

**TILAK MAHARASHTRA VIDYAPEETH, PUNE**  
**MASTER OF SCIENCE (M.SC) IN COMPUTER APPLICATIONS**  
**EXAMINATION : MAY - 2024**  
**SEMESTER -III**

**Sub: Internet of Things (MSC -305 -22)**

**Date :30/05/2024**

**Total Marks : 60**

**Time: 2.00 pm To 4.30pm**

**Instruction:**

1. All questions are compulsory unless and otherwise stated.
2. Bold figures to the right of every question are the maximum marks for that question.
3. Candidates are advised to attempt questions in order.
4. Answers written illegibly are likely to be marked zero.
5. Use of scientific calculators, Log tables, Mollier Charts is allowed.
6. Draw neat and labelled diagram wherever necessary.

**Q. 1. Answer the following in 2-3 lines. (Any 5) (10)**

1. What is use of LoRaWan protocol?
2. What is RFID?
3. Define Wireless technology?
4. Define star and mesh topology.
5. Describe connectivity technology Bluetooth.
6. Explain any two functions are used in Arduino IDE?
7. What are structural aspect of IoT.

**Q. 2. Answer the following in short. (Any 4) (20)**

1. Explain security requirement for IoT.
2. Explain different topologies used in Zigbee.
3. Explain characteristics of IoT.
4. Write a short note on wireless sensor network.
5. Explain cloud of things architecture.
6. Explain different services provided by cloud computing in IoT environment.

**Q. 3. Answer the following in detail. (Any 3) (30)**

1. Describe Machine-to-Machine communication with its feature & application in IoT.
  2. What is Sensing? Explain the types of sensors?
  3. List out IoT applications. Explain any one in detail.
  4. Explain Vulnerabilities of IoT.
  5. Explain the basic structure of Arduino Programming.
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