Introduction to
Internet of Things
Assignment-Week 2

TYPE OF QUESTION: MCQ/MSQ

Number of questions: **15**   **Total marks: 15 X 1= 15**

QUESTION 1:

Which of the following is based on the publish-subscribe model?

   a. MQTT
   b. HTTP
   c. HTTPS
   d. All of these

Correct Answer: a. MQTT

Detailed Solution: Message Queue Telemetry Transport (MQTT) is a publish-subscribe based lightweight messaging protocol for use in conjunction with TCP/IP protocol.

See lecture 6 (Basics of IoT Networking – Part II) @ 01:51

QUESTION 2:

In MQTT, a topic to which a client is subscribed is updated in the form of messages and distributed by the _____?

   a. Publishers
   b. Message Broker
   c. Subscribers
   d. All of these

Correct Answer: b. Message Broker

Detailed Solution: A topic to which a client is subscribed is updated in the form of messages and distributed by the message broker.

See lecture 6 (Basics of IoT Networking – Part II) @ 03:33

QUESTION 3:

Which of the following is used when more than one level needs to be subscribed, such as the entire sub-tree, i.e., a multilevel wildcard?

a. +
b. #
c. \
d. None of these

Correct Answer: b. #

Detailed Solution: If more than one level needs to be subscribed, such as the entire sub-tree, there is also a multilevel wildcard (#). It allows to subscribe to all underlying hierarchy levels. For example house/# is subscribing to all topics beginning with house.

See lecture 6 (Basics of IoT Networking – Part II) @ 12:40

QUESTION 4:

The CoAP protocol is designed for -.

a. Heavy Web Application
b. Publish-Subscribe Applications
c. Machine-to-Machine (M2M) applications
d. Both (a) and (b)

Correct Answer: c.   Machine-to-Machine (M2M) applications

Detailed Solution: CoAP – Constrained Application Protocol. It is a web transfer protocol for use with constrained nodes and networks. Designed for Machine-to-Machine (M2M) applications such as smart energy and building automation. Based on Request-Response model between end-points.

See lecture 7 (Basics of IoT Networking – Part III) @ 00:35

QUESTION 5:

Statement I – The messaging sub-layer of CoAP, is responsible for reliability and duplication of messages.

Statement II – The request/response sub-layer is responsible for communication.

Which of the above statement/statements is/are correct?

   a. Only Statement I
   b. Only Statement II
   c. Both Statement I and II
   d. Statement I Correct but Statement II Incorrect

Correct Answer: c.   Both Statement I and II

Detailed Solution: The messaging sub-layer of CoAP, is responsible for reliability and duplication of messages while the request/response sub-layer is responsible for communication.

See lecture 7 (Basics of IoT Networking – Part III) @ 04:19

QUESTION 6:

Which of the following is a messaging mode in CoAP?

   a. Append
   b. Substitute
   c. Attempt
   d. Separate

Correct Answer: d. Separate

Detailed Solution: CoAP has four messaging modes
   • Confirmable
   • Non-Confirmable
   • Piggyback
   • Separate

See lecture 7 (Basics of IoT Networking – Part III) @ 05:29

QUESTION 7:

Which of the following provides for the discovery of services residing locally or across a network?
   a. Internet
   b. SMQTT
   c. XMPP
   d. CoAP

Correct Answer: c. XMPP

Detailed Solution: XMPP provides for the discovery of services residing locally or across a network, and the availability information of these services.

See lecture 7 (Basics of IoT Networking – Part III) @ 12:03

QUESTION 8:

AMQP is a protocol of which layer?

   a. Transport Layer
   b. Application Layer
   c. Network Layer
   d. Session Layer

Correct Answer: b. Application Layer

Detailed Solution: AMQP is an Application Layer protocol.

See lecture 8 (Basics of IoT Networking – Part IV) @ 01:41

QUESTION 9:

Which of the following is NOT a feature of the AMQP protocol?

   a. Closed Standard
   b. Security
   c. Reliability
   d. Routing

Correct Answer: a. Closed Standard

Detailed Solution: Features of AMQP are –
   • Security
   • Reliability
   • Interoperability
   • Routing
   • Queuing
   • Open Standard

See lecture 8 (Basics of IoT Networking – Part IV) @ 04:54

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QUESTION 10:

There are a total of _____ number of AMQP frame types are defined that are used to

initiate, control, and tear down the transfer of messages between two peers.

    a. Seven
    b. Eight
    c. Nine
    d. None of these

Correct Answer: c. Nine

Detailed Solution: Nine AMQP frame types are defined that are used to initiate, control, and tear down the transfer of messages between two peers.

See lecture 8 (Basics of IoT Networking – Part IV) @ 06:34

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QUESTION 11:

The function/functions of the Queue component of the AMQP protocol is/are -

    a. Receive messages and route them to queues
    b. Separate queues for separate business process
    c. Consumer receive messages from queues
    d. Both (b) and (c)

Correct Answer: d. Both (b) and (c)

Detailed Solution: The functions of the Queue components are to –
- Separate queues for separate business process
- Consumer receive messages from queues

See lecture 8 (Basics of IoT Networking – Part IV) @ 08:05

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QUESTION 12:

Which of the following statements is/are false?

Statement – I: IEEE 802.15.4 is a well-known standard for low data-rate Wireless Personal Area Network (WPAN).
Statement – II: IEEE 802.15.4 standard operates in the ISM band.

   a. Statement - II
   b. Statement - I
   c. Both Statement I and II
   d. None of these

Correct Answer: d. None of these

Detailed Solution: IEEE 802.15.4 is a well known standard for low data-rate Wireless Personal Area Network (WPAN). It operates in the ISM band.

See lecture 9 (Connectivity Technologies – Part-I) @ 03:00

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QUESTION 13:

The IEEE 802.15.4 establishes functionalities in which layers?

   a. Application and Session Layers
   b. Transport and Data Link Layers
   c. Network and Session Layers
   d. Physical and Data Link Layers

Correct Answer: d. Physical and Data Link Layers

Detailed Solution: The IEEE 802.15.4 is useful for establishing functionalities in the Physical and Data Link Layers.

See lecture 9 (Connectivity Technologies – Part-I) @ 17:27

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QUESTION 14:

Which is not a purpose of the ZigBee Device Object (ZDO)?

a. Device Management
b. Interfacing and Control Services
c. Security
d. Policies

Correct Answer: b. Interfacing and Control Services

Detailed Solution: The functions of the ZigBee Device Object (ZDO) are –
- Device Management
- Security
- Policies

See lecture 9 (Connectivity Technologies – Part-I) @ 18:06

QUESTION 15:

State whether the following statement is True or False.

Statement: Similar to traditional barcodes and QR codes, RFID tag data cannot be read outside the line-of-sight.

a. False
b. True

Correct Answer: a. False

Detailed Solution: As compared to traditional barcodes and QR codes, RFID tag data can be read outside the line-of-sight.

See lecture 10 (Connectivity Technologies – Part-II) @ 17:33

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