



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION
Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai



DEPARTMENT OF COMPUTER SCIENCE AND DESIGN

QUESTION BANK

V SEMESTER

19IT503-INTERNET OF THINGS

Regulation - 2019

Prepared by

Mrs. Parvathi, Assistant Professor/CSD



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION
Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai



QUESTION BANK

SUBJECT : 19IT503 –INTERNET OF THINGS

SEM / YEAR: V- III

UNIT I IoT INTRODUCTION AND APPLICATIONS			
Overview and Motivations - IPv6 Role - IoT Definitions - Observations - ITU-T Views – Working Definition - IoT Frameworks - Basic Nodal Capabilities – Physical Design of IoT - Logical Design of IoT – Applications: - City Automation Automotive Applications - Home Automation - IoT Levels & Deployment Templates - IoT and M2M			
PART A			
Q.NO	QUESTIONS	COMPETENCE	LEVEL
1.	Define IoT.	Remember	BTL-1
2.	Give the evolutionary phases of IoT.	Understand	BTL-2
3.	Point out the challenges faced by Internet of Things.	Analyze	BTL-4
4.	Summarize the characteristics of IoT.	Evaluate	BTL-5
5.	List the applications of IoT.	Remember	BTL-1
6.	Illustrate the IoT Reference model.	Apply	BTL-3
7.	Define Fog Computing.	Remember	BTL-1
8.	Examine the hierarchy of Fog, Edge and Cloud.	Remember	BTL-1
9.	Summarize the criteria used to classify Actuators.	Evaluate	BTL-5
10.	Quote the trends in smart Objects.	Remember	BTL-1
11.	Differentiate IoT and M2M.	Understand	BTL-2
12.	Give IoT Data Management and Compute Stack.	Understand	BTL-2



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

13.	Classify the functional Block of IoT ecosystem.	Apply	BTL-3
14.	Generalize the “things” in IoT.	Create	BTL-6
15.	Compare Fog and Edge computing.	Analyze	BTL-4
16.	Analyze the purpose of Sensors, Actuators and Smart Objects.	Analyze	BTL-4
17.	List the functional stack of core IoT.	Remember	BTL-1
18.	Summarize the characteristics of Fog Computing.	Understand	BTL-2
19.	Classify the different types of Sensors.	Apply	BTL-3
20.	Formulate the communication criteria used for connecting smart objects.	Create	BTL-6
PART B			
1.	Describe the IoT enabling Technologies with suitable explanations.	Understand	BTL-2
2.	Illustrate the oneM2M IoT standardized architecture and explain the layers with neat diagram	Apply	BTL-3
3.	Analyze in detail the Hierarchy followed in Edge, Fog and Cloud with suitable illustration.	Analyze	BTL-4
4.	(i) List the “things” in IoT and explain briefly. (6) (ii) Describe the process of Connecting Smart Objects.(7)	Remember	BTL-1
5.	Compare in detail the OneM2M IoT Architecture and IoTWF standardized reference model.	Analyze	BTL-4
6.	Summarize in detail IoT data management and Compute stack.	understand	BTL-2
7.	Discuss the following in detail (i) Sensors and Actuators. (6) (ii) Connecting Smart Objects. (7)	Understand	BTL-2
8.	Describe in detail (i) MEMS – Micro Electro Mechanical Systems. (ii) Sensor Networks.	Remember	BTL-1
9.	(i) Compare the two IoT Architectures briefly. (7) (ii) Explain the IoTWF standardized Architecture in detail. (6)	Evaluate	BTL-5
10.	(i) Tabulate the Alternative IoT Reference Models. (6) (ii) Describe the simplified IoT Architecture. (7)	Remember	BTL-1



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

11.	(i) Analyze in detail about Sensors, Actuators and Smart Objects. (6) (ii) Pointout the Communication criteria and Access Technologies for connecting smart Objects. (7)	Analyze	BTL-4
12.	Describe the seven layers of IoT Reference model designed by IoTWF.	Remember	BTL-1
13.	Demonstrate the Simplified IoT Architecture and Core IoT Functional Stack with neat diagram.	Apply	BTL-3
14.	(i) Generalize the various enabling technologies of IoT. (7) (ii) Formulate the evolutionary trend of IoT with necessary illustration. (6)	Create	BTL-6

PART C

1.	Analyze the challenges and requirements faced by the IoT systems, which paved way to network architecture and compare the two best known architecture supported by OneM2M and IoTWF.	Analyze	BTL-4
2.	Prepare a detailed analysis of smart objects and their architecture thereby elaborating the design limitations and role within IoT Networks.	Create	BTL-6
3.	Develop a narration on IoT Access technologies that plays a major role in market. Give suitable examples explaining the technologies.	Create	BTL-6
4.	Measure the different types of physical conditions for denoting the various types of sensors and tabulate them.	Evaluate	BTL-5

UNIT II IoT INTRODUCTION AND APPLICATIONS

Identification of IoT Objects and Services- Structural aspects of IoT-Environment Characteristics-Traffic Characteristics-Scalability-Interoperability-Security and privacy -Key IoT Technologies: Device Intelligence - Communication Capabilities - Mobility Support - Device Power -Sensor Technology -RFID Technology - Satellite Technology - IoT Enabling Technologies- WSN, Cloud computing, Big data Analytics, communication protocols, embedded systems

PART A

1.	Define IEEE 802.15.4	Remember	BTL-1
2.	Where IEEE. 802.15.4 can be deployed?	Remember	BTL-1
3.	Analyze the use of ZigBee.	Analyze	BTL-4
4.	Examine the use of IEEE 1901.2a.	Remember	BTL-1
5.	Illustrate the high-level ZigBee Protocol stack.	Apply	BTL-3



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

6.	Give the purpose of IEEE 802.15.4 MAC layer.	Understand	BTL-2
7.	Compare ZigBee and ZigBee IP.	Analyze	BTL-4
8.	Analyze the process to optimize IP for IoT.	Analyze	BTL-4
9.	Demonstrate the use of MQTT.	Apply	BTL-3
10.	Express the IEEE 802.15.4 MAC Format.	Understand	BTL-2
11.	Examine the use of Rols.	Apply	BTL-3
12.	Generalize on CoAP.	Create	BTL-6
13.	Distinguish IEEE 802.15.4g and IEEE 802.15.4e.	Understand	BTL-2
14.	Define SCADA.	Remember	BTL-1
15.	Evaluate the protocol translation of SCADA.	Evaluate	BTL-5
16.	Formulate on constrained nodes and constrained networks.	Create	BTL-6
17.	Differentiate Mesh Under vs Mesh-Over Routing.	Understand	BTL-2
18.	Conclude the process from 6LoWPAN to 6Lo.	Evaluate	BTL-5
19.	Define LoRaWAN and draw MAC format.	Remember	BTL-1
20.	List the IoT Application Transport methods.	Remember	BTL-1
PART B			
1.	(i) Tabulate the protocol stacks utilizing IEEE 802.15.4. (5) (ii) Describe on IEEE 802.15.4g and IEEE 802.15.4e. (8)	Remember	BTL-1
2.	Analyze in detail LoRa WAN technology, illustrating the layers , MAC format and Architecture.	Analyze	BTL-4
3.	Compare and contrast the physical and MAC layers of IoT Access technologies with suitable illustrations.	Evaluate	BTL-5
4.	Discuss the following: (i) Optimizing IP for IoT: (6) (ii) Need for Optimization Constrained nodes and Networks. (7)	Understand	BTL-2



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

5.	Examine the following with neat illustration (i) 1901.2a, (6) (ii) 802.11ah (7)	Remember	BTL-1
6.	Demonstrate in detail about IP versions and Optimizing IP for IoT.	Apply	BTL-3
7.	Summarize the Application Transport Methods: Supervisory Control and Data Acquisition.	Understand	BTL-2
8.	Describe about Application Layer Protocols: (i) CoAP (7) (ii) MQTT (6)	Remember	BTL-1
9.	Tabulate the main characteristics of Access Technologies and the variation in each of them.	Remember	BTL-1
10.	Discuss in detail about Application transport method and Application layer protocol.	Understand	BTL-2
11.	Analyze in detail Supervisory Control and Data Acquisition with suitable illustration.	Analyze	BTL-4
12.	Demonstrate Routing over Low Power and Lossy Networks with suitable explanation.	Apply	BTL-3
13.	Generalize in detail about: (i) Optimizing IP for IoT (6) (ii) 6LoWPAN to 6Lo (7)	Create	BTL-6
14.	Analyze Lossy Networks and RoLL in detail.	Analyze	BTL-4

PART C

1.	Analyze in detail the IoT Application protocol and their characteristics with suitable illustration.	Analyze	BTL-4
2.	Prepare a brief report on IEEE 802.15.4, IEEE 802.15.4g and IEEE 802.15.4e, IEEE 1901.2a, IEEE 802.11ah, LoRaWAN	Create	BTL-6
3.	Generalize in detail about Application transport method: SCADA and Application layer protocol: CoAP and MQTT	Create	BTL-6
4.	Explain in detail the need for optimization and Optimizing IP for IoT: From 6LoWPAN to 6Lo,	Evaluate	BTL-5

UNIT III EVOLVING IoT STANDARDS & PROTOCOLS

IETF IPv6 Routing Protocol for RPL Roll – Constrained Application Protocol (CoAP) – Representational State Transfer (REST) – Third Generation Partnership Project Service Requirements for Machine Type Communications- Over Low Power WPAN (6LoWPAN)- IP in Small Objects (IPSO) - WPAN Technologies for IoT/M2M – ZigBee/IEEE 802.15.4, RF4CE, Bluetooth and its Low-Energy Profile,



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

Cellular and Mobile Network Technologies for IoT/M2M.

PART A

1.	List the steps involved in IoT Design methodology.	Remember	BTL-1
2.	Give the characteristics of Embedded computing.	Remember	BTL-1
3.	Name the IoT system building blocks.	Remember	BTL-1
4.	Give an example IoT device and explain briefly.	Analyze	BTL-4
5.	Differentiate functional view and operational view of IoT Design methodology.	Understand	BTL-2
6.	Examine the integration of device and component in IoT design methodology.	Apply	BTL-3
7.	Compare sensors and actuators.	Analyze	BTL-4
8.	Examine the use and purpose of Arduino.	Remember	BTL-1
9.	Name the Linux version on Raspberry Pi.	Remember	BTL-1
10.	Summarize on Raspberry Pi.	Evaluate	BTL-5
11.	Discuss on Arduino software program sketches.	Understand	BTL-2
12.	Illustrate the block diagram of IoT Device.	Apply	BTL-3
13.	Discuss on interfacing LDR with Raspberry Pi.	Understand	BTL-2
14.	Analyze the interfaces in Raspberry Pi.	Analyze	BTL-4
15.	Summarize on the need of microcontroller in embedded system.	Analyze	BTL-2
16.	Generalize on controlling LED with Raspberry Pi.	Create	BTL-6
17.	Illustrate the basic Arduino board.	Apply	BTL-3
18.	Summarize on other IoT devices apart from Raspberry Pi.	Evaluate	BTL-5



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

19.	Generalize on the various chips on embedded system.	Create	BTL-6
20.	List the essential requirements for setting up Raspberry Pi.	Remember	BTL-1
PART B			
1.	Demonstrate the key steps involved in IoT Design methodology, explain the steps involved in	Apply	BTL-3
2.	(i) Summarize in detail about embedded computing. (6) (ii) Explain the microcontroller and chips involved in embedded devices. (7)	Evaluate	BTL-5
3.	Formulate on python programming for Raspberry Pi.	Create	BTL-6
4.	Discuss in detail the use of embedded computing in the design of IoT Systems.	Understand	BTL-2
5.	(i) Analyze in detail an exemplary device: Raspberry Pi. (6) (ii) Explain in detail the Raspberry Pi interfaces. (7)	Analyze	BTL-4
6.	Illustrate the Arduino board details and explain the steps for installing the board.	Apply	BTL-3
7.	Discuss in detail the building blocks of IoT and its functionalities with suitable illustration.	Understand	BTL-2
8.	(i) List the IoT design methodology. (6) (ii) Examine the building blocks of IoT. (7)	Remember	BTL-1
9.	Describe the steps for designing IoT system with neat diagram.	Remember	BTL-1
10.	(i) Examine the process of using the Integrated Development Environment (IDE) to prepare an Arduino sketch. (7) (ii) Describe the steps for setting up of Arduino board. (6)	Remember	BTL-1
11.	Define IoT device and give a detailed narration of IoT device example in real world applications.	Remember	BTL-1
12.	Discuss in detail the Interfacing LED and switch with Raspberry Pi as an example. Give the procedure.	Understand	BTL-2
13.	Analyze the software and hardware features of Arduino board and explain the procedure to install IDE.	Analyze	BTL-4
14.	Analyze the embedded computing logic and use of microcontroller in embedded system with neat diagram.	Analyze	BTL-4
PART C			
1.	Analyze in detail the design methodology used to implement IoT Devices, explain the level wise design steps with neat diagram.	Analyze	BTL-4



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

2.	Point out some examples that define IoT devices and explain in brief the basic building block and layers in IoT system with diagram.	Evaluate	BTL-5
----	---------------------------------------------------------------------------------------------------------------------------------------------	----------	-------

3.	Analyze and explain in detail Programming Raspberry Pi with python by giving suitable example. Also elaborate on Raspberry Pi interfaces.	Analyze	BTL-4
----	--------------------------------------------------------------------------------------------------------------------------------------------------	---------	-------

4.	Design a basic Arduino board and explain the procedure for installing and setting up of IDE.	Create	BTL-6
----	-----------------------------------------------------------------------------------------------------	--------	-------

UNIT IV IPv6 TECHNOLOGIES FOR THE IOT

Motivations - Address Capabilities - IPv6 Protocol Overview - IPv6 Tunneling - IPsec in IPv6 -Header Compression Schemes - Quality of Service in IPv6 - MOBILE IPv6 -Protocol Details -Generic Mechanisms - New IPv6 Protocol - Message Types - Destination Option - Modifications to IPv6 Neighbor Discovery - Requirements for Various IPv6 Nodes - Correspondent Node Operation

PART A

1.	Define Machine Learning.	Remember	BTL-1
----	---------------------------------	----------	-------

2.	Generalize the use of AWS in IoT.	Create	BTL-6
----	------------------------------------------	--------	-------

3.	Compare Data in motion vs Data at Rest.	Evaluate	BTL-5
----	------------------------------------------------	----------	-------

4.	Define Neural networks.	Remember	BTL-1
----	--------------------------------	----------	-------

5.	Compare the two categories of machine learning.	Analyze	BTL-4
----	--------------------------------------------------------	---------	-------

6.	Analyze the use of NoSQL Database.	Analyze	BTL-4
----	-------------------------------------------	---------	-------

7.	Summarize on Hadoop.	Analyze	BTL-4
----	-----------------------------	---------	-------

8.	Differentiate Structured vs Unstructured Data.	Understand	BTL-2
----	-------------------------------------------------------	------------	-------

9.	Discuss on Hadoop ecosystem.	Understand	BTL-2
----	-------------------------------------	------------	-------

10.	Give the benefits of flow analytics.	Understand	BTL-2
-----	---------------------------------------------	------------	-------

11.	Summarize on Edge streaming analytics.	Evaluate	BTL-5
-----	-----------------------------------------------	----------	-------

12.	Define YARN.	Remember	BTL-1
-----	---------------------	----------	-------

13.	Name the core functions of Edge Analytics.	Remember	BTL-1
-----	---------------------------------------------------	----------	-------



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

14.	Demonstrate the use of Xively cloud for IoT.	Apply	BTL-3
15.	Examine the role of Python Web application framework – Django.	Apply	BTL-3
16.	Discuss on Apache spark.	Understand	BTL-2
17.	Formulate on Apache Kafka.	Create	BTL-6
18.	Compare Bigdata and Edge Analytics.	Apply	BTL-3

19.	Define Amazon S3 and Amazon RDS.	Remember	BTL-1
20.	Identify the role of various components of NETCONF-YANG.	Remember	BTL-1

PART B

1.	Explain in detail the need of Data Analytics for IoT and brief the challenges faced by IoT Data Analytics.	Analyze	BTL-4
2.	Discuss in detail about (i) Role of Machine Learning in IoT. (6) (ii) NoSQL Databases. (7)	Understand	BTL-2
3.	Describe in detail about Hadoop ecosystem and the two key components with suitable illustration.	Remember	BTL-1
4.	Compare in detail about (i) Structured Vs Unstructured Data. (6) (ii) Data in Motion Vs Data in Rest. (7)	Apply	BTL-3
5.	Evaluate the necessity of Apache Kafka and Apache Spark with diagram.	Evaluate	BTL-5
6.	Express in detail Edge streaming analytics and compare it with data analytics. Also give the functions of Edge analytics.	Understand	BTL-2
7.	Examine the need for Network Analytics and discuss on flexible NetFlow Architecture.	Remember	BTL-1
8.	Discuss in detail about Xively cloud for IT and Illustrate Xively dashboard device details.	Understand	BTL-2
9.	Examine the Python Web Application framework – Django architecture and steps to develop a Django project.	Apply	BTL-3
10.	Generalize the purpose of Amazon Web service for IoT.	Create	BTL-6
11.	Analyze the role of various components of NETCONF-YANG and steps for IoT device Management with NETCONF-YANG.	Analyze	BTL-4



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

12.	Discuss the key components of Hadoop ecosystem : HDFS and MapReduce.	Remember	BTL-1
13.	Analyze the use of (i) Python Web Application Framework – Django. (6) (ii) AWS for IoT. (7)	Analyze	BTL-4
14.	Discuss on Edge streaming analytics and Data analytics of IoT.	Remember	BTL-1

PART C

1.	Generalize in detail about Apache spark and Apache Kafka with data flow diagram.	Create	BTL-6
2.	Analyze in detail about Data Analytics in IoT and the role of Machine Learning with suitable illustration.	Analyze	BTL-4
3.	Evaluate the working of Xively Cloud dashboard device for IoT by giving suitable necessary explanation.	Evaluate	BTL-5
4.	Generalize the purpose of Python Web Application Framework – Django and Amazon Web service for IoT.	Create	BTL-6

UNIT V DESIGN METHODOLOGY & FUTURE TRENDS

IoT System Management with NETCONF-YANG: Need for IoT Systems Management – Simple Network Management Protocol (SNMP) –Limitations of SNMP, Network Operator Requirements- NETCONF-YANG-IoT Systems Management with NETCONF-YANG -IoT Platforms Design Methodology – IoT Physical Devices & Endpoints - Raspberry Pi- Linux on Raspberry Pi -Raspberry Pi Interfaces - Programming Raspberry Pi with Python

PART A

1.	List the six pillars/components of Cisco IoT Systems.	Remember	BTL-1
2.	Define Watson IoT Platform.	Remember	BTL-1
3.	Brief the sub layers of security in IoT systems.	Remember	BTL-1
4.	Analyze the use of Fog Computing.	Analyze	BTL-4
5.	Classify the key features of IBM Watson platform.	Apply	BTL-3
6.	Summarize the use of Watson Conversation services.	Evaluate	BTL-5
7.	Describe in brief Converged Plantwide Ethernet Model.	Remember	BTL-1



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

8.	Relate the use of blockchain services in IBM Watson IoT platform.	Apply	BTL-3
9.	Classify the implementation and design guidance of CPwE.	Apply	BTL-3
10.	Compose the three stages of power supply-chain in power utility industry.	Create	BTL-6
11.	Compose the use of smart traffic application.	Create	BTL-6
12.	Infer how IoT data are Securely connected, managed and analyzed.	Analyze	BTL-4
13.	Summarize on Grid Blocks reference model.	Understand	BTL-2
14.	Tell the challenges that become even more evident as the IT and OT networks become interconnected.	Remember	BTL-1
15.	Give the benefits provided by The grid Blocks reference architecture to utility operators.	Understand	BTL-2
16.	Discuss any one use case of smart applications of IoT.	Understand	BTL-2
17.	Conclude An IoT Strategy for Smarter Cities.	Evaluate	BTL-5
18.	Express why LED technology is used in street lighting?	Understand	BTL-2
19.	Define connected manufacturing.	Remember	BTL-1
20.	Analyze the smart parking use case.	Analyze	BTL-4

PART B

1.	Analyze the purpose of the Six-Pillar Approach for Cisco IoT System also explain the security framework.	Analyze	BTL-4
2.	Examine the Features of IBM Watson IoT platform, and brief on the services provided in it.	Remember	BTL-1
3.	(i) Describe an IoT strategy for connected Manufacturing. (6) (ii) Examine the architecture for connected factory. (7)	Remember	BTL-1
4.	Analyze in detail the architecture of Converged Plantwide Ethernet Model with suitable illustration.	Analyze	BTL-4
5.	Examine the challenges faced for parking in cities, and explain how smart parking provides a solution to this.	Remember	BTL-1
6.	(i) Demonstrate the use of Power Utility Industry. (7) (ii) Examine the IT/OT divide in Utilities. (6)	Apply	BTL-3



SNS COLLEGE OF ENGINEERING
Kurumbapalayam (Po), Coimbatore – 641 107
AN AUTONOMOUS INSTITUTION



Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

7.	Illustrate the 11-Tiered Reference Architecture of Grid Blocks and the use of reference model.	Apply	BTL-3
8.	(i) Summarize in detail the architecture model of CPwE. (7) (ii) Discuss on design and implementation guidance of CPwE. (6)	Understand	BTL-2
9.	Summarize on the solution for smart lighting and explain street lighting architecture in detail.	Evaluate	BTL-5
10.	(i) Generalize an IoT strategy for smart city. (6) (ii) Design an smart city layered architecture and explain how security is provided. (7)	Create	BTL-6
11.	Discuss the features of Cisco IoT System and explain the components and security involved in it.	Understand	BTL-2
12.	Describe the architecture of smart traffic control architecture and explain the applications of smart traffic.	Understand	BTL-2
13.	Analyze the grid block reference model and the reference architecture with suitable illustration.	Analyze	BTL-4
14.	(i) Define any one uses example of smart city examples. (6) (ii) Describe the smart city security architecture. (7)	Remember	BTL-1
PART C			
1.	Analyze the IoT platform designed by IBM Watson, explain what it can do to your business, and infer how IoT data are securely connected, managed and analyzed.	Analyze	BTL-4
2.	Prepare an IoT strategy for smart city and design the layered architecture for implementing smart cities.	Create	BTL-6
3.	Consider any use case example of smart applications of IoT, explain the architecture and technology need in building the application.	Evaluate	BTL-5
4.	Formulate an Industrial application of IoT system and brief on the various usecase of smart and connected cities.	Create	BTL-6