

1. Which of these are essential characteristics of the cloud? Select the two characteristics that apply.

1 / 1 point

- ☐ Static access
- ☒ Broad network access

✓ **Correct**

Correct! One essential characteristic of the cloud is broad network access. This means that cloud computing resources can be accessed via the network through standard mechanisms and platforms.

- ☒ Resource pooling

✓ **Correct**

Correct! One essential characteristic of the cloud is resource pooling, where a shared model gives cloud providers economies of scale, which they pass on to their customers, making the cloud cost-efficient.

- ☐ Limited service

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

1 / 1 point

- ☐ Hybrid monocloud
- ☐ Private
- ☒ Public
- ☐ Hybrid

✓ **Correct**

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. Which of the following are the key benefits of virtualization? *Select the two choices that apply.*

1 / 1 point

- ☐ No need for a physical server
- ☐ High computational power
- ☒ Low maintenance costs

✓ **Correct**

Correct! You can run multiple virtual machines on one physical server. This can drastically reduce the physical infrastructure footprint. The results include less electricity usage and lower maintenance costs.

- ☒ Lower downtime

✓ **Correct**

Correct! This is one of the key benefits of virtualization.

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

- ☐ Host
- ☐ Hypervisor
- ☐ Instance
- ☒ Container

✓ **Correct**

Correct! A container 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?

1 / 1 point

- ☐ Object storage
- ☐ Block storage
- ☒ File storage
- ☐ Direct attached storage

✓ **Correct**

Correct! One advantage of file storage is that it can be mounted or used on multiple servers at once.

6. Why front-end developers use cascading style sheets (CSS) for a website?

1 / 1 point

- ☐ To render the website's pages more quickly and efficiently
- ☐ To create the physical structure of the website
- ☐ To add interactivity to the website
- ☒ To style the website and make it more appealing

✓ **Correct**

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. When does the server return error 404?

1 / 1 point

- ☐ When the server does not understand the request
- ☐ When the user does not have an account
- ☐ When the routing fails
- ☒ When the request from the front end arrives at the back end, and the endpoint is missing.

✓ **Correct**

Correct! If the back end has an endpoint defined for the request by using routing, the request will be addressed and replied to. If the endpoint is missing, the server returns a 404 error.

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

1 / 1 point

- ☒ <figure>
- ☐ <canvas>
- ☐ <div>
- ☐ <section>

✓ **Correct**

Correct! The <figure> tag specifies self-contained content, and the figure elements can be used to embed graphics, images, or code sections.

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

1 / 1 point

- ☐ It adds whitespace to both sides of a string.
- ☐ It extracts part of a string and returns this part in a new string.
- ☐ It joins two or more strings together.
- ☒ It returns a string representing the object it is invoked on.

✓ **Correct**

Correct! When a date object is sent to the console or a date object is displayed on a web page, JavaScript automatically applies a toString method to the object, which displays a string version of the date.

10. Which of the following is a correctly formatted variable name or identifier in JavaScript?

1 / 1 point

- ☒ newCustomer1
- ☐ 1newCustomer
- ☐ newCustomer#1
- ☐ "new1Customer"

✓ **Correct**

Correct! JavaScript identifiers must start with a letter, underscore, or dollar sign. Subsequent letters can also be digits (0–9).

11. Which of these options defines version control system?

1 / 1 point

- ☐ Git is the only version control system available today.
- ☒ A version control system helps you keep track of changes to your document.
- ☐ A version control system gives information only about the latest version.
- ☐ A version control statement controls the version by disallowing changes.

✓ **Correct**

Correct! A version control system is defined as one which helps you keep track of changes to your document.

12. Which of the following is the purpose for using repositories?

1 / 1 point

- ☐ Securing remote login to access a project
- ☐ Providing local working directories for a project
- ☒ Storing documents for a project
- ☐ Viewing snapshots of a project

✓ **Correct**

Correct! A repository is a data structure for storing documents, including application source code.

13. On GitHub, what is the purpose of a pull request?

1 / 1 point

- ☐ Establish the master branch as the definitive version of the project
- ☒ Allow others to review and use proposed changes
- ☐ Create a new branch of the project for review
- ☐ Undo changes made to files in the working directory

✓ Correct

Correct! Pull requests enable other users to review and use the proposed changes.

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

1 / 1 point

- ☐ git push moves or renames a file from the local repository.
- ☐ git push shows previous edits made to the local repository.
- ☒ git push transfers your committed changes to the remote repository.
- ☐ git push applies a patch to files or the remote repository.

✓ Correct

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-daemon command as part of their responsibilities?

1 / 1 point

- ☐ Billing manager
- ☐ Developer
- ☐ Integrator
- ☒ Repository administrator

✓ Correct

Correct! A repository administrator uses the git-daemon command to allow anonymous downloads from a repository.

16. React is an open-source library created and maintained by Facebook and community developers. What is it mainly used to build?

1 / 1 point

- ☒ Complex UIs
- ☐ Accessibility messages
- ☐ AI Questions
- ☐ Error messages

✓ Correct

Correct! React is a framework for building client-side dynamic web applications.

17. Select the correct order of methods called when a class component is created.

1 / 1 point

- ☐ componentDidMount(), getDerivedStateFromProps(), constructor(), render()
- ☐ render(), getDerivedStateFromProps(), componentDidMount(), constructor()
- ☒ constructor(), getDerivedStateFromProps(), render(), componentDidMount()
- ☐ constructor(), getDerivedStateFromProps(), componentDidMount(), render()

✓ **Correct**

Correct! When a component is created in mounting, first, the constructor is invoked. The constructor first calls the super and then logs on to the console. Second, if the state depends on the changes to props, the getDerivedStateFromProps() method is used. Then, the render method is invoked. This method logs on to the console and then renders the component. Finally, the componentDidMount method is invoked.

18. Hooks can only be called _____.

1 / 1 point

- ☐ Inside conditions
- ☒ At the top level of a component
- ☐ Inside nested functions
- ☐ Inside functions

✓ **Correct**

Correct! Hooks can only be called at the top level of a component.

19. Which of the following is an appropriate reason to use Redux?

1 / 1 point

- ☐ It reduces the performance
- ☐ It increases the code complexity
- ☒ It optimizes the performances of large applications
- ☐ It offers a decentralized management system

✓ **Correct**

Correct! The performance of large applications is optimized by using Redux in the application.

20. Which of the following Redux elements receives the old state and action as input and returns an updated state?

1 / 1 point

- ☐ Subscription
- ☐ Actions
- ☐ Center store
- ☒ Reducer

✓ **Correct**

Correct! Reducer is among the Redux elements that receive the old state and action as input and return an updated state.

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

1 / 1 point

- ☐ Metadata file
- ☒ Server-side programming framework that uses JavaScript as its programming language.
- ☐ Common data model folder
- ☐ JSON_SET

✓ **Correct**

Correct! Node.js is a server-side programming framework that uses JavaScript as its programming language.

22. Which of the following actions you should execute to make a function or a value available to Node.js applications that import your module?

1 / 1 point

- ☒ Add a property to the implicit exports object
- ☐ Call required with the name of a subdirectory
- ☐ Use the require function with a relative path to the script file
- ☐ Do nothing, it happens automatically

✓ **Correct**

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

23. The initial state of a promise object is _____.

1 / 1 point

- ☐ Rejected
- ☐ Blocked
- ☐ Resolved
- ☒ Pending

✓ **Correct**

Correct! A promise object is in a pending state until the operation is complete or some error has caused the operation to abort.

24. What is template rendering?

1 / 1 point

- ☐ It renders static HTML pages from the server
- ☐ It defines the middleware function that the routers will use
- ☒ It is the ability of the server to fill in dynamic content in the HTML template
- ☐ It binds built-in middleware to specific routers

✓ **Correct**

Correct! It uses the view engine property, which is responsible for creating HTML from your views.

25. Which of the following Node.js web frameworks is associated with the below description?

1 / 1 point

It is used for routing and middleware, provides debugging mechanisms to help easily pinpoint the errors in the application, and utilizes asynchronous programming to handle multiple operation requests concurrently.

- ☒ Express
- ☐ Django
- ☐ NestJS
- ☐ Koa

✓ Correct

Correct! Express is one of the most popular Node Web Frameworks used for routing and middleware. It provides debugging mechanisms to help easily pinpoint the errors in the application. It handles multiple operation requests concurrently that are independent of each other with asynchronous programming.

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

1 / 1 point

```
class Points(object):
    def __init__(self,x,y):
        self.x=x
        self.y=y
    def print_point(self):
        print('x=',self.x, ' y=',self.y)
p1=Points("A","B")
p1.print_point()
```

- ☒ x=A y=B
- ☐ A B
- ☐ x=A
- ☐ y=B

✓ Correct

Correct! The variables have been assigned and printed.

27. Which is the correct syntax for declaring the tuple myTuple?

1 / 1 point

- ☐ myTuple = ([rectangle], [circle], [square], [hexagon])
- ☒ myTuple = ("rectangle", "circle", "square", "hexagon")
- ☐ myTuple=["rectangle", "circle", "square", "hexagon"].
- ☐ myTuple = {"rectangle", "circle", "square", "hexagon"}

✓ Correct

Correct! Tuples are expressed as comma-separated elements within parentheses.

28. In the following code, if x=4, what is the output?

1 / 1 point

```
if(x > 3):  
    print('Hello')  
  
else:  
    print('Bye')  
  
print('Hillary')
```

- ☐ Bye
- ☐ Hello
- ☒ Hello
- ☐ Hillary
- ☐ Bye
- ☐ Hillary

✓ **Correct**
Correct! x=4 matches the if statement condition.

29. To append text to a file, which mode argument should be passed into the open() function?

1 / 1 point

- ☐ 'o'
- ☐ 'w'
- ☐ 'r'
- ☒ 'a'

✓ **Correct**
Correct! The correct format is open(path, 'a').

30. In the BeautifulSoup Python library, what is the function of the Tag object?

1 / 1 point

- ☐ It assigns attributes to HTML tags.
- ☐ It creates a BeautifulSoup object as a nested data structure.
- ☒ It corresponds to an HTML tag in the original HTML document.
- ☐ It assigns HTML tags to a string.

✓ **Correct**
Correct! The Tag object is used to search for and identify HTML tags in the HTML string passed into a BeautifulSoup object.

31. 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 _____.

1 / 1 point

- ☒ an entity; attributes
- ☐ an entity; properties
- ☐ an attribute; entities
- ☐ a row; columns

✓ Correct

Correct! An entity is the subject of focus, and its attributes describe the entity.

32. Which statement best describes Cursor?

1 / 1 point

- ☐ A method in OOP to retrieve an object's data.
- ☒ A special control data structure for iterating over rows in a database.
- ☐ Statements that must be assembled in application code and executed in the database system using database APIs.
- ☐ A special method in ORM to map a column in a database to a class primitive attribute.

✓ Correct

Correct! The retrieved database rows are returned to the application code as Cursor, a special control data structure for iterating over rows in a database.

33. Which statement about Django templates is true?

1 / 1 point

- ☐ It creates an XML document.
- ☒ It contains Python code.
- ☐ It may contain server-side JavaScript.
- ☐ It contains dynamic HTML elements.

✓ Correct

Correct! The Django template contains static HTML elements and special Python code describing how the dynamic content of HTML pages will be generated.

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

1 / 1 point

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

✓ 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.

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

1 / 1 point

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

✓ **Correct**

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

36. Some of the common Docker CLI commands include_____ to copy and rename images and _____ for storing images in a configured registry.

1 / 1 point

- ☐ run, push
- ☐ build, pull
- ☐ image, send
- ☒ tag, push

✓ **Correct**

Correct! These are the correct commands for the listed operations.

37. Which of the following is true in relation to Kubernetes?

1 / 1 point

- ☒ It provides a flexible model that maintains choice for users wherever appropriate.
- ☐ It provides continuous integration/continuous deployment pipelines to build applications or deploy source code
- ☐ It provides logging, monitoring, and alerting solutions
- ☐ It limits the types of applications that can run on it

✓ **Correct**

Correct! Kubernetes can accommodate a variety of applications, languages, and frameworks.

38. What is a Dockerfile, and what is its primary purpose in the context of containerization?

1 / 1 point

- ☐ A Dockerfile is a tool for running containers.
- ☐ A Dockerfile is a tool for managing containers.
- ☒ A Dockerfile is a text file containing instructions for creating a container image.
- ☐ A Dockerfile is a tool for managing the deletion of containers.

✓ **Correct**

Correct! A Dockerfile is a text file containing instructions for creating a container image.

39. When the "apply" command is run, the targeted Kubernetes cluster _____.

1 / 1 point

- ☐ Is deactivated
- ☐ Lists deployments in the namespace
- ☒ Has its state changed to match the state that is defined in the provided files
- ☐ Is left unchanged

✓ Correct

Correct! At its most basic, the "apply" command simply requires a file or directory of files to match.

40. Is Red Hat OpenShift an open-source software?

1 / 1 point

- ☐ No. OpenShift has nothing to do with the open-source Origin Kubernetes Distribution.
- ☐ Yes. It is part of the Linux kernel.
- ☐ Yes. OpenShift is freely distributable.
- ☒ No. The Origin Kubernetes Distribution is open source, but it is packaged with other components to create the OpenShift product.

✓ Correct

Correct! Red Hat creates and sells the Red Hat OpenShift Container Platform.

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

1 / 1 point

- ☐ Because configuration environment variables are difficult to change across deploys without changing the code
- ☐ Because databases are likely the same in the various environments used for staging and production
- ☒ Because configurations might differ among environments
- ☐ Because a twelve-factor app should not distinguish between local and third-party services

✓ Correct

Correct! Storing configurations as constants should be avoided since configurations might differ among environments.

42. Which of the following API gateway is managed by Google?

1 / 1 point

- ☐ Apache APISIX
- ☒ Apigee
- ☐ Azure API Management
- ☐ Gloo

✓ Correct

Correct! Google offers API gateways as per the user's requirements, which are Apigee and Cloud Endpoints. Apigee is a popular API management platform that offers a managed API Gateway as part of its suite of features.

43. Which of the following is a type of cloud-computing service that allows you to execute code in response to events without a complex infrastructure?

1 / 1 point

- ☒ FaaS
- ☐ LaaS
- ☐ SaaS
- ☐ Fedore

✓ **Correct**

Correct! FaaS is a type of cloud-computing service that allows you to execute code in response to events without a complex infrastructure.

44. In the Code Engine Context, which of the following represents a mechanism that can be used to create a container image from the source code?

1 / 1 point

- ☐ Jobs
- ☐ Application
- ☒ Build
- ☐ Project

✓ **Correct**

Correct! In the Code Engine context, a build, or image build, is a mechanism you can use to create a container image from your source code.

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

1 / 1 point

- ☐ Linux kernel
- ☐ Fedora
- ☐ FaaS
- ☒ Kubernetes

✓ **Correct**

Correct! The concise definition of OpenShift, as per the Red Hat website, is that OpenShift is a hybrid cloud, enterprise Kubernetes application platform.