- 14.b. Discuss the IoT Applications of Servo Motor and DC Motor. CO4 K2
- 15.a. Explain FOG computing and its challenges. CO5 K2
(or)
- 15.b. Explain the service models of cloud computing. CO5 K2

Part C

5 x 12 = 60

Answer ALL questions

Each answer should not exceed 800 words or four pages

- ✓ 16.a. Explain the Enablers of IoT and Connectivity Layers of IoT. CO3 K2
(or)
- 16.b. Explain the working principles of Wireless Sensor Networks with a diagram. CO2 K2
- ✓ 17.a. Explain in detail about the different types of IoT sensors with its applications. CO2 K2
(or)
- 17.b. Discuss wireless communication technologies used in IoT. CO3 K2
- ✓ 18.a. Describe the different IoT communication protocols in detail. CO3 K2
(or)
- 18.b. Explain in detail about the wireless networks used in IoT. CO3 K2
- ✓ 19.a. Discuss the role of Raspberry Pi in IoT. Explain its features, architecture and applications. CO4 K2
(or)
- 19.b. Explain the interfacing of sensors with Arduino and Raspberry Pi with suitable examples. CO4 K2
- ✓ 20.a. Explain in detail about the cloud computing and data analytics in IoT. CO5 K2
(or)
- 20.b. Write on IoT applications in Healthcare and Agriculture . CO5 K2
