

VISVESVARAYA TECHNOLOGICAL UNIVERSITY BELAGAVI

**Internet of Things (18CS81)**

# QUESTION BANK

(As per Visvesvaraya Technological University Syllabus)

# Prepared by, Supriya C

Assistant Professor

## DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING ACHARYA INSTITUTE OF TECHNOLOGY

(Affiliated to VTU, Belagavi, Approved by AICTE, New Delhi and Govt. of Karnataka)

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# Trademark



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**Internet of Things and Applications**

Dept. of ISE, AcIT- Bangalore

### Internet of Things and Applications

Subject Code : **18CS81** I.A. Marks : 40

|  |  |  |  |
| --- | --- | --- | --- |
| Number of Lecture Hours/Week | : 04 | Exam Marks | : 60 |
| Total Number of Lecture Hours | : 50  **Module 1** | Exam Hours | : 03 |

1. What is IOT? Explain evolutionary phases of the internet?(6M JAN 2020)
2. Explain Access network sublayer with a neat diagram?(6M JAN 2020)
3. What are the elements of one M2M iot architecture explain?(4M JAN 2020)
4. Explain the functionality of iot network management sub layer ?(5M JAN 2020)
5. Describe iot word forum(IOTWF) standardized architecture?(7M JAN 2020)
6. Compare and contrast IT and OT?(4M JAN 2020)
7. What is IOT Explain in detail on Genesis of IOT(8M 2019)
8. What does IOT and digitization mean? Elaborate on this concept(4M July 2019)
9. Write a short note on “IOT impact in real world”(4M July2019)
10. Discuss IOT challenges((8M July 2019)
11. With a neat diagram Explain the architecture of IOT((4M July 2019)
12. Explain Core IOT functional stack(4 M July 2019)

### Module 2

* 1. With a neat diagram explain how actuators and sensors interact with physical world, classify actuator based on energy type?(8M JAN 2020)
  2. List out the limitations of the smart objects in wireless sensor networks and explain data aggregation in WSN with a neat diagram (8M JAN 2020)?
  3. What is zigbee? Explain 802.15.4 physical layer, mac layer and security?(8M JAN 2020)
  4. Explain LOTRAWAN standard and ALLIANCE mac layer and security?(8M JAN 2020)
  5. List and explain different types of sensors(8 M July 2019)
  6. Elaborate on small physical objects and small virtual objects(4M July 2019)
  7. Explain IOT Access Technologies(4M July 2019)
  8. Briefly explain protocol stack utilization IEEE802.15.4(8 M July 2019)
  9. What is SANET ? Explain some advantages and disadvantages that a wireless based solution(8M July 2019)

### Module 3

1. With a neat diagram explain 6LOWPAN protocol header comparison and fragmentation?(8M JAN 2020)
2. List and explain the key and advantages of internet protocol?(4M JAN 2020)
3. Explain RPL encryption and authentication on constrained nodes?(4M JAN 2020)
4. Explain tunneling legacy SCADA over IP networks and SCADA protocol transmission with a neat diagram?(8M JAN 2020)
5. Describe MQTT frame work and message format in detail? ?(4M JAN 2020)
6. Explain working of IP as the IOT network layer(8M July 2019)
7. Write note on Business case for IP(4M July2019)
8. Discuss need for Optimization(4M July 2019)

### Module 4

1. Explain elements of Hadoop with a neat diagram?(7M JAN 2020)
2. Explain neural network in machine learning with a detailed example?(5M JAN 2020)
3. Describe the components of FNF ?(4M JAN 2020)
4. Explain formal risk analysis structures?(8M JAN 2020)
5. Explain the purdue model for control hierarchy and OT network characteristics?(8M JAN 2020)
6. What do you mean by data and analytics for IOT? Explain(4 M July 2019)
7. Discuss big data analytics tools and Technology? (4 M July 2019)
8. With a case study relate the concept of securing IOT?(8M July2019)
9. Explain in detail how IT and OT security practices and systems vary in real time(8M july2019)
10. Discuss OCTAVE and FAIR formal risk analysis(8M July 2019)

### Module 5

1. Explain the following with respect to Arduino programming
   1. Structure
   2. Functions
   3. Variables
   4. Flow control statements
   5. Data types
   6. Constants (8M JAN 2020)
2. Explain Raspberry Pi learning board? (4 M JAN 2020
3. Write a python program on raspberry Pi to blink an LED (6M JAN 2020)
4. Explain smarty city security architecture? (6M JAN 2020)
5. Write a short note on IOT challenges, Backhaul technologies? (4M JAN 2020)
6. Give a brief note on Arduino UNO? (4M)(July 2019)
7. With a neat diagram explain Raspberry Pi board?(4M)( July 2019)
8. With a neat diagram explain wireless temperature monitoring system using Raspberry Pi?(8M)( July 2019)
9. Explain in detail smart city IOT architecture?(8M)( July 2019)
10. With the case study explain smart and connected cities using Raspberry Pi?(8M)( July 2019)