1. Which of the following is/are not a type of transducer?
    a. Speaker
    b. Microphone
    c. Solar panel
    d. Connecting wire

Answer: d

Justification: Refer to Week 1, lecture 1, slide 3.

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2. “Sensor is sensitive to only the measured property. It is insensitive to any other property besides what it is designed to detect.” True or false?
    a. True
    b. False

Answer: a

Justification: Refer to pages 98-99 from the book Introduction to Internet of Things.

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3. “_____ sensors produce an output proportional to the magnitude of the quantity being measured.” Fill in the blank.
    a. Scalar
    b. Vector
    c. Analog
    d. Digital

Answer: a

Justification: Refer to pages 100-101 from the book Introduction to Internet of Things and slides 14-19 from Week 1, lecture 1.

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4. What is the resolution of a sensor?
    a. It provides the difference between the measured value and the actual value of the sensing parameter.
    b. It provides the smallest change in the input that a sensor is capable of sensing.
    c. It provides the incremental changes produced in response by the system.
    d. All of the above.

Answer: b

Justification: Refer to slides 7-9 from lecture 1 of week 1.

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5. _____ is a part of the system that deals with the control actions required in the system.
    a. Sensor
    b. Actuator
    c. Manager
    d. None of the above

Answer: b

Justification: Refer to slide 21 from lecture 1 of week 1.

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6. What is the function of an electric rotary actuator?
    a. Converts mechanical energy into electrical energy
    b. Converts analog signals to digital signals
    c. Converts electrical energy into rotational motion
    d. All of the above

Answer: c

Justification: Refer to slide 25 from lecture 1 of week 1.

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7. Which of the following communication standards provide a framework for WPAN ?
    a. 6LowPan
    b. IEEE 802.15.4
    c. Z- wave
    d. Wireless HART

Answer: b

Justification: Refer to slide 4 from lecture 2 of week 1.

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8. The IEEE 802.15.4 standard uses DSSS scheme for data transmission. What does DSSS stand for?
    a. Double Spread Spectrum Scheme
    b. Direct-Sequence Spread Spectrum
    c. Discrete-Sequence Spread Spectrum
    d. Dynamic-Sequence Spread Spectrum

Answer: b

Justification: Refer to slide 5 from lecture 2 of week 1.

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9. When does Zigbee uses the OQPSK modulation scheme?
    a. When the operating frequency is less the 2.4 GHz
    b. When the operating frequency is more than 2.4 GHz
    c. When the operating frequency is 2.4 GHz
    d. All of the above

Answer: c

Justification: Refer to slide 12 from lecture 2 of week 1.

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10. Which of the following statements is true about the end devices in Zigbee protocol?
    a. End devices do not participate in data routing
    b. End device manages and controls the network
    c. End devices contribute in data relaying
    d. There can be only one end device in a Zigbee network

Answer: a

Justification: Refer to slide 14 from lecture 2 of week 1.

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11. What is the maximum packet size supported by IEEE 802.15.4 standard?
    a. 1280 bytes
    b. 125 bytes
    c. 127 bytes
    d. 256 bytes

Answer: c

Justification: Refer to slide 18 from lecture 2 of week 1.

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12. Z-wave uses _____ network topology. Fill in the blank.
    a. Bus
    b. Star
    c. Tree
    d. Mesh

Answer: d

Justification: Refer to slide 3 from lecture 3 of week 1.

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13. Passive tags in RFID are powered by their own power source. True or False?

a. True
b. False

Answer: b

Justification: Refer to slide 17 from lecture 3 of week 1.

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14. What is the full form of IETF in the context of the Internet?

a. Internet Enforced Task Force
b. Internet for Engineers Task Force
c. Internet Engineers Task Force
d. Internet Engineering Task Force

Answer: d

Justification: Refer to slide 5 from lecture 4 of week 1.

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15. MQTT works on _____framework on top of TCP/IP. Fill in the blank.

a. Push/Pull
b. Publish/Subscribe
c. Client/Server
d. None of the above

Answer: b

Justification: Refer to slide 4 from lecture 5 of week 1.