

COURSE CODE (CREDITS):18B1WEC747

MAX. MARKS: 35

COURSE NAME: Internet of Things

COURSE INSTRUCTORS:Dr. Salman Raju Talluri

MAX. TIME: 2 Hours

Note: (a) All questions are compulsory.

(b) Marks are indicated in square brackets

(c) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

1. Why is cyber security so important for IoT systems? What are the core functions of NIST cyber security framework? Explain in detail. [Marks: 4 CO-4]
2. What are the different types of cloud architectures that are used in IoT? Give the categories of cloud services offered by them. Give an example for each service and service provider as well. [Marks: 4 CO-4]
3. Explain in detail about UDP and CoAP. Make a comparison between these two protocols. [Marks: 4 CO-4]
4. What are the messaging methods used in machine-to-machine communication. Explain them with neat diagrams. [Marks: 4 CO-3]
5. Design an architecture model using the fundamentals of IoT for smart control and command center of a city. Provide the layered architecture for this. [Marks: 6 CO-3]
6. What are LoWPANs that are used in IoT systems? Based on what parameters the selection of a required technology is being done. [Marks: 4 CO-3]
7. What are the different types of diversity/ multiple access techniques that are used in wireless communications. How do we increase the diversity to utilize a resource in an efficient an optimal way. Give an example for this. [Marks: 4 CO-2]
8. Write in brief about the following. [Marks: 5 CO-5]
 - a. CAN protocol
 - b. Sensing and Actuation
 - c. NFC and Wi-Fi
 - d. Up-chirp and Down-chirp tweedles.
 - e. Path Loss formula