1. In the _____ model, services are centrally hosted and licensed on a subscription basis.   **1 / 1 point**

   ○ Infrastructure as a Service

   ◉ Software as a Service

   ○ Computing as a Service

   ○ Platform as a Service

   ↗ **Expand**

   ✓ **Correct**
   In the Software as a Service model, software and applications are centrally hosted and licensed on a subscription basis.

2. In the _____ cloud model, the cloud provider provisions the cloud infrastructure for use by multiple companies.   **1 / 1 point**

   ○ Hybrid

   ○ Private

   ○ Hybrid monocloud

   ◉ Public

⊘ **Correct**
Public cloud is when you leverage cloud services over the open internet on hardware owned by the cloud provider, but its usage is shared by other companies.

3. Virtualization is the process of creating a software-based version of physical resources, made possible through the use of
_____.

| 1 / 1 point |

○ APIs

○ Load balancers

◉ Hypervisors

○ Third-party plugins

⊘ **Correct**
The hypervisor makes virtualization feasible. The hypervisor is a piece of software that runs above the physical server, and the hypervisor pulls the resources from the physical server and allocates them to your virtual environments.

4. A _____ is an executable unit of software in which application code is packaged, along with its libraries and dependencies, in common ways so that it can be run anywhere—desktops, traditional IT, or the cloud.

| 1 / 1 point |

○ Instance

○ Host

◉ Container

○ Hypervisor

⊘ **Correct**
A containers is an executable unit of software in which application code is packaged, along with its libraries and dependencies, in common ways so that it can be run anywhere—desktops, traditional IT, or the cloud.

5. Which type of cloud storage can be mounted on multiple servers at once?

| 0 / 1 point |

○ File

6. Front-end developers use CSS to do which of the following to a website?

○ Create the physical structure of the website

○ Render the website's pages more quickly and efficiently

● Style the website and make it more appealing

○ Add interactivity to the website

⤢ **Expand**

✓ **Correct**
Front-end developers use CSS to define, apply, and manage different sets of style characteristics to a website and to make the site more appealing.

7. HTML uses _____ to talk to servers and backend services to process user events and display results on a website.

○ JavaScript functions

○ CSS

○ Events

● APIs

⤢ **Expand**

✓ **Correct**
HTML uses APIs to talk to servers and backend services to process user events and display results on a website.

8. Which HTML tag should you use to specify self-contained content?

○ <canvas>

○ <div>

○ <section>

◉ <figure>

⤢ **Expand**

✓ **Correct**
    The <figure> tag specifies self-contained content such as graphics, images, or code sections.

9. In JavaScript, what is one use of the toString method?

○ Add whitespace to both sides of a string.

○ Join two or more strings together.

○ Extract part of a string and return this part in a new string.

◉ Convert between objects and primitive literals.

⤢ **Expand**

✓ **Correct**
    Wrapper objects use special methods such as the valueOf and toString methods to convert between objects and primitive literals.

1 / 1 point

1 / 1 point

10. In JavaScript, assume you need to create a variable with global scope and whose value will never change. What is the first step you must take to declare this variable?

0 / 1 point

○ Providing the var keyword

11. Which of the following is a popular web-hosted service for Git repositories?

1 / 1 point

- ○ Subversion
- ○ ClearCase
- ○ PTC Integrity
- ◉ BitBucket

⤢ **Expand**

✓ **Correct**
One popular web-hosted service for Git repositories is BitBucket.

12. What is one purpose for using repositories?

1 / 1 point

- ◉ Maintaining version-control for a project
- ○ Providing local working directories for a project
- ○ Using a web interface to create a project
- ○ Staging changes before committing them to a project

⤢ **Expand**

✓ **Correct**
A repository can track and maintain version-control.

13. Assume you are a developer on a GitHub project, and on your computer, you have a cloned copy of the GitHub repository. After editing several files in your local repository, what is the first step you must take to push your changes back to GitHub?

○ Delete your working directory.

○ Update the README file.

○ Create a new master branch.

◉ Use the add command.

↗ **Expand**

✓ **Correct**
When ready to push your changes back to GitHub, you must first run the git-add command on the changed files. This command moves the files into a staging area.

14. What is the function of the git-push command?

○ git-push applies a patch to files or to the remote repository.

○ git-push shows previous edits made to the local repository.

○ git-push moves or renames a file from the local repository.

◉ git-push transfers your local changes to the remote repository.

↗ **Expand**

✓ **Correct**
The git-push command transfers changes from your local repository to the remote repository.

15. In a Git team project, which team member uses the git-am command as part of their responsibilities?

○ Developer

○ Repository administrator

○ Billing manager

◉ Integrator

⤢ **Expand**

⊘ **Correct**
An integrator uses the git-am command to apply patches emailed in from project contributors.

16. The cloud native application stack consists of four different layers: application runtime; application and data services; scheduling and orchestration; and cloud infrastructure. The _____ layer defines the underlying environment.

○ Application and data services

○ Application runtime

◉ Cloud infrastructure

○ Scheduling and orchestration

⤢ **Expand**

⊘ **Correct**
The cloud infrastructure layer defines the underlying environment. Cloud native apps are developed for public, private, hybrid, and multi-cloud environments.

17. Which continuous delivery feature can you use to automate builds, unit tests, and deployment?

1 / 1 point

- ◯ Git repository
- ◯ Web IDE
- ⦿ Delivery pipeline
- ◯ Issue tracker

⤢ **Expand**

✓ **Correct**
A delivery pipeline is a feature of continuous delivery you can use to automate builds, unit tests, and deployment.

18. The process of refactoring and breaking down large legacy applications into a collection of small, loosely coupled microservices that can be aligned to a feature or a business function is called what?

1 / 1 point

- ◯ Containerization
- ◯ Operational optimization
- ⦿ Strangling the monolith
- ◯ Lift and shift

⤢ **Expand**

✓ **Correct**
Correct. Moving the large application piece by piece is referred to as "strangling the monolith."

19. Which of the following is a characteristic of cloud native computing?

1 / 1 point

- ○ Stateful processes
- ● Easy scalability
- ○ Monolithic applications
- ○ High maintenance

⤢ **Expand**

✓ **Correct**
A cloud native application consists of microservices working together as a whole to comprise an application, making the application easy to scale.

20. What is IBM Watson?

1 / 1 point

- ○ A public portal that contains documentation for different REST APIs\
- ● The artificial intelligence offering from IBM.
- ○ An architecture style for building resources on the Web
- ○ An application for interacting with HTTP APIs that presents a friendly graphical user interface (GUI) for constructing requests and reading responses

⤢ **Expand**

✓ **Correct**
Correct. Watson uses natural language processing (NLP), computer vision, and machine learning technologies to reveal insights from large amounts of unstructured data.

21. JSON is the standard format for API data exchange. What relationship does JSON have with Node.js?

○ Common data model folder

◉ Standard representation of native JavaScript objects

○ JSON_SET

○ Metadata file

↗ Expand

✓ **Correct**
Correct. JSON represents objects that can be processed and routed by Node.js

22. Which of the following is not a package used to build React applications?
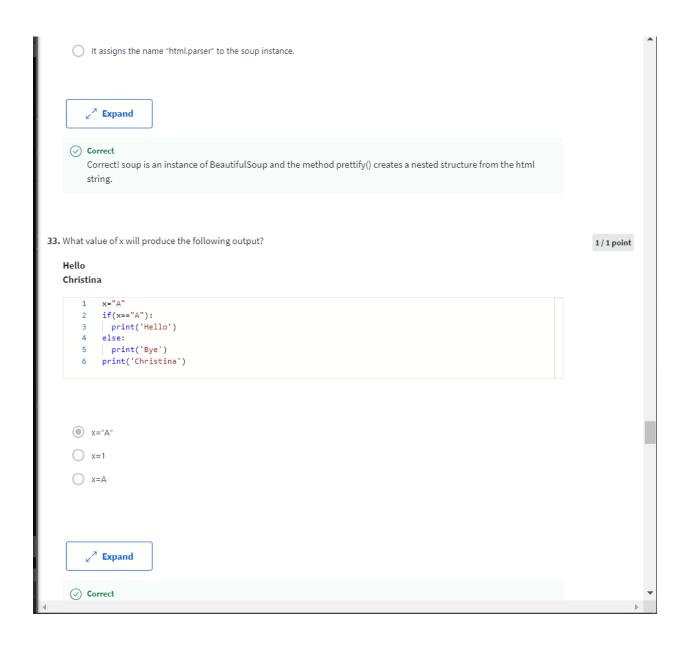
○ JSX

23. To make a function or a value available to Node.js applications that import your module, you should: `1 / 1 point`

○ Do nothing – it happens automatically

○ Use the require function with a relative path to the script file

◉ Add a property to the implicit exports object

○ Call require with the name of a subdirectory

⤢ **Expand**

⊘ **Correct**
  Correct. You should add a property to exports to make a function or a value available to Node.js applications.

24. The initial state of a promise object is _____.   `1 / 1 point`

○ Blocked

○ Rejected

◉ Pending

○ Resolved

⤢ **Expand**

⊘ **Correct**
  Correct. A promise object is in a pending state when it is created.

25. What purpose does a router serve?

○ Determines what is done after a function is executed

◉ Assists the server in handling queries

○ Determines the order in which middleware is chained

○ Handles errors

↗ **Expand**

✓ **Correct**
   Correct. A router is used for branching query handling and routing each query differently.

26. Some of the common Docker CLI commands include_____ to create a new image and _____ for testing developed images.

○ run, build

○ image, build

○ push, pull

◉ build, run

↗ **Expand**

✓ **Correct**
   Correct. These are the correct commands for the listed operations.

27. Which of these is not a function of container orchestration?

1 / 1 point

○ Ensures that containers are redundant and available so that applications experience minimal downtime

○ Performs health checks to ensure that applications are running and takes necessary actions when checks fail

◉ Limits organization to one unified container

○ Scales containers up and down to meet demand and load-balances requests across instances

⤢ Expand

✓ **Correct**
Correct. Container orchestration enables an organization to gain the benefits of using multiple containers.

28. Which of the following is not true of a container image?

1 / 1 point

○ It is built by using a Dockerfile

◉ It is the same as a container

○ It is read-only

○ A container is a running image

⤢ Expand

✓ **Correct**
Correct. A container image represents a container like a blueprint or snapshot.

29. Which of the following statements is incorrect?

○ The get command lists all the deployments that are present in the kube-system namespace.

◉ "Kube-system" is a user-created namespace for objects

○ When the apply command is run, the state of the targeted Kubernetes cluster is made to match the state that's defined in the provided files.

○ The describe command shows details about a specific resource or group of resources.

↗ Expand

✓ **Correct**
Correct. This namespace is created by the Kubernetes system; it's not a user-created namespace.

30. Which of the following is provided by OpenShift's cluster services?

○ Private registry

○ Integrated monitoring

◉ All of these

○ Networking solutions

↗ Expand

✓ **Correct**
Correct. Red Hat OpenShift provides a wide array of services to be used with Kubernetes.

31. What is the result of running the following lines of code?

```
1    class Points(object):
2        def __init__(self,a,b):
3            self.a=a
4            self.b=b
5        def print_point(self):
6            print('a=',self.a,' b=',self.b)
7    p1=Points("X","Y")
8    p1.print_point()
```

○ b=Y

○ a=X

◉ a=X b=Y

⤢ Expand

✓ **Correct**
Correct. The variables have been assigned and printed.

32. What does the following code do to an HTML string that is saved in a variable named "html" and uses the Python library "BeautifulSoup?"

soup = BeautifulSoup(html, "html.parser")
print(soup.prettify())

◉ It prints out the BeautifulSoup object as a nested data structure.

○ It assigns the name "html" to the soup instance.

○ It prints out the html.parser object.

○ It assigns the name "html.parser" to the soup instance.

 Expand

33. What value of x will produce the following output?

1 / 1 point

Hello
Christina

```
1    x="A"
2    if(x=="A"):
3        print('Hello')
4    else:
5        print('Bye')
6    print('Christina')
```

⦿ x="A"
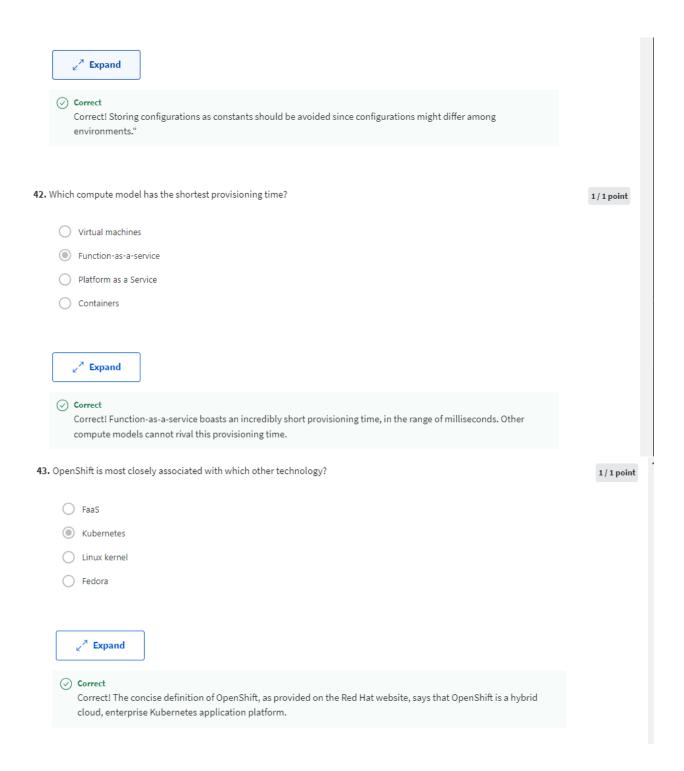
○ x=1

○ x=A

 Expand

✓ **Correct**

34. When using the open() function, what is the purpose of passing the parameter 'a+' into it?

1 / 1 point

○ Writing and reading. Truncates the file.

◉ Appending and reading. Creates a new file if none exists.

○ Reading and writing. Cannot truncate the file.

○ Opening and reading. Creates a new file if none exists.

↗ **Expand**

✓ **Correct**
Correct. Rather than passing 'a' only, 'a+' both appends and reads.

35. Which of the following statements is true about tuples and lists?

1 / 1 point

○ Tuples and lists are both immutable.

○ Tuples and lists are both mutable.

◉ Tuples and lists are both ordered sequences.

○ Tuples and lists are both unordered.

↗ **Expand**

✓ **Correct**
Correct! Tuples and lists are both ordered sequences but tuples are immutable whereas lists are mutable.

36. In a library entity-relationship data model, a book is an example of _____ and the book's title, edition, and publication date are examples of _____.

- (•) an entity; attributes
- ( ) an attribute; entities
- ( ) a row; columns
- ( ) an entity; properties

1 / 1 point

[↗ Expand]

✓ **Correct**
Feedback: Correct! An entity is the subject of focus and its attributes describe the entity.

37. What is the purpose of using a Django template?

- ( ) It can easily be mapped to a relational database.
- ( ) It converts static HTML to dynamic HTML.
- (•) When combined with Django views, it presents data as a dynamic HTML page.
- ( ) It is an alternative to the entity-relationship model for rendering data.

1 / 1 point

[↗ Expand]

✓ **Correct**
Correct! "Django uses a template to generate dynamic Web pages that are sent back and rendered in a user's browser."

38. When you create a Django project, Django creates some core files, including manage.py. What purpose does manage.py serve?

- ○ It creates markdown elements.
- ○ It contains the settings and configurations for your Django project.
- ○ It contains the URL and routing definitions of your Django app.
- ◉ It provides a command line interface so you can interact with the Django project.

⤢ **Expand**

✓ **Correct**
Correct! manage.py is a command line interface used to interact with the Django project to start the server, migrate models, and so on.

39. Which of the following describes one of the two types of containers in Bootstrap?

- ○ It creates a card-grid.
- ○ It displays tabular data.
- ◉ It spans the entire width of the parent element.
- ○ It has variable width.

⤢ **Expand**

✓ **Correct**
Correct! One of the two types of containers is container-fluid, which spans the entire width of the parent element.

40. Which statement is true regarding object-relational mapping?   1 / 1 point

   ○ A change in the database only require changes to the data access logic but not to the application logic.

   ◉ ORM bridges the gap between OOP and SQL.

   ○ ORM usually makes debugging simpler than SQL.

   ○ ORM utilizes lookup tables to access data.

   ⬈ **Expand**

   ✓ **Correct**
   Correct! Developers can use just one programming paradigm development.

41. In accordance with the twelve-factor app methodology, why should developers avoid storing configuration as constants in   1 / 1 point
their code?

   ◉ Because configurations might differ among environments

   ○ Because configuration environment variables are difficult to change across deploys without changing
the code

   ○ Because a twelve-factor app should not distinguish between local and third-party services

   ○ Because databases are likely the same in the various environments used for staging and production

[↗ Expand]

42. Which compute model has the shortest provisioning time?

1 / 1 point

- ○ Virtual machines
- ◉ Function-as-a-service
- ○ Platform as a Service
- ○ Containers

[↗ Expand]

43. OpenShift is most closely associated with which other technology?

1 / 1 point

- ○ FaaS
- ◉ Kubernetes
- ○ Linux kernel
- ○ Fedora

[↗ Expand]

44. Which statement best describes blocking invocations?

○ After the invocation they wait for the result.

45. Which statement is true about object storage?

1 / 1 point

○ It is used when fast, efficient, and reliable data transportation is required.

◉ Objects are self-contained repositories.

○ It makes use of relational databases for storage.

○ Data stored in object storage is hierarchical.

[⤢ Expand]

✓ **Correct**
Correct! An object is a self-contained repository that contains the data, metadata, and a unique identifier that applications use to access the object.