

**8E1910**

Roll No. \_\_\_\_\_

[Total No. of Pages : 2]

**8E1910****B.Tech. VIII Sem. (Main/Back) Examination, April/May - 2025****Information Technology  
8IT4-01 Internet of Things****Time : 3 Hours****Maximum Marks : 70****Instructions to Candidates:**

*Attempt all Ten questions from Part A, Five questions out of seven questions from Part B and Three questions out of five questions from Part C.*

*Schematic diagrams must be shown wherever necessary. Any data you feel missing suitably be assumed and stated clearly. Units of quantities used/calculated must be stated clearly.*

*Use of following supporting material is permitted during examination. (Mentioned in form No. 205).*

**PART - A****(Answer should be given up to 25 words only)****All questions are compulsory.****(10×2=20)**

1. Define the Internet of Things (IoT). Also state main component of IoT.
2. What is the difference between physical and logical design in IoT?
3. What is the function of a sensor in an IoT system?
4. Name two applications of ultrasonic sensors in IoT.
5. Define an actuator and give an example.
6. What is a Uniform Resource Identifier (URI)?
7. What are the main layers in the IoT reference model?
8. Name two design challenges in IoT.
9. How does Software-Defined Networking (SDN) benefit IoT?
10. Compare Tiny OS and Contiki OS.

**ersahilkagyan.com**

**PART - B**  
**(Analytical / Problem Solving Questions)**

**Attempt any Five questions.**

**(5×4=20)**

1. Evaluate how big data analytics enhances IoT decision-making processes.
2. Compare the advantages and limitations of using Arduino and Raspberry Pi in IoT projects.
3. Describe the functionalities of different operating systems (LiteOS, RIOTOS, Contiki OS, Tiny OS) in IoT.
4. Compare RESTful architecture with traditional IoT communication models.
5. Analyze the impact of security challenges on the deployment of IoT systems in healthcare.
6. Explain the roles of sensors and actuators in IoT systems with real-life examples.
7. What is Network Function Virtualization (NFV)? Also analyze the role of SDN and NFV in improving IoT scalability and flexibility.

**PART - C**  
**(Descriptive / Analytical / Problem Solving / Design Questions)**

**Attempt any Three questions.**

**(3×10=30)**

1. Explain the IoT architecture and reference model, focusing on its components and functionalities.
  2. Explain the design, development, and security challenges faced during IoT implementation.
  3. Design an IoT solution for smart agriculture that integrates M2M communication and SDN.
  4. Design an IoT based home automation system that includes security, lighting, and energy management features.
  5. Discuss the applications of IoT in various domains like healthcare, agriculture, and smart cities.
-