# INTERNET OF THINGS (IOT)

## ASSIGNMENT

## UNIT – I – INTRODUCTION TO IOT

1. IOT stands for _____.
2. IOT comprises things that have unique identities and are connected to the _____.
3. Experts forecast that by the year 2020 there will be a total of _____ devices connected to the internet.
4. IOT devices may have _____ capability, allowing a large number of devices to work together.
5. IOT devices may support a number of _____ communication protocol and can communicate with other devices.
6. IOT devices have a unique identity and a unique identifier such as an _____.
7. IOT devices can exchange data with other connected devices and applications as _____.
8. IOT protocols consist of _____ layers.
9. Host on the same link exchange data packets over the link layer using _____ protocols.
10. _____ is a collection of wired Ethernet standards for the link layer.
11. 802.3.i is the standard for _____ Ethernet over copper twisted-pair connections.
12. _____ is the standard for 10BASE-F Ethernet over fiber optic connections.
13. Wi-Fi stands for _____.
14. IEEE 802.11 is a collection of _____ standards.
15. IEEE 802.16 is a collection of _____ standards.
16. LR-WPAN stands for _____.
17. LR_WPAN standards form the basis of specification for high level communication protocol such as _____.
18. Mobile communication standards of 2G including GSM and _____.
19. Mobile communication standards of 4G including _____.
20. IOT devices based on 2G/3G/4G standards can communicate over _____ networks.
21. _____ Layer are responsible for sending IP datagrams from the source network of the destination network.
22. _____ Layer performs the host addressing and packet routing.
23. Host identification is done using hierarchical IP addressing scheme of _____.
24. IPv4 uses a _____ bit address scheme that allowed total of 2^32.

25. Guaranteed delivery and data integrity are handled by _____ layer protocol (as TCP).
26. IPv6 uses a _____ bit address scheme that allowed total of 2^128.
27. WPAN stands for _____.
28. 6LoWPAN works with the _____ link layer protocol.
29. TCP stands for _____.
30. TCP is a connection oriented and _____ protocol.
31. TCP also provides _____ detection capability.
32. UDP stands for _____.
33. _____ does not provide guaranteed delivery, ordering of messages and duplicate elimination.
34. _____ Layer protocol define how the applications interface with the lower layer protocols to send the data over the network.
35. _____ Numbers are used for application addressing.
36. HTTP stands for _____.
37. HTTP protocol uses _____ to identify HTTP resources.
38. CoAP stands for _____.
39. CoAP is an application layer protocol for _____ applications.
40. CoAP uses a client-server architecture where clients communicate with servers using _____ datagrams.
41. _____ is designed to easily interface with HTTP.
42. _____ Protocol allows full-duplex communication over a single socket connection for sending messages between client and server.
43. MQTT stands for _____.
44. _____ is a light-weight messaging protocol based on the publish-subscribed model.
45. XMPP stands for _____.
46. _____ is a protocol for real-time communication and streaming XML data between network entities.
47. DDS stands for _____.
48. DDS is a data-centric middleware standard for _____ communication.
49. AMQP stands for _____.
50. _____ supports both point-to-point and publisher/subscriber models, routing and queuing.
51. AMQP broker receive messages from _____.
52. The _____ block handles the communication for the IOT system.
53. _____ Block provides various functions to govern the IOT system.

54. _____ is a communication model in which the client sends requests to the server and the server responds to the requests.
55. _____ model is a stateless communication model.
56. _____ is a communication model that involves publishers, brokers, and consumers.
57. _____ is a communication model in which the data producers push the data to queues and the consumers pull the data from the queues.
58. _____ helps in decoupling the messaging between the producers and consumers.
59. _____ is a bi-directional, fully duplex communication model that uses a persistent connection between the client and server.
60. API stands for _____.
61. REST stands for _____.
62. _____ API's follow the request-response communication protocol.
63. _____ should not be concerned with the storage of data.
64. _____ should not be concerned about the user interface.
65. _____ System constraint, constrains the behavior of components.
66. _____ Interface constraint requires that the model of communication between a client and a server must be uniform.
67. Code on demand servers can provide _____ for clients to execute in their context.
68. A _____ web service is a "web API " implemented using HTTP and REST principles.
69. WebSocket communication begins with a connection setup request sent by the client to the server. This request is called _____.
70. A WSN stands for _____.
71. A _____ consists of a number of end-nodes and routers and a coordinator.
72. End-nodes also act as _____.
73. _____ are responsible for routing the data packets from end-nodes to the coordinator.
74. _____ is one of the most popular wireless technologies used by WSNs.
75. The self-organizing capability of WSN makes the network _____.
76. _____ is a transformative computing paradigm that involves delivering applications and services over the internet.
77. IaaS stands for _____.
78. PaaS stands for _____.
79. SaaS stands for _____.
80. _____ is defined as a collection of data sets.
81. _____ is important characteristics of big data.

82. _____ Protocol forms the backbone of IOT systems.
83. An _____ system is a computer systems that has computer hardware and software embedded to perform specific tasks.
84. Embedded system run embedded operating system of _____.
85. A _____ IOT system has a single node/device that performs sensing and/or actuation, stores data, performs analysis and hosts the application.
86. A _____ IOT system has a single node that performs sensing and/or actuation and local analysis.
87. _____ IOT system used for smart irrigation.
88. A _____ IOT system has a single node.
89. _____ IOT system used for tracking package handling.
90. A _____ IOT system has multiple nodes that perform local analysis.
91. _____ IOT system has used for noise monitoring.
92. A _____ IOT system has multiple end nodes and one coordinator node.
93. _____ Node collects data from the end nodes and send to the cloud.
94. A _____ IOT system has used for forest fire detection.
95. A _____ IOT system has multiple independent end nodes that perform sensing and/or actuation and send data to the cloud.
96. A _____ IOT has used for weather monitoring.
97. _____ helps in collaborate in IOT development.
98. IOT/ and cloud computing has _____ relationship.
99. IOT levels of data are stored in _____.
100. IP stand for _____.

## Answers:

1. Internet of Things
2. Internet
3. 50 billion
4. Self-configuring
5. Interoperable
6. IP address or URI
7. Directly or indirectly
8. 4
9. Link layer
10. IEEE 802.3
11. 10BASE-T
12. 802.3.j
13. Wireless Local Area Network
14. WLAN
15. Wireless broadband
16. Low-rate Wireless Personal Area network
17. zigBee
18. CDMA
19. LTE
20. Cellular
21. Network/internet
22. Network
23. IPv4 or IPv6
24. 32
25. Upper
26. 128
27. Wireless Personal Area Network
28. 802.15.4
29. Transmission Control Protocol
30. Stateful
31. Error
32. User Datagram Protocol
33. UDP
34. Application
35. Port
36. Hypertext Transfer Protocol
37. UPI's
38. Constrained application protocol
39. Machine-to-Machine
40. Connectionless
41. CoAP
42. Websocket
43. Message Queue Telemetry Model
44. MQTT
45. Extensible Messaging and presence protocol
46. XMPP
47. Data Distribution Service
48. Device-to-Device (or) Machine-to-Machine
49. Advanced Message Queuing protocol
50. AMQP
51. Publisher
52. Communication
53. Management
54. Request - Response
55. Request - Response
56. Publish-Subscribe
57. Push-Pull
58. Queues
59. Exclusive pair
60. Application Programming Interface
61. Representation State Transfer
62. REST
63. Clients
64. Server
65. Layered
66. Uniform
67. Executable code (or) script
68. RESTful
69. Websocket handsake

**70**. Wireless Sensor Network

**71**. WSN

**72**. Routers

**73**. Router

**74**. ZigBee

**75**. Robust

**76**. Cloud computing

**77**. Infrastructure-as-a-service

**78**. platform-as-a-service

**79**. software-as-a-service

**80**. BigZee

**81**. Velocity

**82**. Communication

**83**. Embedded

**84**. Real-time operating system

**85**. level-1

**86**. level-2

**87**. level-2

**88**. level-3

**89.** level-2

**90**. level-4

**91**. level-4

**92**. level-5

**93**. Coordinator

**94**. Level-5

**95**. Level-

**96**. Level-6

**97**. Cloud computing

**98**. complementary

**99**. cloud

**100.** Internet protocol