



**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**  
**Re-accredited with A++ Grade by NAAC. CGPA 3.65/4, Category I by UGC**  
**Coimbatore - 641 043, Tamil Nadu, India**  
**Continuous Internal Assessment - II - (October 2025)**  
**V Semester**

**Class : III B. Sc**  
**Major : Computer Science**

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

**23BCSDE5/ Internet of Things**

**Course Outcomes:**

- CO1:** Obtain knowledge on the basic ideas of Microcontrollers and Actuators  
**CO2:** Acquire skills in the functionalities of sensor and its working principle  
**CO3:** Gain knowledge in the general concepts of Communication Protocols  
**CO4:** Familiarize about Hardware's components and sensors used for developing IoT Products  
**CO5:** Master the basics of Data Analytics and Cloud Computing

**Part A**

**6 x 1 = 6**

**Choose the Correct Answer**

1. Which protocol is widely used for lightweight IoT messaging?  
a) SMTP b) FTP c) MQTT d) HTTP CO3 K1
2. Zigbee protocol is based on which IEEE standard?  
a) IEEE 802.16 b) IEEE 802.3 c) IEEE 802.15.4 d) IEEE 802.11 CO3 K1
3. In Arduino, which function is used to execute code repeatedly?  
a) start() b) loop() c) main() d) setup() CO4 K1
4. Which IoT device is suitable for temperature and humidity sensing?  
a) RFID b) DHT11 c) LDR d) PIR CO4 K1
5. Which service model in cloud computing provides virtualized infrastructure?  
a) DaaS b) SaaS c) PaaS d) IaaS CO5 K1
6. Which type of computing reduces latency by bringing computation closer to devices?  
a) Edge caching b) Fog computing c) Grid computing d) Cloud computing CO5 K2

**Part B**

**3 x 6 = 18**

**Answer ALL questions**

**Each answer should not exceed 400 words or two pages**

7. a. Explain the differences between IoT and Web protocols. CO3 K2  
(or)  
7. b. Write a short note on MQTT and SMQTT protocols. CO3 K2
8. a. Explain the process of controlling an LED and buzzer using Arduino programming. CO4 K2  
(or)  
8. b. Discuss the role of actuators in IoT applications with examples. CO4 K2
9. a. Write short notes on Sensor-cloud architecture. CO5 K2  
(or)  
9. b. Explain the applications of Fog computing in IoT. CO5 K4

**Part C**

**3 x 12 = 36**

**Answer ALL questions**

**Each answer should not exceed 800 words or four pages**

- 10.a. Discuss in detail the different communication protocols used in IoT with examples. CO3 K2  
(or)  
10.b. Explain the role of gateways and interoperability in IoT communication. CO3 K2
11. a. Explain the integration of sensors and actuators with Arduino in detail. CO4 K2  
(or)  
11.b. Describe the implementation of IoT applications using Raspberry Pi with example. CO4 K2
12. a. Write an essay on Cloud computing services (IaaS, PaaS, SaaS) with IoT applications. CO5 K4  
(or)  
12.b. Discuss the case studies of IoT in Agriculture and Healthcare focusing on data analytics. CO5 K4

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No.of copies : 60 +60

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