Connecting Things Chapter 1 Quiz

Due Dec 6, 2019 at 11:59pm **Points** 38 **Questions** 19
Available Dec 6, 2019 at 12am - Dec 6, 2019 at 11:59pm about 24 hours
Time Limit 60 Minutes **Allowed Attempts** 2

Instructions

This quiz covers the content presented in **Connecting Things 2.0 Chapter 1**. This quiz is designed for practice. You will be allowed multiple attempts and the grade does not appear in the gradebook.

There are multiple task types that may be available in this quiz. In some task types, partial credit scoring is allowed to foster learning. Please note that on tasks with multiple answers, points can be deducted for selecting incorrect options.

Short answer or essay questions may appear on some of the quizzes. These questions are designed for self-assessment and reflection and are not scored. Sample answers are provided for self-evaluation.

At the completion of the quiz, some items may display feedback. The feedback will reference the source of the content. Example: "Refer to curriculum topic: 1.2.3" - indicates that the source of the material for this task is located in chapter 1, section 2, topic 3.

Form: 32640

This quiz was locked Dec 6, 2019 at 11:59pm.

Attempt History

	Attempt	Time	Score
KEPT	Attempt 2	10 minutes	38 out of 38
LATEST	Attempt 2	10 minutes	38 out of 38
	Attempt 1	31 minutes	36 out of 38

Score for this attempt: **38** out of 38
Submitted Dec 6, 2019 at 6:29pm
This attempt took 10 minutes.

Question 1 — 2 / 2 pts

What are two advantages of using fiber optic cables compared with copper cables? (Choose two.)

Correct!
- [x] They support higher bandwidth.

Correct!
- [x] They provide connections over longer distances.
- [ ] They provide shared media access for a single link.
- [ ] They use electromagnetic signals to transmit data.
- [ ] They are less expensive.

Refer to curriculum topic: 1.2.2
Data can travel longer distances on fiber optic cables, and the cables can support higher bandwidths than can copper cables. Using fiber optic cables, the sending device transmits the binary bits as light pulses using LEDs or lasers. The receiving device uses photodiodes to detect the light pulses and convert them to voltages. Fiber optic links are typical point-to-point links and they are more expensive than copper cables.

Question 2

2 / 2 pts

What are two benefits of using a layered model for network protocol development? (Choose two.)

- [ ] promoting acquisition of networking products
- [ ] enhancing capabilities of networking products and services

Correct!
- [x] preventing technology changes in one layer from affecting other layers

Correct!
- [x] providing a common language to describe networking functions

reducing competition among different manufacturers

Refer to curriculum topic: 1.2.1
There are many benefits of using a layered model to explain network protocols and operations, including: (1) assisting in protocol design; (2) fostering competition because products from different vendors can work together; (3) preventing technology or capability changes in one layer from affecting other layers; and (4) providing a common language to describe networking functions and capabilities.

Question 3

2 / 2 pts

Match the layers of the TCP/IP model to their function. (Not all options are used.)

Correct! **application** — represents data to the use

Correct! **transport** — supports communication

Correct! **internet** — determines the best path t

Correct! **network access** — controls hardware device

Other Incorrect Match Options:

- manages virtual server environment

Refer to curriculum topic: 1.2.1

Question 4

2 / 2 pts

What is the term for the extension of the existing Internet structure to billions of connected devices?

- M2M
- digitization

Correct!

- IoT
- SCADA

Refer to curriculum topic: 1.2.1
The Internet of Things (IoT) refers to the interconnection of billions of things, or "smart dust." SCADA refers to a type of IoT system applied to the industrial Internet. Digitization has several meanings. It can refer to the process of converting analog to digital, or it can refer to the process by which an organization modernizes by planning and ultimately building, a sophisticated and forward-thinking IT network ecosystem that will allow for greater connectivity, productivity, and security. Finally, M2M refers to communication from machine to machine.

Question 5

2 / 2 pts

Which level of the Internet of Things reference model describes data storage?

Correct!

- data accumulation
- edge computing
- physical devices and controllers

- data abstraction

Refer to curriculum topic: 1.2.1
The data accumulation level (Level 4) of the Internet of Things reference model describes data storage aspects of IoT.

Question 6

2 / 2 pts

What are three types of connections in an IoT system? (Choose three.)

Correct!
- [x] wires and circuitry associated with linking IoT components
- [ ] interconnection among cloud computing systems

Correct!
- [x] connection to power sources
- [ ] exclusive networking for IoT systems

Correct!
- [x] OSI Layer 2 and Layer 3 networking connections
- [ ] application protocols designed for IoT

Refer to curriculum topic: 1.2.2
There are multiple meanings of the word "connection" when describing IoT systems, including (1) devices that must be connected to some source of power, such as batteries or AC/DC power; (2) the fact that all IoT devices have circuitry interconnecting sensors, actuators, and controllers together; and (3) that IoT devices have networking links at Layer 2 and Layer 3 of the OSI model.

The IoT does not need unique and exclusive network or application connections.

Question 7

2 / 2 pts

What is embedded within a digital object, such as a photograph or email?

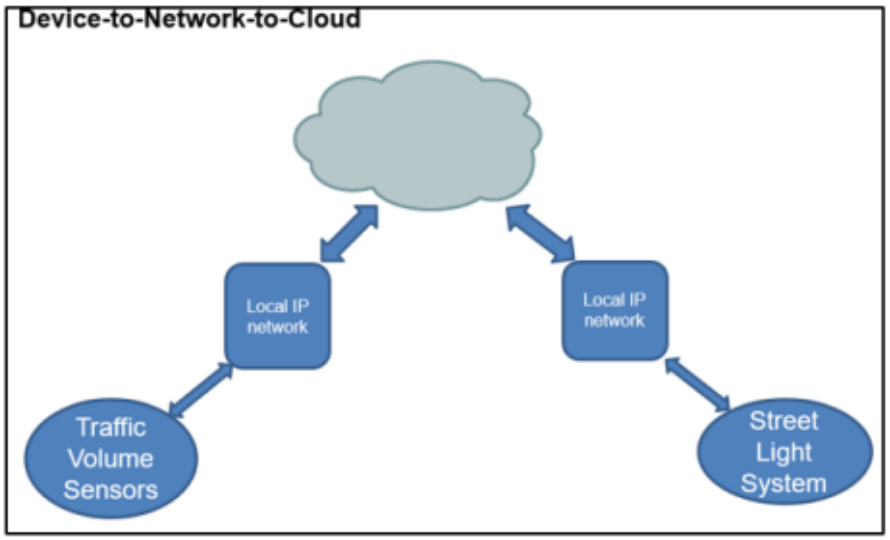
- feedback
- metadata
- sensor
- microcontroller

Correct!

Refer to curriculum topic: 1.2.3
Metadata is data about data. A picture can contain GPS location and timestamp data embedded within it. An email can include a point of origin and all SMTP servers along the delivery pathway.

Question 8

2 / 2 pts



To answer the question, you do not need to consider the exhibit. Which type of IoT device operates in the device-to-network-to-cloud communication model?

- Bluetooth heart-rate sensor
- smart watch
- Zigbee gas sensor

Correct!

- [x] IP camera

Refer to curriculum topic: 1.2.1
Some smart devices, such as watches or fitness trackers, are not IP-enabled and cannot connect directly to the fog or cloud. These devices use application software operating on a local gateway device as an intermediary between the device and the cloud service.

Question 9

2 / 2 pts

What are three components of a control system? (Choose three.)

Correct!

- [x] plant

Correct!

- [x] controller

Correct!

- [x] sensor

- [ ] wearable device
- [ ] thermostat

Refer to curriculum topic: 1.1.3
The basic building blocks of a control system are sensors, controllers, and plants. Controllers monitor environmental conditions using sensors. In response to environmental conditions, the controller can communicate with a plant that can perform a variety of actions.

Question 10

2 / 2 pts

True or False?
The purpose of the Cisco IoT System is to create complexity in IoT system implementation and management.

- true
- false

Correct!

Refer to curriculum topic: 1.1.1
The Cisco IoT System reduces the complexities of digitization for industry. IoT implementation and management are two components of the digitization process.

Question 11

2 / 2 pts

Which action is the result of negative feedback?

Correct!

- A thermostat shuts down an air conditioning unit when the temperature reaches the set temperature.

A flashlight is used at night by a camper.

An unexpected chemical reaction in a chemical plant causes an explosion.

A strong feedback noise is heard in an auditorium during a rehearsal.

Refer to curriculum topic: 1.1.3
Negative feedback tends to move a system toward stabilization and equilibrium. A thermostat monitors and maintains room temperature in the summer by activating and deactivating an air conditioning unit. Chemical reactions that lead to explosions or unpleasant noises that are caused by audio signal feedback are examples of positive feedback. A flashlight used by a camper does not involve system feedback.

Question 12

2 / 2 pts

What type of IoT device is the Raspberry Pi?

sensor

Correct!

controller

actuator

router

Refer to curriculum topic: 1.1.2
The Raspberry Pi is a powerful controller. It can collect and process a large amount of data. It can also connect to the network to send information to network connected devices.

Question 13

2 / 2 pts

Fill in the blank.

In process control theory, a controlled process uses inputs to execute the required actions in order to achieve the desired output.

Answer 1:

Correct!

controlled process

orrect Answer

process

Refer to curriculum topic: 1.1.3
A process uses inputs to execute the required actions to achieve the desired output. The output of a system is the status or state of a system. The input contains instructions for actions in order to achieve the desired output.

Question 14

2 / 2 pts

What are three machine-intelligible message structures that group strings of bits for network transmission? (Choose three.)

Correct!

- [x] frames
- [ ] pixels

Correct!

- [x] packets

Correct!

- [x] segments
- [ ] waveforms

ASCII codes

Refer to curriculum topic: 1.2.2
Long stings of bits must be transmitted in groups. These machine-intelligible message structures are frames, packets, and segments. ASCII codes are groups of bits that represent characters and text. Pixels are tiny parts of a larger image, and waveforms are depictions of various kinds of signals, including sounds.

Question 15

2 / 2 pts

What is an example of a closed-loop control system?

Correct!

- a thermostat
- a clock
- a manual garage door opener
- a traditional dishwasher

Refer to curriculum topic: 1.1.3
Closed-loop control systems use feedback. A thermostat is constantly monitoring environmental temperature and uses the temperature to decide whether to activate a climate control system. The other options are examples of open-loop control systems.

Question 16

2 / 2 pts

Match the functions with the IoT device.

Correct! **adds intelligence to things** — controller

Correct! **monitors physical properties of the environment** — sensor

Correct! **improves IoT network performance** — none of these

Correct! **performs an action** — actuator

Refer to curriculum topic: 1.1.2

Question 17

2 / 2 pts

What are two factors that impact network security in the IoT? (Choose two.)

- [ ] the number of bits used for encryption
- [ ] the lack of Internet standards
- [ ] the amount of space between sensors
- [x] the number of devices

Correct!

- [x] the nontraditional location of devices

Correct!

Refer to curriculum topic: 1.2.3
Network security is a challenge in the IoT. Some of the factors that impact security are as follows:

- Number of devices
- Nontraditional location of devices, which makes physical security a challenge
- Type and quantity of gathered data
- Lack of device upgradability

Question 18

2 / 2 pts

What are three alternative methods of powering IoT systems deployed in remote locations? (Choose three.)

- [ ] PoE
- [ ] AC line power
- [x] temperature differences — Correct!
- [x] solar — Correct!
- [x] vibration — Correct!

Refer to curriculum topic: 1.2.2
As IoT devices are deployed in areas without a direct connection to a power grid, alternative methods of powering them may be used. These alternative methods of providing power for IoT devices havest energy from the sun, temperatature difference, and vibration.

Question 19

2 / 2 pts

To answer the question, you do not need to consider the exhibit. Which type of media would use electromagnetic signals to communicate between IoT devices?

- multimode fiber
- copper

Correct!

- wireless
- single-mode fiber

Refer to curriculum topic: 1.2.2
Wireless media are commonly used to connect previously unconnected devices to a network. Wireless connectivity methods include the use of electromagnetic signals, radio and microwave frequencies, and satellite links.

Quiz Score: **38** out of 38

Connecting Things Chapter 2 Quiz

Due Dec 6, 2019 at 11:59pm **Points** 40 **Questions** 20
Available Dec 6, 2019 at 12am - Dec 6, 2019 at 11:59pm 1 day
Time Limit 60 Minutes **Allowed Attempts** 2

Instructions

This quiz covers the content presented in **Connecting Things 2.0 Chapter 2**. This quiz is designed for practice. You will be allowed multiple attempts and the grade does not appear in the gradebook.

There are multiple task types that may be available in this quiz. In some task types, partial credit scoring is allowed to foster learning. Please note that on tasks with multiple answers, points can be deducted for selecting incorrect options.

Short answer or essay questions may appear on some of the quizzes. These questions are designed for self-assessment and reflection and are not scored. Sample answers are provided for self-evaluation.

At the completion of the quiz, some items may display feedback. The feedback will reference the source of the content. Example: "Refer to curriculum topic: 1.2.3" - indicates that the source of the material for this task is located in chapter 1, section 2, topic 3.

Form: 32641

This quiz was locked Dec 6, 2019 at 11:59pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	18 minutes	40 out of 40

ⓘ Answers will be shown after your last attempt

Score for this attempt: **40** out of 40
Submitted Dec 6, 2019 at 6:48pm
This attempt took 18 minutes.

Question 1 — 2 / 2 pts

What type of electrical circuit stops working when a single electronic component is damaged or removed?

- linear
- parallel
- nonlinear
- series

Refer to curriculum topic: 2.1.2
In a series circuit, electricity will only have a single path to follow and must transverse all components. If any of these components fail and block the flow of electricity, the entire circuit stops working.

Question 2

2 / 2 pts

What functions do sensors perform in the digitized world?

- reducing current flow through a circuit
- detecting events in the physical environment
- creating physical movement
- performing physical actions

Refer to curriculum topic: 2.2.3
Sensors take the measurement of events in the physical environment as input and transform the measurement into electrical or optical output.

Question 3

2 / 2 pts

What type of device is able to create physical movement?

- sensor
- diode
- actuator
- resistor

Refer to curriculum topic: 2.2.4
Actuators are a type of device that is used to produce physical movement.

Question 4

2 / 2 pts

What type of circuit provides multiple paths for current flow so that the failure of a single component will not affect the operation of the entire circuit?

- nonlinear
- series
- parallel

linear

Refer to curriculum topic: 2.1.2
A parallel circuit provides connected components with their own share of current.

Question 5

2 / 2 pts

Match the definitions with the appropriate steps of the design phase of a printed circuit board.

finding possible vendors and material costs	research
the initial idea	concept
symbolic representations of the circuit and components	circuit design

Refer to curriculum topic: 2.1.3

Question 6

2 / 2 pts

What is direct current?

the type of electric current in which the current flow periodically reverses direction

the type of current that is represented by a sine wave

the type of current that is produced by batteries, computer power supplies, and solar cells

the type of current that is supplied to the home by power utilities

Refer to curriculum topic: 2.1.2
Direct current is the flow of electricity that does not change direction. Direct current is used by computers and other digital devices. It is created by batteries, DC power supplies, and solar panels. Alternating current is the flow of electricity that reverses direction periodically. Because of this, its representation is a sine wave. It is delivered to homes and businesses by power utilities.

Question 7

2 / 2 pts

Match the unit of measurement with the associated electronic concept. (Not all options are used.)

watt	power
ampere	current
volt	voltage

ohm resistance

Refer to curriculum topic: 2.1.1

Question 8

2 / 2 pts

What is another term for an electrically controlled mechanical switch?

- actuator
- relay
- sensor
- microcontroller

Refer to curriculum topic: 2.2.4
Another term for an electrically controlled switch is a relay.

Question 9

2 / 2 pts

Which three items can serve as inputs to a microcontroller unit such as an Arduino? (Choose three.)

- a relay
- a sensor

- [x] a pushbutton
- [x] a Twitter message
- [ ] an LED
- [ ] an actuator

Refer to curriculum topic: 2.2.1
Microcontroller units, such as the Arduino, can be set up to monitor and respond to events. The events serve as inputs to the microcontroller. Examples of these events are a change in the amount of light detected by a light sensor, the press of a pushbutton, or receiving an Internet message, such as a tweet from Twitter.

Question 10

2 / 2 pts

Match the term to its definition.

voltage (V)	electrical potential differe ▾
resistance (R)	opposition to flow of char ▾
current (I)	flow of charged particles; ▾
impedance (Z)	opposition to changes in v ▾
power (P)	electrical energy per unit ▾

Refer to curriculum topic: 2.1.1

Question 11

2 / 2 pts

What is a feature of microcontrollers that makes them well-suited for use in the Internet of things?

- multiple processor cores
- large form factor
- low power requirements
- large data storage capacity

Refer to curriculum topic: 2.2.1
Microcontrollers are small form factor, low power computer platforms that are well suited to connect things such as sensors, motors, and LEDs.

Question 12

2 / 2 pts

Which tool has the ability to measure the signals that travel from sensors to microcontrollers as a function of time?

- oscilloscope
- multimeter
- wattmeter

clamp meter

Refer to curriculum topic: 2.1.2
The oscilloscope assists in visualizing and measuring voltage as a function of time in an output of a waveform. The oscilloscope is used to monitor and measure the signals that travel from sensors to microcontrollers and from single board computers back to actuators.

Question 13

2 / 2 pts

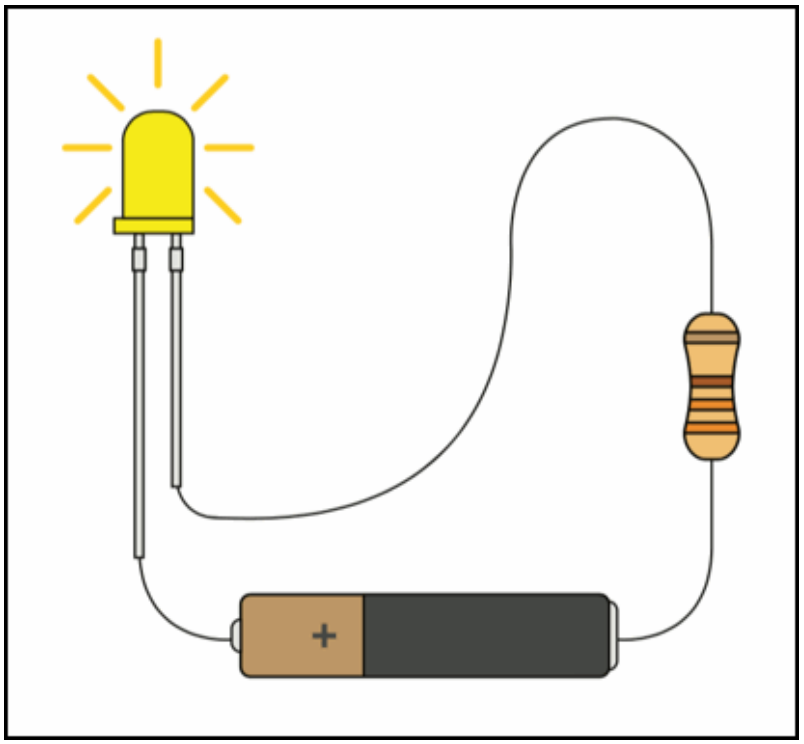
Which tool measures the ratio of voltage to current across an object?

- wattmeter
- multimeter
- clamp meter
- oscilloscope

Refer to curriculum topic: 2.1.1
A multimeter can be utilized to measure multiple electrical factors including voltage, current, and resistance. Resistance is the opposition to the flow of charged particles and is a ratio of voltage to current.

Question 14

2 / 2 pts



Fill in the blank.
Refer to the exhibit. The graphic shows an example of a simple

circuit

.

Answer 1:

circuit

Refer to curriculum topic: 2.2.2
A circuit includes a continuous loop and a power source for the flow of electricity. Other devices, such as a resistor, can be placed into the path of current flow to perform other actions.

Question 15

2 / 2 pts

What file extension is used when saving sketches written with the Arduino IDE?

- .exe
- .doc
- .ino
- .txt

Refer to curriculum topic: 2.2.2
The file extension .ino is used when saving sketches that are written using the Arduino IDE.

Question 16

2 / 2 pts

Refer to the exhibit. What is used to limit the amount of current that flows through the circuit?

- resistor
- LED
- capacitor
- inductor

Refer to curriculum topic: 2.1.1
A resistor is placed in a circuit to limit the amount of current that flows through the circuit.

Question 17

2 / 2 pts

What type of component has no effect on gain or control over voltage or current?

- (•) passive
- ( ) nonlinear
- ( ) linear
- ( ) active

Refer to curriculum topic: 2.1.2
A passive component provides no gain or control over voltage or current. These are two-terminal components that include resistors, capacitors, inductors and memristors.

Question 18

2 / 2 pts

How are electronic sensors used in digitizing the natural world?

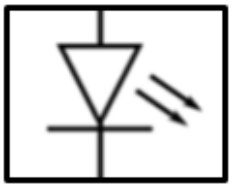
- ( ) They measure electrical signals sent from a specific computer port.
- ( ) They measure voltage as a function of time and output a graph.

- (selected) They measure a physical event and translate it into electrical signals.
- They convert digital events into analog representations.

Refer to curriculum topic: 2.1.1
Electronic sensors are used to measure a physical event and translate it into an electrical signal. This digital signal can be received by a computer that is programmed to utilize this input.

Question 19

2 / 2 pts



Refer to the exhibit. What type of component is represented if it appeared on an electronic schematic?

- inductor
- resistor
- (selected) LED
- capacitor

Refer to curriculum topic: 2.1.1
A light-emitting diode (LED) is symbolized by a triangle with a line segment on one end and two arrows pointing outward. This is a symbol used in schematic diagrams of electrical circuits

Question 20

2 / 2 pts

What software package is commonly used to create programs for the Arduino?

- (•) Arduino IDE
- ( ) RedBoard
- ( ) Packet Tracer
- ( ) SparkFun

Refer to curriculum topic: 2.2.2
The Arduino IDE is a free software package that can be downloaded from the Arduino web site. It includes software and drivers required to interact with the Arduino board.

Quiz Score: **40** out of 40

Connecting Things Chapter 3 Quiz

Due Dec 6, 2019 at 11:59pm **Points** 40 **Questions** 20
Available Dec 6, 2019 at 12am - Dec 6, 2019 at 11:59pm 1 day
Time Limit 60 Minutes **Allowed Attempts** 2

Instructions

This quiz covers the content presented in **Connecting Things 2.0 Chapter 3**. This quiz is designed for practice. You will be allowed multiple attempts and the grade does not appear in the gradebook.

There are multiple task types that may be available in this quiz. In some task types, partial credit scoring is allowed to foster learning. Please note that on tasks with multiple answers, points can be deducted for selecting incorrect options.

Short answer or essay questions may appear on some of the quizzes. These questions are designed for self-assessment and reflection and are not scored. Sample answers are provided for self-evaluation.

At the completion of the quiz, some items may display feedback. The feedback will reference the source of the content. Example: "Refer to curriculum topic: 1.2.3" - indicates that the source of the material for this task is located in chapter 1, section 2, topic 3.

Form: 32642

This quiz was locked Dec 6, 2019 at 11:59pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	19 minutes	40 out of 40

ⓘ Answers will be shown after your last attempt

Score for this attempt: **40** out of 40
Submitted Dec 6, 2019 at 7:09pm
This attempt took 19 minutes.

Question 1 — 2 / 2 pts

What elements are used to represent different programming structures in Blockly?

- colored lines and symbols
- flowcharts
- programming code pieces
- colored blocks

Refer to curriculum topic: 3.2.4
Blockly implements visual programming by assigning different programming structures to colored blocks. These blocks also contain slots and spaces to allow programmers to enter values required by the structure. Programming structures can be connected by dragging and attaching the appropriate blocks.

Question 2

2 / 2 pts

Which language is an example of a compiled programming language?

- PHP
- Javascript
- Python
- C

Refer to curriculum topic: 3.1.2
C is a compiled programming language, whereas Python, PHP, and Javascript are all interpreted languages.

Question 3

2 / 2 pts

What is needed for a computer program to communicate with another computer program made from a different vendor?

- (•) API
- ( ) operating system
- ( ) firmware
- ( ) device driver

Refer to curriculum topic: 3.1.3
An application programming interface (API) is a set of routines and software tools that facilitate communication between computer programs.

Question 4

2 / 2 pts

Which Linux shell command can be used to search a specific string of characters within a file?

- ( ) man
- ( ) cat

- [x] **grep**
- [ ] pwd

Refer to curriculum topic: 3.2.3
There are many CLI commands in Linux, including these:

- **grep** – used to search for specific strings of characters within a file or other commands outputs
- **pwd** – used to display the current directory
- **cat** – used to list the contents of a file
- **man** – used to display the documentation for a specific command

Question 5

2 / 2 pts

Which Python function is used for console output?

- [ ] for
- [ ] from
- [ ] return
- [x] **print**

Refer to curriculum topic: 3.2.5
The **print** command is used for console output. The command **for** is used for repetition logic**, from** is used for module importing, and **return** is a function definition.

Question 6

2 / 2 pts

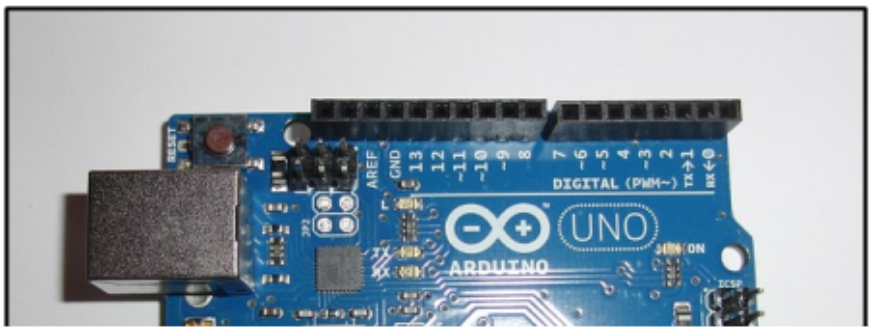
What is a method to secure the control plane of an IoT device?

- the encryption of user data
- restricting access to servers
- enforcement of authorized access to code
- verification of data integrity

Refer to curriculum topic: 3.1.3
Securing the control plane of an IoT device can be done by enforcing authorized access to code, removing any hard-coded debug access accounts, and keeping firmware upgraded.

Question 7

2 / 2 pts



To answer the question, you do not need the graphic. Why is it common to connect an Arduino board with a single board computer like the Raspberry Pi?

- (•) The Arduino has analog pins.
- ( ) The Raspberry Pi does not require software to interact with an Arduino.
- ( ) The Arduino is a full computer and the Raspberry Pi is not.
- ( ) The Raspberry Pi cannot process incoming digital signals.

Refer to curriculum topic: 3.2.6
Analog signals are generated by thermometers, light sensors, and air pressure sensors. A Raspberry Pi does not have analog pins and requires the use of another device to receive this data. An Arduino has analog pins and can then receive analog signals and data by connecting to a Raspberry Pi via USB.

Question 8

2 / 2 pts

A system administrator issues the command **ps** on a server that is running the Linux operating system. What is the purpose of this command?

- (•) to list the processes currently running in the system
- ( ) to process a new task
- ( ) to display the contents of the current directory
- ( ) to change file permissions

Refer to curriculum topic: 3.2.3
The Linux **ps** command is used to list the currently running processes in the system. If needed, this command can be instructed to display running processes initiated by the current user or other users.

Question 9

2 / 2 pts

What is the benefit of deploying a group of headless Pi IoT devices?

- The group of Pi IoT devices must be controlled by a single Pi device in the cloud.
- Each Pi IoT device is managed remotely on a network.
- The Pi IoT devices can connect to each other using Zigbee.
- A single monitor can be connected to the group of Pi IoT devices.

Refer to curriculum topic: 3.2.2
The term headless is used to describe servers that are only remotely operated. A Pi can be set up to be managed entirely over the network and can be operated without the need for a monitor, keyboard, or mouse.

Question 10

2 / 2 pts

What are two features related to Linux? (Choose two.)

- [ ] a code base managed by one organization
- [ ] an application for word processing
- [ ] an example of interpreted language
- [x] support by a community of programmers
- [x] open source

Refer to curriculum topic: 3.2.3
Linux is an open source operating system and maintained by a community of programmers. There are many distributions (or variations) of Linux and each distribution has its own code base maintained by an organization.

Question 11

2 / 2 pts

Fill in the blank.

A computer software is a set of ordered instructions created to accomplish a specific task.

Answer 1:

software

Refer to curriculum topic: 3.1.1
A computer program, also called code, is a set of ordered instructions created to accomplish a specific task.

Question 12

2 / 2 pts

What is a Raspberry Pi?

- an object-oriented programming language
- a small, low cost, single-board computer
- a Python function for conditional logic
- a cloud-based service for teaching IoT

Refer to curriculum topic: 3.2.1

Question 13

2 / 2 pts

What tool can be used on a Linux device to compare all installed software against a repository index, to download updates, and to install them automatically?

- package manager system
- improved C Shell (tcsh)
- Arduino
- Blockly

Refer to curriculum topic: 3.2.3
A package manager can be used to upgrade programs and the Linux operating system. Package managers allow users to compare installed software versions against a repository index and then download and automatically install all updated software programs.

Question 14

2 / 2 pts

What is an advantage of an executable program coded with an interpreted language compared with a compiled language?

- It does not rely on another program in order to execute.
- It runs faster.
- It stores as binary format.
- It is easier to maintain and troubleshoot.

Refer to curriculum topic: 3.1.2
A program coded with an interpreted language stays in human-readable text, which makes it easy to maintain and troubleshoot. However, it relies on another program, called the interpreter, to parse and execute the code. Because it requires interpretation during its execution, it runs slower than the same program coded by a compiled language.

Question 15

2 / 2 pts

True or False?
Programmers only work on desktop applications.

- false
- true

Refer to curriculum topic: 3.1.1
In the past, many programmers worked on desktop applications. The Internet and the IoT, however, have opened up many interesting new areas of work for programmers.

Question 16

2 / 2 pts

Which statement describes Blockly?

- It is a compiled language.
- It is graphic editing software for web design.
- It is a specific Linux distribution.
- It is a JavaScript based library for implementing visual programming.

Refer to curriculum topic: 3.2.4
Blockly is a JavaScript based library for implementing visual programming. By using a number of block types, it allows a user to create a program without entering any lines of code. It is not an example of a compiled language, nor a Linux distribution. Although it provides visual programming features, it is not considered a graphic editing software package.

Question 17

2 / 2 pts

Which Python command is an example of conditional logic?

- delay
- **if**
- def
- from

Refer to curriculum topic: 3.2.5
The commands **if** and **else** are used for conditional logic. The commands **for** and **while** are used for repetition logic, and **from** is for module importing.

Question 18

2 / 2 pts

Which Linux distribution is used to develop the Raspbian operating system for the Raspberry Pi?

- Red Hat
- Mint
- Ubuntu
- Debian
- Slackware

Refer to curriculum topic: 3.2.3
Raspbian, the operating system for Raspberry Pi, is a Debian Linux variation.

Question 19

2 / 2 pts

Match the Linux administrative command to the function it performs. (Not all options are used.)

cd	change the current direct
cp	copy a file or files from so
mv	move a file or files to a dif
rm	remove a file or files
mkdir	create a directory under t

Refer to curriculum topic: 3.2.3

Question 20

2 / 2 pts

A user is using Blockly to program a process to find the next 100 prime numbers after 2. Which block is best used for the task?

- PRIME block
- FOR block
- WHILE block
- IF-THEN block

Refer to curriculum topic: 3.2.4
FOR loop blocks are used to repeat the execution of a specific block of code for a specific number of times. It is best used if the number of repetitions is known. In this case, the repetition number is 100. The FOR block can execute 100 times, each time to find a prime number. After 100 prime numbers are found, the FOR block will stop the execution.

Quiz Score: **40** out of 40

Connecting Things Chapter 4 Quiz

Due Jan 24 at 12pm **Points** 38 **Questions** 19
Available Jan 24 at 7:30am - Jan 24 at 12pm about 5 hours **Time Limit** 60 Minutes

Instructions

This quiz covers the content presented in **Connecting Things 2.0 Chapter 4**. This quiz is designed for practice. You will be allowed multiple attempts and the grade does not appear in the gradebook.

There are multiple task types that may be available in this quiz. In some task types, partial credit scoring is allowed to foster learning. Please note that on tasks with multiple answers, points can be deducted for selecting incorrect options.

Short answer or essay questions may appear on some of the quizzes. These questions are designed for self-assessment and reflection and are not scored. Sample answers are provided for self-evaluation.

At the completion of the quiz, some items may display feedback. The feedback will reference the source of the content. Example: "Refer to curriculum topic: 1.2.3" - indicates that the source of the material for this task is located in chapter 1, section 2, topic 3.

Form: 32643

This quiz was locked Jan 24 at 12pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	16 minutes	38 out of 38

Score for this quiz: **38** out of 38
Submitted Jan 24 at 9:54am
This attempt took 16 minutes.

Question 1 — 2 / 2 pts

What is the role of routing on data networks?

Correct!

- ◉ to determine the best paths for packets through the network

to ensure availability of services and resources on the network

to provide a physical channel for packets to travel through the network

to provide an architecture for data exchange

Refer to curriculum topic: 4.1.1
On a network, packets must travel between source and destination along one of many paths. Routing is used on the network to calculate which path is the best path for packets to take.

Question 2

2 / 2 pts

Which statement is an accurate description of 4G and 5G wireless technologies?

Both 4G and 5G technologies use a low-energy, low-power, low-data rate for wireless personal-area networks.

They require a wireless WAN connection to power constricted devices.

Correct!

They are both cellular-based technologies for covering large geographic areas.

They both require a 2.4 GHz short-range radio frequency band for industrial, scientific, and medical applications.

Refer to curriculum topic: 4.1.2
4G and 5G are fourth and fifth generation cellular-based technologies for transferring data over large geographic areas. Both provide high bandwidth and are capable of supporting voice, mobile Internet access, video calling, and high-definition mobile TV.

Question 3

2 / 2 pts

What are three characteristics that distinguish big data from data? (Choose three.)

- [ ] how the data is collected
- [ ] where the data is stored
- [x] amount of data being transported and stored — Correct!
- [ ] who is authorized to access the data
- [x] type of data that is generated — Correct!
- [x] rate at which data is generated — Correct!

Refer to curriculum topic: 4.2.2
Big data is characterized by the three Vs of big data: volume, which is the amount of data generated; velocity, which is the rate at which data is generated; and variety, which is the type of data generated.

Question 4

2 / 2 pts

Which wireless technology can be used to provide a metropolitan area with up to 100 Mbps of bandwidth?

- Bluetooth
- ZigBee
- LoRaWAN

Correct!

- 5G

Refer to curriculum topic: 4.1.2
5G is a fifth generation cellular-based technology for transferring data over large geographic areas. 5G provides high bandwidth and is capable of data rates of 100 Mbps.

Question 5

2 / 2 pts

Which pillar of the Cisco IoT System allows data to be analyzed and managed at the location where it is generated?

Correct!

- fog computing
- application enhancement platform
- network connectivity
- data analytics

Refer to curriculum topic: 5.1.1
The Cisco IoT System consists of six pillars to describe foundational elements, (1) network connectivity, (2) fog computing, (3) security (cyber and physical), (4) data analytics, (5) management and automation, and (6) an application enablement platform. The fog computing pillar covers software and hardware that extends IoT applications to the network edge.

Question 6

2 / 2 pts

Fill in the blank.

A local area network is a network infrastructure that interconnects end devices in a limited area.

Answer 1:

Correct!

Local

orrect Answer

LAN

orrect Answer

Local area network

orrect Answer

local area

Refer to curriculum topic: 4.1.1
Local-area networks, or LANs, are geographically small, usually limited to a building, home, or campus, and administrated by a single organization or individual.

Question 7

2 / 2 pts

Which cloud service provides an app development platform and a backend service for apps?

- Zapier
- IFTTT
- ZigBee

Correct!

- Built.io

Refer to curriculum topic: 4.2.1
Built.io is a cloud service that is an app development program and is a useful resource for IoT systems that require a mobile app.

Question 8

2 / 2 pts

Fill in the blank.
The three Vs that distinguish data from big data are velocity, volume, and variety .

Answer 1:

Correct!

variety

Refer to curriculum topic: 4.2.2
The three Vs that distinguish data from big data are velocity, volume, and variety. Velocity is the rate at which data is generated. Volume is the amount of data transported and stored. Variety is the various types of data generated.

Question 9

2 / 2 pts

Match the network component category with the description.

Correct! **end devices** — source or destination of a

Correct! **intermediate devices** — determine best path for p

Correct! **media** — physical channel to carry

Correct! **services** — network applications

Refer to curriculum topic: 4.1.1

Question 10

2 / 2 pts

Match the wireless technology with the description.

Correct! **ZigBee** — popular in IoT application

Correct! **4G/5G** — cellular-based technology

Correct! **LoRaWAN** — uses a gateway to relay me

Refer to curriculum topic: 4.1.2

Question 11

2 / 2 pts

What are rules governing communication between network devices?

- processes
- protocols

Correct!

- services
- architectures

Refer to curriculum topic: 4.1.1
Before devices on a network can communicate to each other, they must agree on a common set of communication rules. These rules are called protocols.

Question 12

2 / 2 pts

Fill in the blank.

A wide area network is usually administered by multiple service providers.

Answer 1:

Correct!

wide

orrect Answer

WAN

orrect Answer wide area network

orrect Answer wide area

Refer to curriculum topic: 4.1.1
Wide-area networks, or WANs, are characterized by a large geographic scope and that they are administered by multiple service providers. WANs do not connect individual end devices together, but connect networks to the Internet.

Question 13

2 / 2 pts

What is the goal of fog computing?

- to send data immediately to the cloud for secure storage
- to analyze data as close to the source as possible

Correct!

- to store all data on a single server for processing
- to permanently store data on the local device

Refer to curriculum topic: 4.2.1
The fog computing model involves real-time analysis of data as close to where it is created as possible.

Question 14

2 / 2 pts

Which type of payment model is typically used to purchase cloud services?

calculation based on bandwidth

lump-sum payment in advance

annual subscription fee

Correct!

pay-as-you-go system

Refer to curriculum topic: 4.2.1
Cloud services are usually provided as a pay-as-you-go service much like a utility.

Question 15

2 / 2 pts

What measure should be taken to secure IoT devices?

Correct!

keep firmware updated

disconnect from the Internet

implement the security through obscurity model

install self-encrypting hard drives

Refer to curriculum topic: 4.2.4
IoT devices are typically too small and inexpensive to run complex security algorithms. This makes the devices vulnerable to security threats. To mitigate these threats, the firmware on the devices should be upgraded to the latest version.

Question 16

2 / 2 pts

What is data in motion?

- data transferred from an IoT device to the cloud
- data generated by an IoT device that is moving
- data stored in mobile devices
- Correct! value extracted from data while it is being generated

Refer to curriculum topic: 4.2.2
The term data in motion refers to the process of extracting value from data while it is being generated. It is considered in motion because it may or may not eventually be stored.

Question 17

2 / 2 pts

Match the type of media with the transmission technology.

Correct! **copper wires** — electrical impulses

Correct! **fiber optic cable** — pulses of light

Correct! **wireless** — radio waves

Other Incorrect Match Options:

- sound waves

Refer to curriculum topic: 4.1.1

Question 18

2 / 2 pts

What are two protocols developed by the Wi-Fi Alliance to secure wireless networks? (Choose two.)

Correct!

- [x] WPA

Correct!

- [x] WPA2
- [ ] IPsec
- [ ] 802.1x
- [ ] LoRaWAN

Refer to curriculum topic: 4.1.2
Wireless communications are inherently insecure and require encryption to protect the data being transmitted. The Wi-Fi Alliance developed WPA and WPA2 as protocols to secure wireless networks. WPA is the older of the two protocols and considered vulnerable to hacking attacks, and therefore WPA2 is recommended.

Question 19

2 / 2 pts

Which wireless technology has low-power and data rate requirements making it popular in home automation applications?

- [ ] LoRaWAN

Correct!

- (•) ZigBee
- ( ) 5G
- ( ) Wi-Fi

Refer to curriculum topic: 4.1.2
ZigBee is an IEEE 802.15.4 wireless standard designed for creating personal-area networks. Low energy, power, and data rate requirements make Zigbee a popular protocol for connecting home automation devices.

Quiz Score: **38** out of 38

Connecting Things Chapter 5 Quiz

Due Jan 24 at 12pm **Points** 38 **Questions** 19
Available Jan 24 at 7:30am - Jan 24 at 12pm about 5 hours **Time Limit** 60 Minutes

Instructions

This quiz covers the content presented in **Connecting Things 2.0 Chapter 5**. This quiz is designed for practice. You will be allowed multiple attempts and the grade does not appear in the gradebook.

There are multiple task types that may be available in this quiz. In some task types, partial credit scoring is allowed to foster learning. Please note that on tasks with multiple answers, points can be deducted for selecting incorrect options.

Short answer or essay questions may appear on some of the quizzes. These questions are designed for self-assessment and reflection and are not scored. Sample answers are provided for self-evaluation.

At the completion of the quiz, some items may display feedback. The feedback will reference the source of the content. Example: "Refer to curriculum topic: 1.2.3" - indicates that the source of the material for this task is located in chapter 1, section 2, topic 3.

Form: 32644

This quiz was locked Jan 24 at 12pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	15 minutes	36 out of 38

Score for this quiz: **36** out of 38
Submitted Jan 24 at 10:11am
This attempt took 15 minutes.

Question 1 — 2 / 2 pts

Which statement describes the term *Industrial Internet*?

Correct!

- (•) the integration of complex physical machinery with networked sensors and software
- ( ) Internet infrastructure components
- ( ) software and hardware that extends IoT applications to the network edge
- ( ) the platform that allows cloud-based application development

Refer to curriculum topic: 5.2.1
The Industrial Internet is still new and is a term that refers to the integration of complex physical machinery with networked sensors and software. These sensors track how long equipment has been in service, and provide data related to parts performance, output levels, and physical environment.

Question 2

2 / 2 pts

Which Cisco healthcare provider management solution enables experts to plan, build, and manage a network that meets clinical, business, and compliance needs?

- ( ) Cisco Healthcare Intelligent Contact Center

Correct!

- (•) Cisco Services for Connected Health
- ( ) Cisco Medical-Grade Network
- ( ) Digital Media Suite for healthcare

Refer to curriculum topic: 5.3.1
Cisco works with the healthcare industry to provide solutions to help them deliver better care and operation management. The Cisco Services for Connected Health solution enables experts to plan, build, and manage a network that meets clinical, business, and compliance needs.

Question 3

2 / 2 pts

Which solution of Cisco Smart+Connected Communities provides a standards-based system to help reduce city energy consumption and improve citizen vehicle compliance?

- Smart+Connected Wi-Fi
- Smart+Connected Parking and Traffic
- Smart+Connected Operations Center
- Smart+Connected Lighting

Correct!

Refer to curriculum topic: 5.3.2
Cisco has developed Cisco Smart+Connected Communities to bring a holistic approach for communities around the world. The network is the foundation for managed city and business services. One of its solutions, Smart+Connected Lighting, is a standards-based system for gathering a wide variety of data from the environment. It can drastically reduce city energy consumption and improve citizen vehicle compliance.

Question 4

2 / 2 pts

Which Cisco smart grid solution works with utilities to plan and design reliable and highly secure network architectures?

- Transmission and Substation
- Field Area Network
- GridBlocks Architecture
- Grid Operations

Correct!

- Connected Grid Services

Refer to curriculum topic: 5.3.3
Cisco provides and supports many smart grid solutions. One of them, Connected Grid Services, works with utilities to plan and design reliable, highly secure network architectures.

Question 5

2 / 2 pts

Which component of the Cisco Smart+Connected Wi-Fi solution provides location-based services to help city planners acquire near real-time data?

- city commerce

Correct!

- city services
- business services
- citizen services

Refer to curriculum topic: 5.3.2
The Cisco Smart+Connected Wi-Fi network infrastructure connects people, data, devices, processes, and city services. A value proposition provided by the Smart+Connected Wi-Fi is city services that provide location-based services to help city planners acquire near real-time data.

Question 6

2 / 2 pts

Match the Cisco care-at-a-distance solution components with the functions. (Not all options are used.)

Correct!

Cisco Extended Care — facilitates remote patient ▾

Correct!

Cisco WebEx for Healthcare — facilitates remote collabo ▾

Correct!

Cisco TelePresence for Healthcare — links people globally for ti ▾

Other Incorrect Match Options:

- equips call center agents to proactively help patients

Refer to curriculum topic: 5.3.1

Question 7

2 / 2 pts

What are three of the six core components in the Cisco IoT system? (Choose three.)

- [ ] robot guides
- [ ] wearable technologies

Correct!

- [x] fog computing
- [ ] smart bandages

Correct!

- [x] data analytics

Correct!

- [x] cyber and physical security

Refer to curriculum topic: 5.1.1
Core components of the Cisco IoT System are network connectivity, fog computing, data analytics, cyber and physical security, management and automation, and the Application Enablement Platform. Wearable technologies, robotic guides, and smart bandages are all examples of things that could connect to the Cisco IoT System.

Question 8

2 / 2 pts

Which group of organizations is an example of vertical industries suitable for a common technology solution?

- ( ) tool manufacturers, food process plants, book publishers
- ( ) car manufacturers, universities, insurance companies
- ( ) restaurants, car dealers, power plants

Correct!

- (•) pharmaceutical companies, hospitals, lab facilities

Refer to curriculum topic: 5.2.1
Technology solutions suitable for a vertical industry should meet specialized needs for companies with products for a set of customers.

Question 9

2 / 2 pts

What trend is a major motivation for the development of Smart+Connected Cities systems?

- Greenhouse gases are causing global warming.
- Excess energy is wasted because of poor power distribution.
- Healthcare costs continue to rise.

Correct!

- More people are moving into cities.
- Cities need to connect with one another to share problems and solutions.

Refer to curriculum topic: 5.3.2
As more people move from the country to the city, it becomes increasingly necessary to find ways to efficiently manage features of the urban environment. Smart + Connected Cities systems enable cities to address the challenges arising out of rapid urbanization that have created stress on the urban infrastructure.

Question 10

2 / 2 pts

What are two characteristics of the Cisco Connected Factory Solution? (Choose two.)

Correct!

- [x] network security
- [ ] low power requirements
- [ ] intelligent grid routers

Correct!

- [x] operational efficiency and productivity
- [ ] complex management tools
- [ ] secure manufacturing standards

Refer to curriculum topic: 5.3.4
Cisco Connected Factory is a part of the Cisco manufacturing solutions. This IoT proposition provides improved network security along with operational efficiency and productivity using a unified, factory-wide secure network.

Question 11

2 / 2 pts

Which Cisco IoT manufacturing solution addresses protection against risks, improves efficiency, and reduces factory site downtime?

- [ ] Cisco Connected Machines
- [ ] Cisco Connected Supply Chain
- [ ] Cisco Connected Factory

Correct!

- [x] Cisco Secure Ops

Refer to curriculum topic: 5.3.4
Cisco provides IoT solutions to improve the business of manufacturing. One solution, Cisco Secure Ops, provides protection against risks, improves efficiency, and reduces site downtime.

Question 12

0 / 2 pts

What is an example of M2M communication in a home with the IoT connection?

A webcam detects movement and notifies a home owner that someone has entered the home.

orrect Answer

A smart refrigerator sends a message to a grocery store for the delivery of milk.

'ou Answered

A home owner views the home monitoring system while traveling out of town.

A customer receives a message from an online store that the product ordered is shipped.

Refer to curriculum topic: 5.1.1
The IoT connects objects to the Internet. Within the IoT, M2M enables communication between devices without the need for human intervention.

Question 13

2 / 2 pts

Which Cisco IoT pillar would include industrial routers, industrial switches, industrial wireless devices, and embedded networks?

- cyber and physical security
- fog computing

Correct!

- network connectivity
- management and automation

Refer to curriculum topic: 5.1.1
The Cisco IoT system pillars include network connectivity, fog computing, cyber and physical security, data analytics, management and automation, and application enablement platform. The network connectivity pillar includes reliable, scalable, high-performance solutions such as industrial routers, industrial switches, industrial wireless solutions, and embedded networks.

Question 14

2 / 2 pts

Which cybersecurity solution would help with IoT physical security?

- secure switches and routers
- firewall
- data plane security

Correct!

- video surveillance

Refer to curriculum topic: 5.1.2
Physical security commonly includes securing network infrastructure facilities as well as possibly implementing video surveillance of the things that are a part of the IoT.

Question 15

2 / 2 pts

A company plans to develop IoT solutions for both horizontal and vertical markets. What is the major difference in designing solutions for different industries?

Control software for a horizontal market industry should be coded with C, whereas control software for a vertical market industry should be coded with Python.

Correct!

Solutions for a horizontal market industry should meet general needs across the industry, whereas solutions for a vertical market industry should meet specialized needs for the industry.

Solutions for a horizontal market industry will deal with many general network devices, whereas solutions for a vertical market industry will deal with only specialized equipment.

Solutions for a horizontal market industry should be usable for a longer time, whereas solutions for a vertical market industry would have a short limited time usage.

Refer to curriculum topic: 5.2.1
The IoT solutions suitable for a horizontal market should meet similar needs for a wide variety of industries that have different products and customers. They tend to be less specialized than a product designed for a certain type of industry with specific needs. On the other hand, the IoT solutions suitable for a vertical market should meet specialized needs for companies with products for a set of customers.

Question 16

2 / 2 pts

What is the most common application of the Industrial Internet?

- data collection
- healthcare device connectivity
- smart grid
- predictive maintenance

Correct!

Refer to curriculum topic: 5.2.1
The Industrial Internet consists of machinery, sensors, and software, all of which provide real-time data to people, machines, and processes. The most common application of predictive maintenance is that data is collected, analyzed, and provided on when a particular device needs maintenance in an effort to save unexpected downtime or prevent safety incidents.

Question 17

2 / 2 pts

Which pillar of the Cisco IoT System allows data to be analyzed and managed at the location where it is generated?

- data analytics
- application enhancement platform

Correct!

- fog computing
- network connectivity

Refer to curriculum topic: 5.1.1
The Cisco IoT System consists of six pillars to describe foundational elements, (1) network connectivity, (2) fog computing, (3) security (cyber and physical), (4) data analytics, (5) management and automation, and (6) an application enablement platform. The fog computing pillar covers software and hardware that extends IoT applications to the network edge.

Question 18

2 / 2 pts

How does the Smart Grid system benefit the environment?

- It decreases traffic in cities and helps eliminate air pollution from cars.
- It enables the more efficient use of home energy resources by enabling homeowners to control the consumption of energy by heating and cooling systems, lighting, and appliances.
- It limits the amount of power that is available to consumers through enhanced monitoring and control by utility companies.

Correct!

It enables excess energy that is generated at homes and other sources to be distributed along with the power generated by utility companies.

Refer to curriculum topic: 5.3.3
Smart Grid enables a new model of power generation and distribution in which many sources of power, such as solar panels, can contribute to the power grid. In addition, it enables the storage and distribution of excess power in batteries and helps to improve distribution of power based on demand.

Question 19

2 / 2 pts

What are three new challenges associated with the rapid growth of the IoT? (Choose three.)

Correct!

- [x] integrating many devices from different vendors with custom applications

Correct!

- [x] integrating new things into existing networks
- [ ] developing better routing protocols for new devices
- [ ] improving the Internet connections from homes
- [ ] increasing the CPU power of computers

Correct!

- [x] securing new devices with varying level of security

Refer to curriculum topic: 5.1.1
The rapid growth of the IoT introduces new challenges, including these:

- How to integrate millions devices from different vendors with custom applications
- How to integrate new things into the existing network infrastructure
- How to secure devices with varying levels of security

Quiz Score: **36** out of 38

Connecting Things Chapter 6 Quiz

Due Jan 24 at 12pm **Points** 36 **Questions** 18
Available Jan 24 at 7:30am - Jan 24 at 12pm about 5 hours **Time Limit** 60 Minutes

Instructions

This quiz covers the content presented in **Connecting Things 2.0 Chapter 6**. This quiz is designed for practice. You will be allowed multiple attempts and the grade does not appear in the gradebook.

There are multiple task types that may be available in this quiz. In some task types, partial credit scoring is allowed to foster learning. Please note that on tasks with multiple answers, points can be deducted for selecting incorrect options.

Short answer or essay questions may appear on some of the quizzes. These questions are designed for self-assessment and reflection and are not scored. Sample answers are provided for self-evaluation.

At the completion of the quiz, some items may display feedback. The feedback will reference the source of the content. Example: "Refer to curriculum topic: 1.2.3" - indicates that the source of the material for this task is located in chapter 1, section 2, topic 3.

Form: 32645

This quiz was locked Jan 24 at 12pm.

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	9 minutes	36 out of 36

Score for this quiz: **36** out of 36
Submitted Jan 24 at 10:21am
This attempt took 9 minutes.

Question 1 — 2 / 2 pts

Which area of activity in the Business Model Canvas is associated with transforming inputs into offerings?

service

sales

Correct!

operations

marketing

Refer to curriculum topic: 6.4.1
In the design of a value proposition, there are five areas commonly associated with production and manufacturing: inbound logistics, operations, outbound logistics, marketing and sales, and service. The operations activity in the Business Model Canvas is concerned with transforming inputs into offerings.

Question 2

2 / 2 pts

What are two precautions that can be taken to prevent radio interference from unconnected analog pins on a circuit board? (Choose two.)

Correct!

Connect them to ground.

Connect them to a resistor.

Correct!

Connect them to the battery.

Connect them to each other.

Cover them with electrical tape.

Refer to curriculum topic: 6.3.1
Analog pins with no connections are in a floating state. In this state they are subject to radio interference, which can change the state of the pin and cause corruption in the programming code of the device.

Question 3

2 / 2 pts

What symbol is used in a flowchart to represent a decision?

- rectangle
- circle
- diamond

Correct!

- star

Refer to curriculum topic: 6.3.1
In a flowchart, the rectangle is used to represent an activity or processing step. A diamond is used to represent a decision step.

Question 4

2 / 2 pts

Which HTTP method initiates a RESTful read action?

- PUT
- POST
- GET

Correct!

DELETE

Refer to curriculum topic: 6.3.1
RESTful systems often communicate over Hypertext Transfer Protocol (HTTP), using the same HTTP verbs (GET, POST, PUT, and DELETE) as used by web browsers. The GET HTTP verb is used to initiate a read action.

Question 5

2 / 2 pts

What is documented through the use of a flowchart?

the interactions between entities along a timeline

the best paths through a network

the components and connections of electric circuits

Correct!

the solution flow to a given problem

Refer to curriculum topic: 6.3.2
The flowchart uses different shapes such as boxes and connecting arrows to represent processes in a workflow.

Question 6

2 / 2 pts

Which aspect of the Business Model Canvas is covered by four blocks: value proposition, customer segment, channels, and customer relationships?

finances

Correct!

customer interface

technologies

infrastructure management

Refer to curriculum topic: 6.4.1
The Business Model Canvas uses nine building blocks to describe the business model of an organization based on a custom interface, infrastructure management, and finances. The customer interface component consists of the four blocks.

Question 7

2 / 2 pts

What ensures that an IFTTT URI is only usable by the authorized device?

a passphrase

a challenge

Correct!

a secret key

a public key

Refer to curriculum topic: 6.3.1
A secret key provided by IFTTT is used to ensure that only authorized devices and applications can use the special IFTTT URI.

Question 8

2 / 2 pts

What are the first two steps in the engineering design process? (Choose two.)

- [ ] document
- [x] define
- [x] inspire
- [ ] construct
- [ ] analyze

Correct!

Correct!

Refer to curriculum topic: 6.2.1
The engineering design process is a series of five steps used by engineers when working on a solution to a problem. The steps in order are inspire, define, prototype, test, and present. The steps are cyclical and are repeated as many times as needed to make improvements in the design process.

Question 9

2 / 2 pts

Which type of information is conveyed in a sequence diagram?

- components in an electrical circuit
- processes and workflows in a project
- types of interactions between devices along a timeline
- steps in an engineering design process

Correct!

Refer to curriculum topic: 6.3.1
A sequence diagram is a common choice when various types of interactions between devices must be represented. They are used to represent interactions between devices along a timeline.

Question 10

2 / 2 pts

Which building block of the Business Model Canvas identifies how value will be delivered to customer segments?

- customer segments
- channels

Correct!

- cost structure
- customer relationships

Refer to curriculum topic: 6.4.1
In the Business Model Canvas, the channels building block identifies how an organization will deliver value to customer segments. Channels can include direct efforts or indirect methods as well as add value.

Question 11

2 / 2 pts

What type of diagram is used to represent interactions along a timeline?

- electric schematic
- sequence diagram

Correct!

flowchart

elementary diagram

Refer to curriculum topic: 6.3.1
The sequence diagram is used to represent interactions along a timeline. A sequence diagram is also known as an event diagram or event scenario.

Question 12

2 / 2 pts

Which function is associated with the marketing and sales activity of a product or service in the Business Model Canvas?

distributing offerings to customers

receiving inputs for offerings

transforming inputs into offerings

Correct!

facilitating an exchange of value for offerings

Refer to curriculum topic: 6.4.1
In the Business Model Canvas the, marketing and sales activity is concerned with facilitating an exchange of value for offerings.

Question 13

2 / 2 pts

What is an example of a company or entrepreneur using the Business Model Canvas?

Correct!

- (•) using sticky notes on a large surface
- ( ) using a network simulation tool such as Packet Tracer
- ( ) using network documentation software such as Microsoft Visio
- ( ) using network inspection software such as WireShark

Refer to curriculum topic: 6.4.1
The Business Model Canvas is a way for organizations and entrepreneurs to visualize a business model based on customer segments, value propositions, channels, customer relationships, revenue streams, key resources, key activities, key partnerships, and cost structures.

Question 14

2 / 2 pts

What are three of the eight Millennium Development Goals? (Choose thee.)

- [ ] provide high speed Internet access to every home
- [ ] realize IoT solutions for car manufacturers

Correct!

- [x] ensure environmental sustainability

Correct!

- [x] eradicate extreme hunger
- [ ] stop nuclear weapon development

Correct!

- [x] promote gender equality and empower women

Refer to curriculum topic: 6.1.1
The eight Millennium Development Goals (MDGs) are as follows:

- Eradicate extreme hunger
- Achieve universal primary education
- Promote gender equality and empower women
- Reduce child mortality
- Improve maternal health
- Combat HIV/AIDS and malaria and other diseases
- Ensure environmental sustainability
- Global partnership for development

Question 15

2 / 2 pts

Which web architecture uses hyperlink references that point to images, audio, or video?

Correct!

- (•) hypermedia
- ( ) hyperlink
- ( ) URLs
- ( ) URIs

Refer to curriculum topic: 6.3.1
Hypermedia is an extension of hypertext. Hypermedia references not only text but also images, audio, and video.

Question 16

2 / 2 pts

What are two recommended security actions to take when using off-the-shelf IoT devices? (Choose two.)

Correct!

- [x] Disable UPnP.
- [ ] Enable remote management.
- [ ] Ensure that all accounts are enabled.
- [ ] Use default user accounts and passwords.

Correct!

- [x] Update software and patches.

Refer to curriculum topic: 6.2.1
Many off-the-shelf IoT devices are not designed and manufactured with security in mind. Security precautions must be taken with these devices. These precautions include disabling default user accounts, disabling UPnP, and disabling remote management services.

Question 17

2 / 2 pts

Fill in the blank.

Rent is an example of a fixed cost because it does not change based on the amount of product produced.

Answer 1:

Correct!

fixed

orrect Answer

fix

orrect Answer

fixed cost

Refer to curriculum topic: 6.4.1
There are two types of business costs: fixed costs and variable costs. Fixed costs are those that do not change based on the amount of product produced. Because the rent of a facility does not go up or down based on production, rent is a fixed cost.

Question 18

2 / 2 pts

Which three blocks in the Business Model Canvas describe infrastructure management? (Choose three.)

- [ ] channels
- [x] key resources — Correct!
- [x] key activities — Correct!
- [ ] cost structure
- [ ] revenue stream
- [x] key partnerships — Correct!

Refer to curriculum topic: 6.4.1
The Business Model Canvas uses nine building blocks to describe the business model of an organization based on a custom interface, infrastructure management, and finances. The infrastructure management consists of three blocks: key activities, key resources, and key partnerships.

Quiz Score: **36** out of 36