Number: 300-910
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Exam Code: 300-910
Exam Name: Implementing DevOps Solutions and Practices using Cisco Platforms (DEVOPS)

Exam A

QUESTION 1
Which type of testing should be integrated into a CI/CD pipeline to ensure the correct behavior of all of the modules in the source code that were developed using TDD?

A. soak testing
B. unit testing
C. load testing
D. volume testing

Correct Answer: B
Section:

QUESTION 2
Refer to the exhibit.

Build Command

```
#!/bin/bash
# apt-get -y install python3-pip
# pip install --upgrade pip
rm -rf automationSandboxTest || true
git clone https://github.com/oborys/automationSanboxTest.git
export SEARCHPATH="$PWD/automationSanboxTest/"
for k in $(cat $SEARCHPATH/requriements.txt | cut -d '>' -f 1 | cut -d '<' -f 1
                                            | cut -d '=' -f 1
do
    python -m pip install $k
done
echo
for k in $(find $SEARCHPATH -name *.py)
do
    echo > msg.txt
    python $k > /dev/null 2> msg.txt || true
    export CODE=$(grep -c ^ msg.txt)
    if [ $CODE != 0 ]
    then
        echo "File: $k" >> error_message.txt
        cat msg.txt >> error_message.txt
        echo >> error_message.txt
    fi
done
rm -rf msg.txt || true
cat error_message.txt
if [ $(cat error_message.txt| wc -l) != 0 ]
then
    exit 1
fi
```

Part of Console Output

```
++find /data/bms/webapps/jenkins/workspace/team_team_devnet-learning-labs-
automation/Always_On_Sandbox_testing/automationSandboxTest/ -name '*.py'
+ for k in '$(find $SEARCHPATH -name *.py)'
+ echo
+ python /data/bms/webapps/jenkins/workspace/team_team_devnet-learning-labs-
automation/Always_On_Sandbox_testing/automationSandboxTest/alwaysOnSandboxCh
eck.py
++ grep -c '^' msg.txt
+ export CODE=0
+ CODE=0
+ '[' 0 '!=' 0 ']'
+ rm -rf msg.txt
+ cat error_message.txt
cat: error_message.txt: No such file or directory
Build step 'Virtualenv Builder' marked build as failure
Notifying upstream projects of job completion
Finished: FAILURE
```

How should the Jenkins job be troubleshooted based on the error provided?

A. Verify what the responding file created.

B. Update pip.
C. Install dependencies.
D. Place the code in a container and run the job again.

Correct Answer: A
Section:

QUESTION 3
Configuration changes to the production network devices are performed by a CI/CD pipeline. The code repository and the CI tool are running on separate servers. Some configuration changes are pushed to the code repository, but the pipeline did not start.
Why did the pipeline fail to start?

A. The CI server was not configured as a Git remote for the repository.
B. The webhook call from the code repository did not reach the CI server.
C. Configuration changes must be sent to the pipeline, which then updates the repository.
D. The pipeline must be started manually after the code repository is updated.

Correct Answer: B
Section:
Explanation:
A webhook is basically a callback URL that is triggered when certain events occur, such as a code commit. If the webhook call from the code repository does not reach the CI server, then the pipeline will not start. According to the Cisco Implementing DevOps Solutions and Practices using Cisco Platforms (DEVOPS) Study Manual, "A webhook is a web-based feature that enables a remote service to communicate with a local service, usually through a web server.
Webhooks are used to trigger an action when a specific event occurs, usually in a remote service or application."

QUESTION 4
A new version of an application is being released by creating a separate instance of the application that is running the new code. Only a small portion of the user base will be directed to the new instance until that version has been proven stable. Which deployment strategy is this example of?

A. recreate
B. blue/green
C. rolling
D. canary

Correct Answer: D
Section:

QUESTION 5
Which description of a canary deployment is true?

A. deployment by accident
B. deployment that is rolled back automatically after a configurable amount of minutes
C. deployment relating to data mining development
D. deployment to a limited set of servers or users

Correct Answer: D
Section:

QUESTION 6
Refer to the exhibit.

```
1 ...
2 >>> response = requests.get(
3 ...     f'http://mydnacenter.local/dna/intent/api/v1/network-device/ip-address/{device_ip}',
4 ...     headers = {
5 ...         'Content-type' = 'application/json'
6 ...     }
7 ... )
8
9 Traceback (most recent call last):
10   File "<stdin>", line 1, in <module>
11 NameError: name 'requests' is not defined
```

What is causing the requests code to fail?

A. Rython3 is not compatible with requests.
B. The requests library is not imported.
C. The requests library is not installed.
D. The requests coming into stdin fail because device_ip cannot be parsed.

Correct Answer: B
Section:

QUESTION 7
A DevOps engineering wants to build an application implementation based on the CI/CD pipeline model. Which service should be used to provide hosted continuous service for open and private projects?

A. Ansible
B. pyATS
C. Genie CLI
D. Travis CI

Correct Answer: D
Section:

QUESTION 8
A DevOps engineer has built a new container and must open port 8080 for intercontainer communication. Which command must be added in a Dockerfile to accomplish this goal?

A. EXPOSE 8080
B. FIREWALL ADD-PORT 8080
C. PORT 8080
D. OPEN PORT 8080

Correct Answer: A
Section:

QUESTION 9
Which two actions help limit the attack surface of your Docker container? (Choose two.)

A. Run only a single service in each container.
B. Run all services in a single image.
C. Use version tags for base images and dependencies.
D. Use Kali Linux as a base image.

E. Download images over HTTPS supporting sites.

Correct Answer: A, C
Section:
Explanation:
Running only a single service in each container and using version tags for base images and dependencies helps limit the attack surface of your Docker container. This ensures that only the necessary services are running and that you always have the latest versions of the base images and their dependencies, reducing the risk of malicious code being included in the container image.
Reference: Docker Documentation, Security Best Practices.

QUESTION 10
A DevOps engineer has built a container to host a web-server and it must run as an executable.
Which command must be configured in a Dockerfile to accomplish this goal?

A. ENTRYPOINT <usr/sbin/apache2ctl>
B. ENTRYPOINT ["/usr/sbin/apache2ctl", "-D", "FOREGROUND"]
C. ENTRYPOINT ["BACKGROUND", "-D", "/usr/sbin/apache2ctl"]
D. ENTRYPOINT {usr/sbin/apache2ctl}

Correct Answer: B
Section:

QUESTION 11
Which Docker command is used to start an interactive Bash shell in a running container named "test"?

A. docker attach -it test /bin/bash
B. docker run -it test /bin/bash
C. docker exec -it test /bin/bash
D. docker run test /bin/bash

Correct Answer: C
Section:

QUESTION 12
What are two reasons a Docker golden image should be updated? (Choose two.)

A. when there is a change to a username or password in the Docker secrets
B. when the application has a new release
C. when a fix for a security vulnerability is released
D. when a change is needed to an environment variable in the Dockerfile
E. when the base image is nearing the end of life

Correct Answer: B, C
Section:

QUESTION 13
A company has experienced serious growth and the hosted applications are getting more and more hits. Based on the increased work load, applications have started to show signs of reduced performance, which is affecting the user experience.
Which two server metrics should be tracked to ensure that the customer experience remains within acceptable limits? (Choose two.)

A. application feature sprawl
B. CPU peak usage
C. CPU average usage
D. microservices count
E. CPU frequency

Correct Answer: B, C
Section:

QUESTION 14
Microservices architecture pattern has been applied and the system has been architected as a set of services. Each service is deployed as a set of instances for throughput and availability. In which two ways are these services packaged and deployed? (Choose two.)

A. Service instances must be isolated from one another.
B. Service must be independently deployable and scalable.
C. Service are written using the same languages, frameworks, and framework versions.
D. Service must be dependent, deployable, and scalable.
E. Service instances do not need to be isolated from one another.

Correct Answer: A, B
Section:

QUESTION 15
What is the purpose of using a build tool in software development?

A. It complies source code into binaries and executables.
B. It provides a way to edit source code using a graphical interface.
C. It is a manual process that is followed to build software.
D. It tracks bugs and incidents in a built application.

Correct Answer: A
Section:

QUESTION 16
Fill in the blanks to complete the line of Python code that sends a message to a Webex Teams room or person.

```
response = requests.[          ]("https://api.ciscopark.com/v1/[          ]", headers=message_header,
data=message_data)
```

A. post, messages

Correct Answer: A
Section:

QUESTION 17
Fill in the blank to complete the statement.
A user wants a Kubernetes deployment to run three separate pods of a web application at one time.

In the deployment YAML, the user must configure the_____field in the_____subsection.

A. "replicas" ,
"spec"

Correct Answer: A
Section:

QUESTION 18
Fill in the blanks to complete the statement.
When creating multiple containers, in order to allow communication with each other, you must create a_____ of type _____.

A. pod, volume

Correct Answer: A
Section:

QUESTION 19
Refer to the exhibit.

```
Traceback (most recent call last):
  File "api-call.py", line 1, in <module>
    import requests
  File "/Users/devnet/venv/devops/lib/python3.7/site-packages/requests/_init_.py", line 43, in <module>
    import urllib3
ModuleNotFoundError: No Module named 'urllib3'
```

What is the reason for this error message?

A. The required dependencies for the urllib3 module are not installed.
B. The requests module is not installed.
C. The required dependencies for the requests module are not installed.
D. The site-packages directory has been corrupted.

Correct Answer: C
Section:

QUESTION 20
What is the effective way to manage computing costs in a public cloud?

A. Monitor data transfers to minimize cost.
B. Use dedicated hardware for all instances.
C. Select the largest instance option available in order to pay for only one instance.
D. Make use of elastic services and scale on demand.

Correct Answer: D
Section:

QUESTION 21
ConfigMap keys have been mapped to different file names using the volumes.configMap.items field.
What is the result if a wrong ConfigMap key is specified?

A. The default path is not used.
B. The volume is not created.
C. The volume is created.
D. The volume is created with errors.

Correct Answer: B
Section:
Explanation:
If a wrong ConfigMap key is specified, the volume will not be created since the ConfigMap key must match the name of the item specified in the volumes.configMap.items field.

QUESTION 22
What are two benefits of Infrastructure as Code? (Choose two.)

A. It enables continuous integration.
B. It allows for management control.
C. It ensures consistency.
D. It improves application monitoring.
E. It reduces risk.

Correct Answer: C, E
Section:

QUESTION 23
Refer to the exhibit.

```
---
kind: pipeline
name: test1
platform:
  os: linux
  arch: amd64
steps:
- name: test
  image: postgres:9-alpine
  commands:
  - sleep 10
  - psql -U postgres -d test -h database -c "SELECT version();"
services:
- name: database
  image: postgres
  environment:
      POSTGRES_DB: test
      POSTGRES_USER: postgres
---
kind: pipeline
name: test2
platform:
  os: linux
  arch: amd64
steps:
- name: test
  image: postgres:9-alpine
  commands:
  - sleep 10
  - psql -U postgres -d test -h database -c "SELECT version();"
services:
- name: database
  image: postgres
  environment:
      POSTGRES_DB: test
      POSTGRES_USER: postgres
```

What is the user doing with Drone in this automated test?

A. testing Alpine Linux versus Ubuntu Linux
B. testing a PostgreSQL DB against multiple architectures
C. testing only the amd64 architecture
D. testing PostgreSQL deployment in an Alpine Linux VM

Correct Answer: D
Section:

QUESTION 24
An interface on a router as a Layer 3 link has been configured to another device by updating an Ansible playbook that is executed via a CI/CD pipeline. The Ansible playbook was written to push the configuration change using the ios_config module. Which automated test validates that the interface is functioning as it should?

A. Add a pipeline step that runs the playbook a second type. If it does not modify the device on the second run, then the interface is correctly configured.
B. Automated testing is already built in because the playbook execution is successful only after Ansible validates that it applied the change.
C. Add a pipeline step that captures and parses the packet flow for the interface.
D. Add a pipeline step that captures and parses the show ip interface output so that the operational state can be referenced.

Correct Answer: B
Section:
Explanation:
Adding a pipeline step that captures and parses the show ip interface output so that the operational state can be referenced is the best way to validate that the interface is functioning as it should. This can be done by using the ioscommand module to capture the output of the show ip interface command, and then using the iosparse module to parse the output and extract the relevant interface information. The ios_parse module allows you to validate the interface state, to ensure that it is up and running as expected. Reference: Cisco Implementing DevOps Solutions and Practices using Cisco Platforms (DEVOPS) Study Manual, Chapter 6, Section 6.3.6.

QUESTION 25
Which two characteristics of a build tool that is used in an automated build pipeline? (Choose two.)

A. It runs unit tests against code that is committed.
B. It builds your software on the production environment.
C. It builds your software when changes are committed.
D. It builds your software every 500 milliseconds.
E. It must have a plug-in for Puppet and Maven.

Correct Answer: B, C
Section:
Explanation:
The two characteristics of a build tool that is used in an automated build pipeline are A) it builds your software when changes are committed and B) it runs unit tests against code that is committed.
Automated build tools are used to detect changes to source code and then build the software that resulted from the change. Additionally, these tools can be configured to run unit tests against the code to ensure that it works as expected.

QUESTION 26
When DevOps practices are integrated into an existing organization, which two characteristics are positive indicators of DevOps maturity? (Choose two.)

A. mean time between success
B. mean time to recover
C. cone testing

D. change lead time
E. age of codebase

Correct Answer: B, D
Section:
Explanation:
Change lead time is the amount of time it takes for a proposed change to go from the idea phase to being fully deployed in production. This metric can be used to measure the speed and efficiency with which changes are implemented, which is often indicative of an organization's DevOps maturity.
Mean time to recover (MTTR) is the average amount of time it takes to restore a service or application to its working state when an issue arises. MTTR is an important metric for measuring the resilience of an organization's infrastructure, and is another indicator of DevOps maturity. (Source: Cisco Implementing DevOps Solutions and Practices using Cisco Platforms (DEVOPS) Study Manual Chapter 1, Understanding DevOps)

QUESTION 27
Which two statements about Infrastructure as Code are true? (Choose two.)

A. Test-driven development practices make use of Infrastructure as Code.
B. Infrastructure as Code refers to automated testing libraries.
C. DevOps builds upon Infrastructure as Code.
D. Infrastructure as Code is based on practices from software development.
E. Infrastructure as Code must use the same programming language as the application.

Correct Answer: C, D
Section:
Explanation:
(IaC) is a practice that allows for the automation of infrastructure configuration and deployment, allowing DevOps teams to deploy and manage infrastructure with the same release pipelines and versioning as source code [1]. IaC is based on practices from software development, and promotes the use of automation and repeatable processes to ensure consistency of deployments.

QUESTION 28
Refer to the exhibit.

```
TASK [Print the contents of the "show _ip_int_brief" variable]
*********************************************************************
ok:  [ios-xe-mgmt.cisco.com] => {
     "show_ip_int_brief": {
          "changed": false,
          "failed": false,
          "stdout" [
               "Interface          IP-Address          OK?  Method Status
Protocol\nGigabitEthernet1    10.10.20.48          YES  NVRAM     up         up
\nGigabitEthernet2       10.10.10.18          YES  other     up         up   \nGigabitEthernet3
13.13.13.13          Yes  other          up         up"
          ],
          "stdout_lines": [
               [
                    "Interface              IP-Address          OK?  Method    Status          Protocol",
                    "GigabitEthernet1       10.10.20.48         YES  NVRAM     up              up",
                    "GigabitEthernet2       10.10.10.18         YES  other     up              up",
                    "GigabitEthernet3       13.13.13.13         YES  other     up              up",
               ]
          ]
     }
}
```

The exhibit shows the output of an Ansible task that prints the contents of the show_ip_int_brief variable that was registered in a different task in the playbook.
Which expression is used to print the output of the command without its header row?

A. show_ip_int_brief[‘stdout_lines’][0]
B. show_ip_int_brief[‘stdout_lines’][1:]
C. show_ip_int_brief[‘stdout_lines’][0][1:]
D. show_ip_int_brief[‘stdout_lines’]

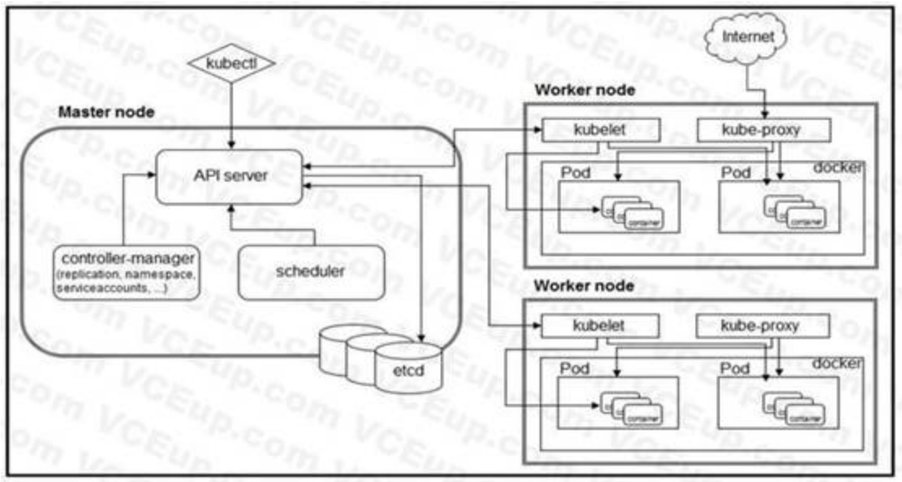
Correct Answer: C
Section:
Explanation:
--- show_ip_int_brief["~stdout_lines'][0][1:] --- stdout_lines - nested list, [0], first element of above nested list (extract of all header + interfaces, coma separated for individual elements), [1:] - 2nd, 3rd, 4th line of the above sub-list.

QUESTION 29
Fill in the blanks to describe the concepts of extending DevOps practices to the network for NetDevOps.
NetDevOps builds and manages networks as a system that enables network services to be consumed in a DevOps approach. Organizations practicing NetDevOps see changes in the_____ as routine and expected activities, with a well-defined and practiced process for_____, testing, and _____ network changes. By making them routine, network changes can be small and simple.

A. network, designing, deploying

Correct Answer: A
Section:
Explanation:
Reference: https://blogs.cisco.com/developer/embrace-netdevops-part-1

QUESTION 30
Refer to the exhibit.



A developer needs to scale the existing pods within the worked nodes. Which object should be edited to achieve this goal?

A. ReplicaSet
B. PriorityClass
C. Deployment
D. Pod

Correct Answer: A
Section:

QUESTION 31
When static routes are added to a router in a network using a CI/CD pipeline, an Ansible playbook is used to make these changes. Which steps must be added to the pipeline to validate that the changes have the intended effect on the traffic flow?

A. Add a step to run the debug ip routing command before the change, and add a step after the change to issue the no debug ip routing command.
B. Add a step to capture the routing table before the change, and add a step after the change to capture it again. Calculate the difference between the two for review.
C. Add a step to ping a host on each of the static routes before the change, and a step after to repeat the same check. Calculate the difference between the two checks for review.
D. Add a step to run the same playbook again with the debug option enabled and use grep on the log output to ensure that the commands are not applied again.

Correct Answer: B
Section:

QUESTION 32
A DevOps engineer is supporting a containerized application with multiple components running across the Kubernetes cluster. Metrics from the container (CPU and memory) and application (requests per second and heap size) are being collected by Prometheus and displayed with Grafan a. Users report transaction timeout problems with the application, but the metric graphs all look within normal levels.
Which type of failure would prevent the engineer from seeing the problem using the captured metrics?

A. Grafana has lost connectivity to Prometheus, which causes graphs to display only the cached data.
B. CPU and memory metrics from Kubernetes nodes are not accurate due to the way that containers share resources.
C. Some containers are crashing regularly and being restarted automatically by Kubernetes.
D. The metricbeat agent has crashed and is no longer sending new data to Prometheus, so the metrics are not updating.

Correct Answer: C
Section:

QUESTION 33
Which Kubernetes object is used to create a ClusterIP or NodePort?

A. service
B. pod
C. deployment
D. loadbalancer

Correct Answer: A
Section:

QUESTION 34
A user wants to deploy a new service to a Kubernetes cluster. Which two commands accomplish this goal? (Choose two.)

A. Apply
B. Install
C. Deploy
D. Create
E. Expose

Correct Answer: A, E
Section:

QUESTION 35
A developer wants to deploy a highly available web server cluster and decides to put a load balancer in front of multiple clustered nodes that run the same web service. The goal is for the load balancer to take in users and distribute the load across the whole cluster.

What kind of high-availability configuration is the developer running?

A. active
B. passive
C. active-passive
D. active-active

Correct Answer: D
Section:
Explanation:
An active-active high-availability configuration is when the load balancer is used to distribute the load across the whole cluster of nodes that are running the same web service. In this configuration, all of the nodes are active and available to serve requests at any given time. This is in contrast to an active-passive configuration, where only one node is active and the other nodes are passive and serve as backups in case of a failure.

QUESTION 36
A developer has created a deployment that should launch a pod to run their database service. The pod should launch with a metadata name of “Cisco-DB," and the developer has added it to the "Cisco" namespace in their deployment.
Which Kubernetes command confirms that the service is running and usable?

A. kubectl -n Cisco get services | grep “Cisco-DB”
B. kubectl -n Cisco get pods | grep “Cisco-DB”
C. kubectl get pods | grep “Cisco-DB”
D. kubectl -n Cisco get service | grep “Cisco-DB”

Correct Answer: B
Section:
Explanation:
The correct answer is B. kubectl -n Cisco get pods | grep "Cisco-DB". This command allows you to view the pods in the Cisco namespace and filter the list for the pod named "Cisco-DB". This will confirm that the pod is running and usable.
Reference: Cisco Implementing DevOps Solutions and Practices using Cisco Platforms (DEVOPS) Study Manual, Chapter 6, Section 6.3: Kubernetes Commands, Page 113.

QUESTION 37
Which step must be taken to enable centralized logging in a Kubernetes environment?

A. No steps need to be taken. The master node automatically aggregates logs from all worker nodes and stores them on the specified persistent volume.
B. Create a CustomResourceDefinition in each deployment that specifies the IP or names the log collector.
C. Deploy a sidecar node that aggregates logs from the entire cluster.
D. Create a DaemonSet that deploys a container with a logging agent on every node in the cluster.

Correct Answer: D
Section:
Explanation:
To enable centralized logging in a Kubernetes environment, you must create a DaemonSet that deploys a container with a logging agent on every node in the cluster. This allows all of the logs from each node to be collected in one place, allowing for easier analysis and management. Reference:
Kubernetes Documentation, Logging Architecture.

QUESTION 38
Which interface is most commonly used to integrate logging, monitoring, and alerting applications into your CI/ CD pipeline?

A. AMQP
B. SNMP
C. SSH
D. REST

Correct Answer: D
Section:
Explanation:
The most commonly used interface to integrate logging, monitoring, and alerting applications into your CI/CD pipeline is REST. Representational State Transfer (REST) is an architectural style that defines a set of constraints and properties based on HTTP. It enables developers to create APIs that are easy to use and access, and is well-suited for integrating logging, monitoring, and alerting applications into your CI/CD pipeline.

QUESTION 39
To make logging searches more efficient and useful in Kibana, an Administrator wants to implement index patterns around the hostname of some software systems. Where should this be configured?

A. Configure a new JSON object in Kibana.
B. Create a search index in Logstash.
C. Create an index pattern in Kibana.
D. Create a time filter on Kibana to look at time only.

Correct Answer: C
Section:

QUESTION 40
AppDynamics is being used to monitor your distributed Python application. Each individual container of the application is instrumented with an AppD agent. Which two configuration variables uniquely determine the module being monitored?
(Choose two.)

A. node
B. app
C. agent
D. tier
E. event

Correct Answer: A, D
Section:
Explanation:
Appdynamics Agents Install Wizard Step 2 Enter the configuration values...
https://docs.appdynamics.com/appd/4.5.x/en/application-monitoring/install-app-serveragents#InstallAppServerAgents-UsetheGettingStartedWizard Tier and Node Naming Guidelines
https://docs.appdynamics.com/appd/4.5.x/en/application-monitoring/install-app-serveragents#InstallAppServerAgents-tier-node-namingTierandNodeNamingGuidelines

QUESTION 41
The E-commerce application is being monitored using AppDynamics. AppDynamics has noticed that the application response has degraded and has identified some thread contention that might be the cause of the delays. Where in the interface does AppDynamics bring this to your attention?

A. Potential Issues section of an individual transaction
B. Transaction Score graph of a business transaction
C. Code Deadlock section of the Event List

D. Slow Calls and Errors tab of the application

Correct Answer: A
Section:
Explanation:
https://docs.appdynamics.com/display/PRO43/Thread+Contention

QUESTION 42
What are two advantages of using Configuration Management Tools? (Choose two.)

A. reduction in policy violations caused by human errors
B. reduction in administration costs
C. reduction in network changes already performed automatically
D. reduction of on-premises networking equipment
E. reduction in networking team skills

Correct Answer: A, B
Section:
Explanation:
Configuration Management Tools allow for automated configuration of networking equipment, which helps to reduce human errors and the time and money needed to manage and configure the equipment. For example, Cisco Configuration
Professional (CCP) is a configuration management tool that provides automated configuration, validation, and troubleshooting of network infrastructure devices. CCP enables administrators to configure and deploy network changes quickly and efficiently, while also reducing the costs associated with manual configuration and troubleshooting.

QUESTION 43
An end user is seeing long web page load times on the internal business application that they are trying to view. The user is seeing this issue across multiple web browsers, and other users encounter the same issue. Which action should the system administrator take to start looking for the cause of this issue?

A. Check to make sure Nginx is running.
B. Check for response times in Nginx logs.
C. Check to make sure the web API response is coming back in JSON.
D. Check the size of the database that the application is using.

Correct Answer: B
Section:

QUESTION 44
How long analysis systems such as Elasticsearch, Logstash, and Kibana Stack handle ingesting unstructured logs from different devices in various formats?

A. All devices that generate syslogs must use agents that process the local logs and transmit them in a specific format to the ELK Stack.
B. All logs are stored in their unstructured text format, and the ELK Stack performs data analysis by intelligently parsing the logs using machine learning algorithms.
C. All different message formats are parsed separately using custom filters, and the resulting structured data is stored for later analysis.
D. A single, comprehensive log format is defined on the ELK Stack. All incoming logs, regardless of format, are transformed to match the comprehensive format, and only applicable fields are populated.

Correct Answer: C
Section:
Explanation:
The ELK Stack (Elasticsearch, Logstash, and Kibana) can handle ingesting unstructured logs from various devices in different formats by running custom filters on the logs. The filters are designed to parse the log data and

extract the relevant, structured information from it, which is then stored for later analysis. This allows for faster and more accurate analysis of the data, and enables more sophisticated insights to be drawn from it.

QUESTION 45
A three-tier web application must be moved to containers. A webserver is already in place, and the middleware container can talk to a central database server. The hostname of the database server is known, but the name of the middleware server must be provided to the webserver.
In which file should the name of the middleware server be configured?

A. Docker Service discovery daemon
B. Docker Swarm
C. Docker Compose
D. Dynamic Host Configuration Protocol

Correct Answer: A
Section:

QUESTION 46
Which Kubernetes object ensures that each node is limited to running no more than one pod?

A. UniCast
B. Deployment
C. DaemonSet
D. ReplicaSet

Correct Answer: C
Section:

QUESTION 47
Refer to the exhibit.

```
---
apiVersion: v1
kind: Service
metadata:
  name: nginxapp-service
spec:
  ports:
  - port: 80
    name: http-port1
    targetPort: nginx-port
    protocol: TCP
  - port: 8080
    name: http-port2
    targetPort: nginx-port
    protocol: TCP
  selector:
    app: nginxapp
  type: LoadBalancer
```

What are the properties of the load balancer in a Kubernetes environment?

A. Has exposed ports 80 and 8080 to a private IP address and directs outgoing connections to the port named http-port1
B. Has exposed ports 80 and 8080 to a public IP address and directs incoming connections to the port named nginx-port
C. Forwards incoming traffic from the port named nginx-port to ports 80 and 8080 of nginxapp

D. Forwards any outgoing traffic from the port named nginx-port to exposed ports http-port1 andhttp-port2 of nginxapp

Correct Answer: B
Section:

QUESTION 48
Refer to the exhibit.


```
{
  "_index": "linux-servers",
  "_type": "_doc",
  "_id": "mr35OXQBMiQCMA9yrEQ6",
  "_version": 1,
  "_score": null,
  "_source": {
    "message": "<38>Aug 29 12:08:37 centos systemd-logind: Removed session
    19802.",
    "@timestamp": "2020-03-29T09:08:37.280Z",
    "type": "rsyslog",
    "@version": "1",
    "hostname": "vcs.local.lan",
    "host": "172.16.40.168"
  },
  "fields": {
    "@timestamp": [
      "2020-08-29T12:03:37.280Z"
    ]
  },
  "sort": [
    1598692117280
  ]
}
```


The JSON object represents a single entry on a centralized log server, but log data cannot be processed because of the format.
What causes the issue?

A. A hostgroup must be defined
B. The "_type" must represent the process type
C. The priority of the message must be to the server
D. The process name in the message must be parsed into a field

Correct Answer: B
Section:

QUESTION 49
Refer to the exhibit.

```
push_configs.yml content:
- hosts: "{{ CHANGED_HOST }}"
  become: yes
  become_method: enable
  connection: network_cli
  gather_facts: no
  tasks:
    - name: Push the template
      ios_config:
        src: "{{ changed_file }}"

Command:
ansible-playbook push_configs.yml -i
ansible_managed_inventory -e "CHANGED_HOST=${CHANGED_HOST}
CHANGES=${CHANGES}"

Error Message:
"msg": "paramiko: The authenticity of host '[ios-xe-mgmt-
latest.cisco.com]:8181' can't be established.\nThe ssh-rsa
key fingerprint is b'b7e974a8cbf96d464f7be3e12a86d265'."
```


The push_configs.yml playbook returns the error shown.
Which action resolves the error?

A. Install the Paramiko library on the host that runs Ansible
B. Generate a new SSH key pair and add the public key to the target machine
C. Export the ANSIBLE_HOST_KEY_CHECKING=False variable
D. Comment out the StrictHostKeyChecking=yes line from ansible.cfg

Correct Answer: D
Section:

QUESTION 50
What are two testing scenarios of the chaos engineering principle? (Choose two.)

A. maxing out CPU cores on an Elasticsearch cluster
B. removing all users from a version control system
C. executing routine in driver code to emulate I/O errors
D. blocking developers' building access
E. unplugging a core switch device

Correct Answer: A, E
Section:

QUESTION 51
A security team is running vulnerability scans against a CI/CD pipeline. The reports show that RDBMS secrets were found hardcoded in Ansible scripts. The RDBMS resides in the internal network but is accessible from a jump server that resides in a public network.
If an attacker gains access to the scripts, what is the risk exposure?

A. The Automation server is at risk of being compromised.
B. The Ansible scripts run through encrypted SSH connections.
C. The internal network is at risk of being compromised.
D. The entire CI/CD-related infrastructure is at risk.

Correct Answer: C

Section:
Explanation:
The internal network is at risk of being compromised if an attacker gains access to the Ansible scripts, as the scripts contain hardcoded secrets for the RDBMS which is accessible from a jump server in a public network. This presents a risk as the secrets can be used to gain access to the RDBMS, and from there, the attacker could potentially gain access to the internal network. Additionally, the entire CI/CD-related infrastructure could be at risk if the attacker is able to gain access to the RDBMS, as they could potentially manipulate the data or scripts in order to cause disruption or damage.

QUESTION 52
A company has a CI/CD pipeline implemented to automate application deployment. An urgent change is required in the production environment. A developer produces and tests the required change in the company's environment, but the pipeline fails when pushed.
Which action conforms to the rules of a CI/CD pipeline and enables the pipeline to pass?

A. Remove the failing test.
B. Manually deploy the change into the production environment
C. Use a backup pipeline
D. Replicate the production environment in the pipeline before applying

Correct Answer: D
Section:
Explanation:
This ensures that the change is applied in the same environment that it was tested in, and that the pipeline will pass. This is in accordance with the rule of a CI/CD pipeline that states that the same environment should be used for testing and deploying code into production. As stated in the Cisco Implementing DevOps Solutions and Practices using Cisco Platforms (DEVOPS) Study Manual, “the same environment should be used for testing and deploying code into production, or the pipeline will fail.”

QUESTION 53
An application for storing and categorizing has been developed. The application uses dual-factor authentication for user access. After authentication, users can upload sensitive dat a. The application has been hacked through system exploits and most of the saved data has been lost.
Which action prevents new security threats in the environment?

A. Use self-developed algorithms for encryption
B. Install virtual firewalls
C. Actively change the ISP provider
D. Apply all the latest patches and updates

Correct Answer: D
Section:

QUESTION 54

What is a practice of infrastructure as code?

A. Use multiple version control systems
B. Document as much as possible
C. Configure the deployment consistently
D. Test, integrate, and deploy once a day

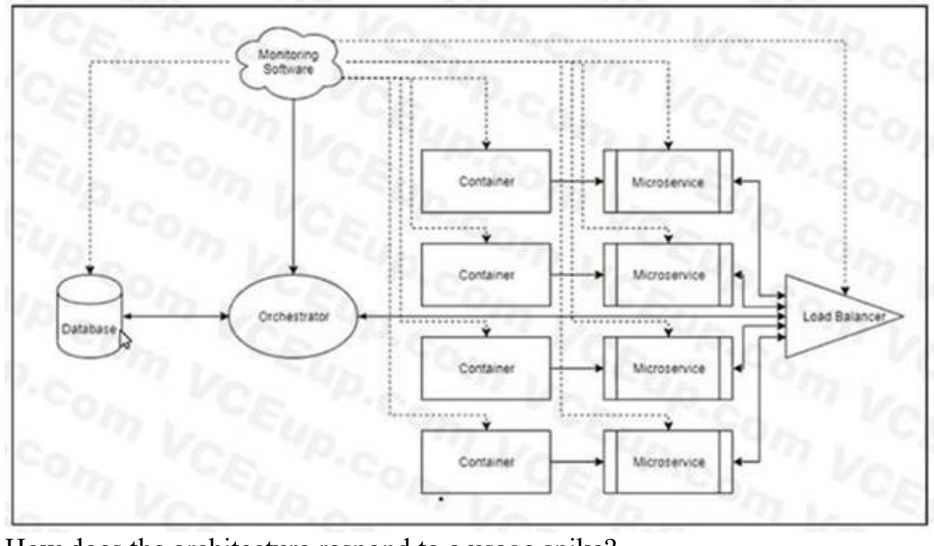
Correct Answer: C
Section:

QUESTION 55
A precheck validation is being designed for the network state in a Cl/CD pipeline This design requires:
• the CI/CD pipeline to spin up test instances.
• instances must be used to validate changes.
• changes must be validated prior to a continuous deployment workflow, and
• then push the changes to production
How should the pipeline target the required environment?

A. Use separate CI servers for each environment
B. Use different pipelines for each environment
C. Use separate Git repositories for each environment
D. Use different inventory files for each environment

Correct Answer: D
Section:

QUESTION 56
Refer to the exhibit.



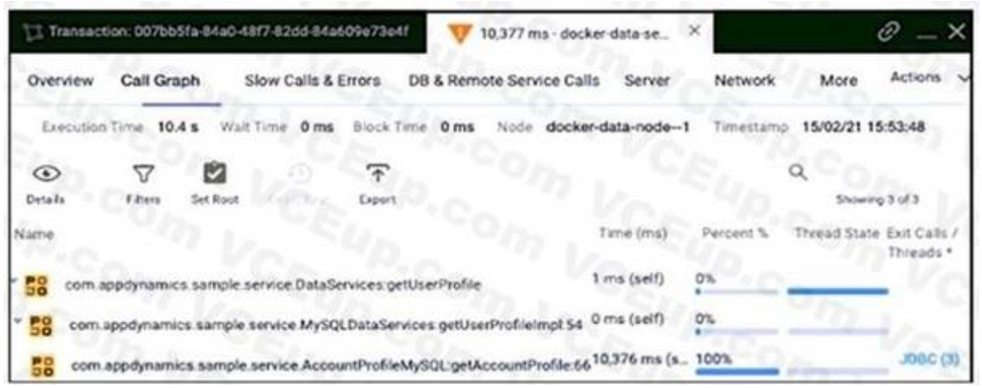
How does the architecture respond to a usage spike?

A. The monitoring software instructs the Orchestrator to increase the count of containers and to configure the load balancer accordingly
B. The database prioritizes quick and immediate queries over complicated ones to reduce the request queue

C. The Orchestrator increases the resources assigned to containers to increase performance
D. The load balancer interacts with the Orchestrator to optimize the balancing algorithm to match the incoming flow of requests

Correct Answer: A
Section:

QUESTION 57
Refer to the exhibit.



A distributed application contains data services that connect to databases via JDBC and to other remote services via HTTP. The overall response time is too long, and AppDynamics is used to investigate the root cause. From the application flow map, a specific data service running on Docker has been identified whose response time is over 10 seconds.
Which action resolves the issue?

A. Change from a JDBC call to a HTTP call to retrieve data faster
B. Run the AccountProfileMySQL service in Kubernetes
C. Explore the JDBC queries looking for optimization opportunities
D. Verify if the Docker container running MySQL is limiting CPU utilization

Correct Answer: C
Section:

QUESTION 58
Refer to the exhibit.

```
public class RestaurantEntity {
  private String name;
  private String address;
  private int rating;

  public RestaurantEntity(String name,
                          String address, int rating)
  {
    this.name=name;
    this.address=address;
    this.rating=rating;
  }
}
```

An application has been developed as a fileserver. To create this application as a fileserver. the class is used to store data in an SQL database.
Which two steps help minimize the risk of attack and compromise of the application? (Choose two.)

A. Reject string values that are greater than maximum size
B. Use floating point instead of integer for rating to avoid overflow
C. Validate the content of the name and address parameters
D. Run the application in a Docker container
E. Compile the application using Java HotSpot

Correct Answer: A, C
Section:

QUESTION 59
As a department starts following NetDevOps principles, how should the network monitoring strategy be updated to provide more visibility into the user experience?

A. Leverage machine learning tools to more quickly identify problems m syslog and SNMP data
B. Update tools to pull or stream monitoring metrics from APIs instead of using legacy protocols
C. Identify and capture the key performance indicators that describe the state of the network
D. Identify and fix network issues faster by leveraging streaming telemetry from network devices

Correct Answer: C
Section:
Explanation:

QUESTION 60
What is a benefit of monitoring the CI/CD pipeline?

A. troubleshoots distributed systems performance
B. proactively deploys new servers if needed
C. analyzes network outages that affect the network and server infrastructure
D. provides insight into how efficiently the development team is operating

Correct Answer: D
Section:

QUESTION 61
What is a benefit of Infrastructure as Code for the cloud?

A. It groups system downtime across the infrastructure
B. It enables the user to automate deployments
C. It does not require configuration.
D. It is a cost effective solution for services

Correct Answer: B
Section:

QUESTION 62
Refer to the exhibit.

```
import queue
import logging
from logging.handlers import QueueHandler, QueueListener

class Formatter:
    def __init__(self, formatters, default_formatter):
        self._formatters = formatters
        self._default_formatter = default_formatter
    def format(self, record):
        logger = logging.getLogger(record.name)
        while logger:
            if logger.name in self._formatters:
                formatter = self._formatters[logger.name]
                break
            else:
                logger = logger.parent
        else:
            formatter = self._default_formatter
        return formatter.format(record)
def main():
    que = queue.Queue(-1)
    queue_handler = QueueHandler(que)
    handler = logging.StreamHandler()
    listener = QueueListener(que, handler)
    root = logging.getLogger()
    root.addHandler(queue_handler)
    handler.setFormatter(Formatter({
        source: logging.Formatter('%(message)s -> ' + source),
        source + '.' + subsource: logging.Formatter('%(message)s -> ' + source +
'.' + subsource),
    },
        logging.Formatter('%(message)s -> <default>'),
    ))
    listener.start()
if __name__ == "__main__":
    main()
```

A Python script implements a logger server. The log receives a message from Base that contains this text: TextMessage. How is the log formatted?

A. Base Alter: TextMessage
B. Undefined: TextMessageBase
C. TextMessage -> Base
D. TextMessage -> Alter Base

Correct Answer: B
Section:

QUESTION 63

A development team uses Kubernetes for application development. Any changes on ConfigMap are performed manually for each development, test, and production environment. The edits are performed to deploy applications. This approach causes inconsistent deployments across all environments.

Which practice improves the consistency of the deployments?

A. Implement environment variables within the ConfigMaps and store the variable definitions separately from the master branch where the ConfigMaps are stored
B. Generate the ConfigMaps specific to the environment by using a templating language such as Jinja2 and store the ConfigMaps in unique branches of a repository
C. In the master branch where the ConfigMaps are stored, create a branch for each environment that contains an environment-specific ConfigMap.
D. Create a unique repository for each environment that contains ConfigMaps for that environment to ensure that each environment can be deployed independently

Correct Answer: A
Section:

QUESTION 64
A DevOps engineer must build a Docker image to containerize an application. Then the image must be pushed to a repository on Docker Hub in a CI/CD pipeline using GitHub Actions.
Which approach securely encrypts the Docker Hub access token as an environment variable within the CI/CD pipeline?

A. Store the access token with GitHub environment variables
B. Store the access token with GitHub encrypted secrets
C. Store the access token in an environment file in the repository
D. Hard code the access token in the repository with Base64 encoding

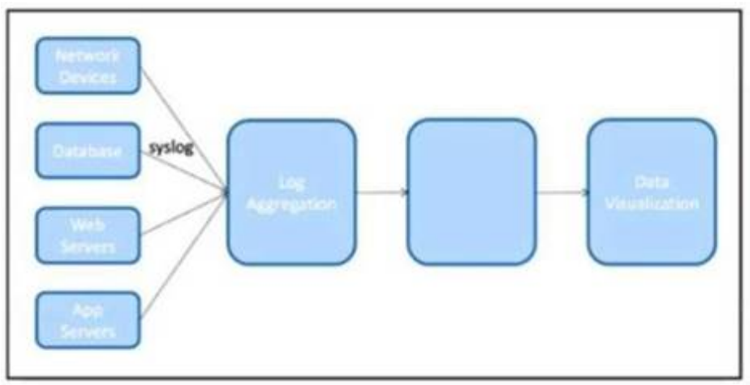
Correct Answer: B
Section:

QUESTION 65
What is the impact of using the Drone.io CI/CD tool on the local installation step?

A. slows down the development
B. delays the deployment of components
C. speeds up the procedure
D. complicates the application process

Correct Answer: B
Section:

QUESTION 66
Refer to the exhibit.



The IT team is creating a new design for a logging system. The system must be able to collect logs from different components of the infrastructure using the SNMP protocol. When the data is collected

it will need to be presented in a graphical UI to the NOC team.
What is the architectural component that needs to be placed in the unlabeled box to complete this design?

A. message queue
B. web server
C. log parser
D. time-series database

Correct Answer: D
Section:
Explanation:
A log parser is a software component that is used to collect and parse log data from various sources, such as infrastructure devices, applications, and services. It is responsible for collecting log data from the various sources and then mapping it to a specific format that can be easily consumed and interpreted by the NOC team. The log parser can also be used to filter out irrelevant data and store the processed data in a time-series database. This data can then be used by the NOC team to generate visualizations and reports, which will help them identify and address any issues within the infrastructure. (Source: Cisco Implementing DevOps Solutions and Practices using Cisco Platforms (DEVOPS) Study
Manual Chapter 5, Understanding Logging and Log Analysis)

QUESTION 67
Refer to the exhibit.

```
---
version: '3'
services:
  database:
    image: postgres
    container_name: postgre_data
    ports:
      - "5432:5432"
    environment:
      POSTGRES_DB: "postgres_database"
      POSTGRES_USER: "postgres"
      POSTGRES_PASSWORD: "testpass"
    networks:
      - "database_net"
    healthcheck:
      test: ['CMD','psql', '--username', 'postgres']
      interval: 10s
      timeout: 10s
      retries: 5

networks:
  database_net:
    driver: "bridge"
```

A docker-compose.yml file implements a postgres database container.
Which .gitlab-ci.yml code block checks the health status of the container and stops the pipeline if the container is unhealthy?

A.

```
Validate Application Infrastructure:
  stage: validate_infrastructure
  before_script:
      - apk add --no-cache docker-compose
  script:
    - docker-compose up
    - sleep 15s
    - health_state = $(docker container logs
    postgre_data | grep healthcheck)
    - $health_state == 'healthy'
```

B.

```
Validate Application Infrastructure:
  stage: validate_infrastructure
  before_script:
      - apk add --no-cache docker-compose
  script:
    - docker-compose up
    - sleep 15s
    - health_state = $(docker container attach
    postgre_data && \
      psql -username postgres status)
    - $health_state == 'running'
```

C.

```
Validate Application Infrastructure:
  stage: validate_infrastructure
  before_script:
      - apk add --no-cache docker-compose
  script:
    - docker-compose up -d
    - sleep 15s
    - health_state=$(docker container inspect
    postgre_data --
    format='{{.State.Health.Status}}')
    - if [[ "$health_state" != "healthy" ]]; then
    exit 1; fi
```

D.

```
Validate Application Infrastructure:
  stage: validate_infrastructure
  before_script:
      - apk add --no-cache docker-compose
  script:
    - docker-compose up
    - sleep 15s
    - health_state = $(docker container stats
    postgre --health_status)
    - if [[ "$health_state" != "running" ]]; then
    exit 1; fi
```

E. Option A

F. Option B

G. Option C

H. Option D

Correct Answer: C
Section:

QUESTION 68
Refer to the exhibit.

```
<34>1 2020-10-11T22:14:15.003Z 161.20.30.44 su - ID47 - BOM'su root' failed for DevNetUser on /dev/pts/8
```

The text represents a syslog message sent from a Linux server to a centralized log system.
Based on the format of the log message, how must the functionality of the log parser be extended to improve search capabilities?

A. Reverse lookup the IP address to add a hostname field

B. Convert the date to the time zone of the system

C. Configure the Linux machine to add a UID field to messages

D. Filter out the text of the message to speed up searches

Correct Answer: D
Section:

QUESTION 69
Which approach must be used to integrate DevOps practices into the team structure in an existing organization?

A. Create a team that can deliver all the stages with active cooperation between the team members
B. Create a team that can deliver all the stages with well-defined roles and a communication structure between team members
C. Create a team for each stage with structured communication channels
D. Create a team for each stage with active cooperation between the teams

Correct Answer: A
Section:

QUESTION 70
Refer to the exhibit.

```
$ kubectl create deployment hello-app --
image=k8s.gcr.io/echoserver:1.4
deployment.apps/hello-app created

$ kubectl get pods
NAME                         READY   STATUS    RESTARTS   AGE
hello-app-857b7d747f-xg8kj   1/1     Running   0          35s

$ kubectl get services
NAME         TYPE        CLUSTER-IP   EXTERNAL-IP   PORT(S)   AGE
kubernetes   ClusterIP   10.96.0.1    <none>        443/TCP   44h
```

Which action allows the development team to reach the deployed application?

A. Create an init container to initialize routes for the containers in the pod
B. Create a service to expose the logic running in the pod
C. Delete the deployment and redeploy by using a ReplicaSet.
D. Delete the deployment and redeploy by using the latest tag for the container image

Correct Answer: B
Section:

QUESTION 71
An organization is developing an application using Git. Each team member is assigned to work on specific parts of the application. At the end of each task, individual code parts are merged in the main build.
Which two requirements should be implemented to increase the likelihood of continuous integration? (Choose two.)

A. Changes must be scheduled to deploy at a specific time that has minimal traffic
B. Changes must include automated tests
C. Changes must be validated during deployment to the production environment
D. Smaller, individually testable changes must be merged first
E. Team members must be responsible for the code committed by any team member

Correct Answer: B, C
Section:

QUESTION 72
What is an advantage of using configuration management tools to automate infrastructure services?

A. eliminates the need to run integration tests within the CI/CD pipeline
B. provides high native monitoring of services
C. eliminates the need for CI/CD tools
D. integrates with container orchestration

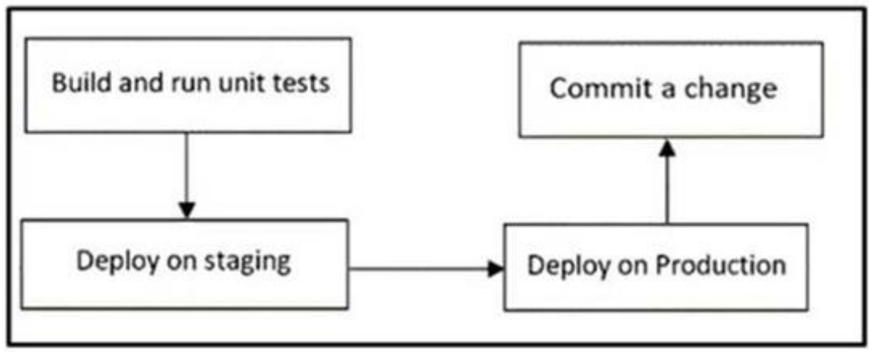
Correct Answer: D
Section:

QUESTION 73
An application is being developed to be used by the HR department of a company on a global scale.
The application will be used as a central repository for employee contracts. For user access, a RADIUS server will be used with authorized user groups.
Which action must be used to prevent developers from accidentally committing secrets in the code?

A. Add a unit test to block the secrets
B. Add a precommit Git hook to block the secrets
C. Add dast to the repository to block the secrets
D. Add a job in the CI build to block the secrets

Correct Answer: D
Section:

QUESTION 74
Refer to the exhibit.



An organization has issues with code-based failures after implementing a CI/CD pipeline to automate the builds and deployment phases of an application.
Which action must be added to the pipeline, after the application is deployed in the staging environment to minimize failures and to ensure a successful continuous deployment?

A. Restructuring and monitoring tests must be run after it is promoted to production
B. Restructuring and monitoring tests must be run before it is promoted to production
C. Functional and nonfunctional tests must be run after it is promoted to production
D. Functional and nonfunctional tests must be run before it is promoted to production

Correct Answer: D
Section:
Explanation:
According to Cisco's Implementing DevOps Solutions and Practices using Cisco Platforms (DEVOPS) Study Manual, it is important to run functional and non-functional tests before promoting the application to production. This is essential in order to identify and address any issues that could cause code-based failures. Additionally, a pipeline should include automated tests that can be used to verify that processes are running correctly. By running

these tests before promoting to production, you can ensure that any potential issues are identified and addressed before the application is released.

QUESTION 75
An application has been designed based on microservices. The application is deployed on Kubernetes using multiple pods that share the same IP address. Each pod is responsible for a service in the application.
Which command validates the success of the application deployment?

A. kubectl get pods -o wide -w
B. kubectl rollout status deployment
C. kubectl describe pods/
D. kubectl rollout history deployment

Correct Answer: A
Section:

QUESTION 76
A developer is creating an application based on microservices. The application will be used as a central repository for all company's documents. One of the microservices in the application will perform image processing. This microservice must autoscale to meet the current load and avoid down time.
Which metric must be used to trigger autoscaling events?

A. network
B. CPU/GPU
C. disk I/O
D. memory

Correct Answer: B
Section:

QUESTION 77
What is a capability of node-level logging in Kubernetes?

A. Using the Kubernetes JSON logging driver enables log persistence
B. Output that is written to stdin is retrieved by using kubectl
C. Output that is written to stderr is not logged or retrievable by using kubectl
D. Using the local logging driver of Docker enables log persistence

Correct Answer: A
Section:

QUESTION 78
Which Dockerfile yields the most predictable builds?

A.

```
FROM python:3.8.0b2-buster

RUN apt update -y
RUN apt upgrade -y
RUN apt install git -y

RUN pip install requests==2.22.0
```

B.

```
FROM python

RUN apt update -y
RUN apt upgrade -y
RUN apt install git -y

RUN pip install requests
```


C.

```
FROM python:3.8.0b2-buster

RUN apt update -y
RUN apt install git -y

RUN pip install requests==2.22.0
```

D.

```
FROM python:latest

RUN apt update -y
RUN apt install git -y

RUN pip install requests==2.22.0
```

Correct Answer: C
Section:

QUESTION 79
What is the purpose of using sysprep when developing a Microsoft Windows-based golden image process?

A. prepares a new host to accept a hard drive image built on another machine
B. removes all host-specific information and components from the local machine
C. installs all the latest security patches and OS updates to the local machine
D. writes the local hard drive image to an ISO file that can be deployed to another machine

Correct Answer: B
Section:

QUESTION 80
An IT department needs to deploy a new application named 'Entfin434772390' across the entire enterprise. The deployment must gradually transfer user traffic from an on older and nearly identical version of the application named
'Entfin027549321'. Both versions of the application are running in the production environment.
Which release strategy should be used by the IT department?

A. agile
B. canary
C. rollbacks
D. blue/green

Correct Answer: B
Section:

QUESTION 81
Refer to the exhibit.

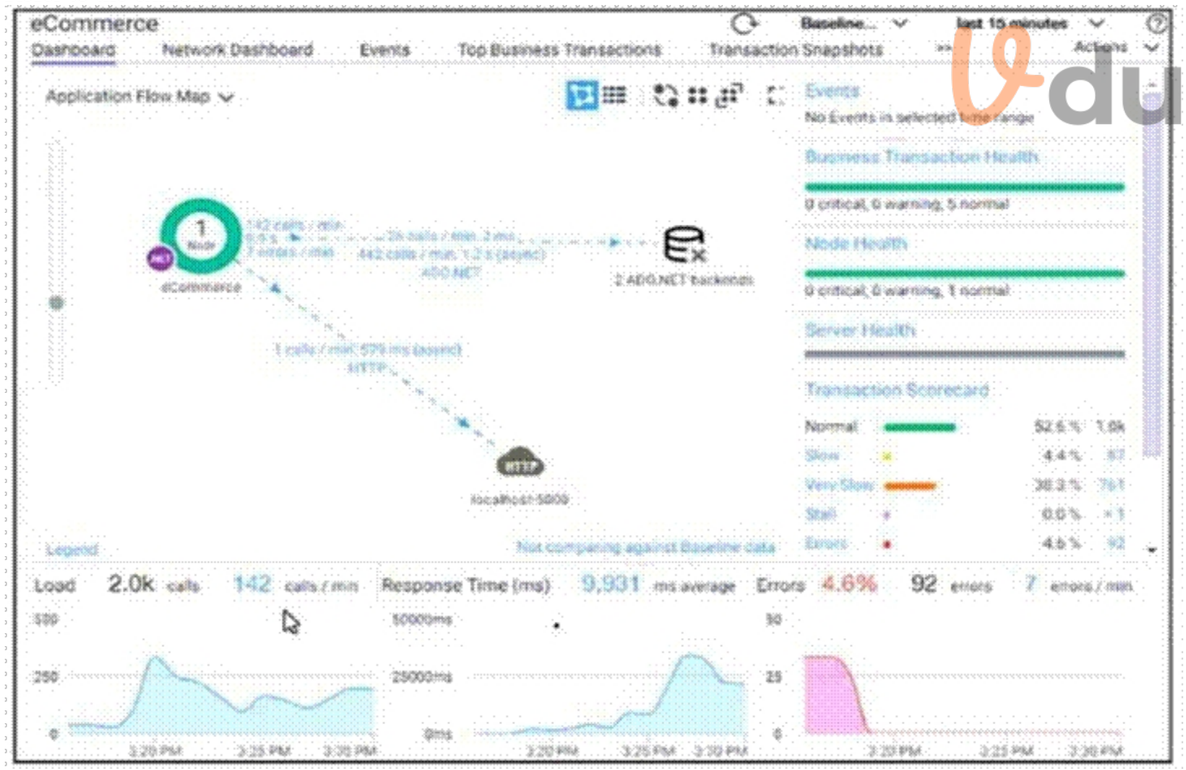
```
kind: pipeline
name: default

steps:
- name: test
  image: python
  commands:
  - pip install -r requirements.txt
  - pytest
```

Which CI solution uses this file?

A. Drone
B. GitLab CI
C. Travis CI
D. Jenkins

Correct Answer: A
Section:
Explanation:
syntax for GitLab CI, Travis CI & Jenkins are "stage...", while Drone use "steps..." Here are the configuration files I referred https://docs.drone.io/pipeline/environment/syntax/
https://docs.gitlab.com/ee/ci/yaml/includes.html https://blog.travis-ci.com/2019-05-30-setting-upa-ci-cd-process-on-github https://www.jenkins.io/doc/pipeline/examples/

QUESTION 82
Refer to the exhibit.



An application for data storing and processing has been created. The application is time-sensitive and manages confidential data AppDynamics identifies error transactions within a distributed application.
Which action will help resolve the errors?

A. Rewrite the SQL query identified in the transaction to be more efficient
B. Log in to the node directly and investigate the errors by reviewing log files
C. Drill down to investigate and identify the errors
D. Scale out the node horizontally

Correct Answer: B
Section:
Explanation:
https://docs.appdynamics.com/appd/23.x/latest/en/application-monitoring/remoteQuestions& Answers PDF P-66services/monitor-databases

QUESTION 83
Refer to the exhibit.

Script

```
import requests
URL = "https://webexapis.com/v1/people/me"
TOKEN = "SFS"

headers = {
    "Authorization": "Bearer " + TOKEN
}

response = requests.request("GET", headers = headers)
print(response.json['displayName'])
```

Error message

```
Traceback (most recent call last):
  File "cicd.py", line 1, in <module>
    import requests
ImportError: No module named requests
```


A developer is creating a script to test APIs. The Cisco Webex API and a CI/CD pipeline are tested to ensure that the script runs without problems. The script is executed without issues locally, but the CI/CD system returns the error shown.
What is the problem with the script?

A. The CI/CD system is configured incorrectly to import the dependencies to the code
B. The code is pushed incorrectly to the CI/CD system
C. The version of Python is wrong in the CI/CD pipeline
D. The CI/CD system is configured incorrectly to download the required dependencies

Correct Answer: D
Section:
Explanation:
The Cisco Webex API and CI/CD pipeline need to be configured correctly to download the required dependencies in order for the script to run without issues. If the dependencies are not downloaded correctly, the script will fail to run properly and throw an error. The Cisco Implementing DevOps Solutions and Practices using Cisco Platforms (DEVOPS) Study Manual provides a detailed explanation of how to properly configure the CI/CD pipeline for the Cisco Webex API.

QUESTION 84
Which Dockerfile produces an efficient image rebuild when the exposed port Python dependency, or MyApp source code is modified?

A.

```
FROM python

EXPOSE 8082

WORKDIR /home/app
COPY ./my-app/requirements.txt /home/app/requirements.txt
RUN pip install -r requirements.txt
COPY ./my-app/ /home/app
```

B.

```
FROM python:3.7.4-buster

EXPOSE 8082

WORKDIR /home/app
COPY ./my-app/ /home/app
RUN pip install -r requirements.txt
```

C.

```
FROM python:latest

WORKDIR /home/app
RUN pip install -r requirements.txt
COPY ./my-app/ /home/app

EXPOSE 8082
```

D.

```
FROM python:3.7.4-buster

WORKDIR /home/app
COPY ./my-app/requirements.txt /home/app/requirements.txt
RUN pip install -r requirements.txt
COPY ./my-app/ /home/app

EXPOSE 8082
```

E. Option A
F. Option B
G. Option C
H. Option D

Correct Answer: B
Section:

QUESTION 85
A new banking application is being developed as the main currency exchange resource for all the customers on a global scale. The application must comply with the security based on the deployed region. Therefore, the CI/CD pipeline must be created with the highest security possible.
Which approach accomplishes this goal?

A. Give the accounts used in the CI/CD pipeline full administrative rights to all applications
B. Use the same passwords across the entire CI/CD pipeline
C. Ensure that secrets are not inadvertently passed on during builds for pull requests via CI/CD pipeline

D. Never use one-time passwords in CI/CD pipeline

Correct Answer: C
Section:

QUESTION 86
An IT team plans to deploy a new service built on top of an existing service. The capacity needed for the new service is difficult to estimate because the demand for the new service is undetermined. The team has these deployment requirements:
• A subset of the users of the original service must be migrated to the new service based on their profile
• The new service must be rolled back easily if capacity exceeds estimates Which deployment strategy must be used?

A. rolling
B. blue/green
C. geolocation
D. canary

Correct Answer: D
Section:

QUESTION 87
DRAG DROP
Construct an Ansible script to gather information about target routers and then use it to apply no ip redirects to every interface on each device. Drag and drop the code from the bottom onto the correct location in the exhibit to complete the tasks section of the Ansible playbook so that it accomplishes your goal.

Select and Place:

```
tasks:
  - name: Get info from devices
    [          ]
      provider: "{{ credentials }}"
    [          ] dev_info
  - name: Add 'no ip redirects' to all interfaces
    [          ]
      provider: "{{ credentials }}"

      lines:
          - "no ip redirects"
      parents: "interface {{ item.key }}"
    with_items: "{{ dev_info['ansible_facts']['ansible_net_interfaces'] | dict2items }}"
```

debug: | register: | variable:

ios_conf_t: | ios_info: | ios_facts:

ios_command: | ios_config:

Correct Answer:

```
tasks:
  - name: Get info from devices
    ios_conf_t:
      provider: "{{ credentials }}"
    register: dev_info
  - name: Add 'no ip redirects' to all interfaces
    ios_config:
      provider: "{{ credentials }}"

      lines:
          - "no ip redirects"
        parents: "interface {{ item.key }}"
      with_items: "{{ dev_info['ansible_facts']['ansible_net_interfaces'] | dict2items }}"
```

debug: | | variable:

	ios_info:	ios_facts:

ios_command: | |

Section:
Explanation:

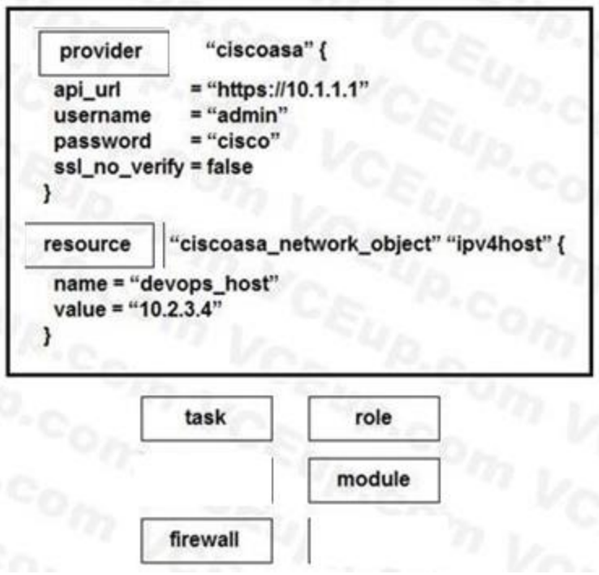
QUESTION 88
DRAG DROP
Drag and drop the commands from the bottom onto the correct Terraform code in the exhibit to push a network object to a Cisco ASA Firewall device.

Select and Place:

```
[ ]  "ciscoasa" {
  api_url      = "https://10.1.1.1"
  username     = "admin"
  password     = "cisco"
  ssl_no_verify = false
}

[ ]  "ciscoasa_network_object" "ipv4host" {
  name = "devops_host"
  value = "10.2.3.4"
}
```

task	role
provider	module
firewall	resource

Correct Answer:

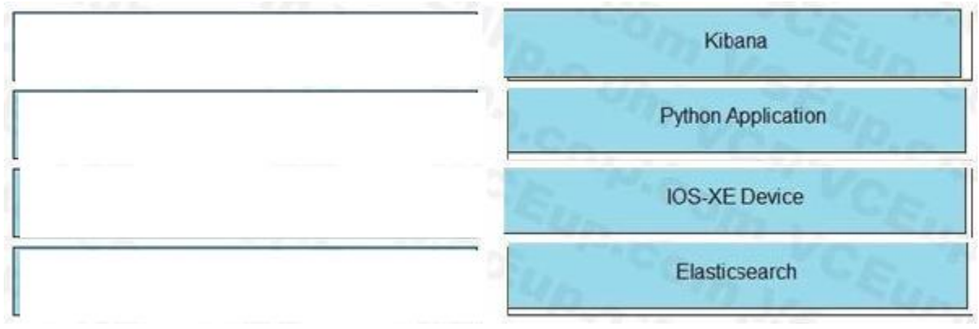


Section:
Explanation:

QUESTION 89
DRAG DROP
An application is being built to collect and display telemetry streaming data. Drag and drop the elements of this stack from the left onto the correct functions on the right.

Select and Place:

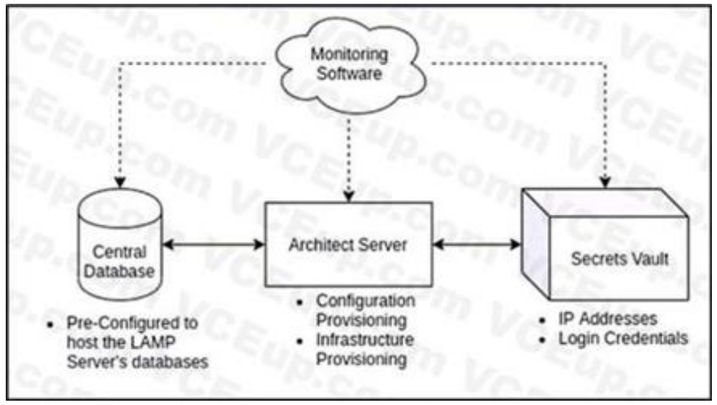
Correct Answer:



Section:

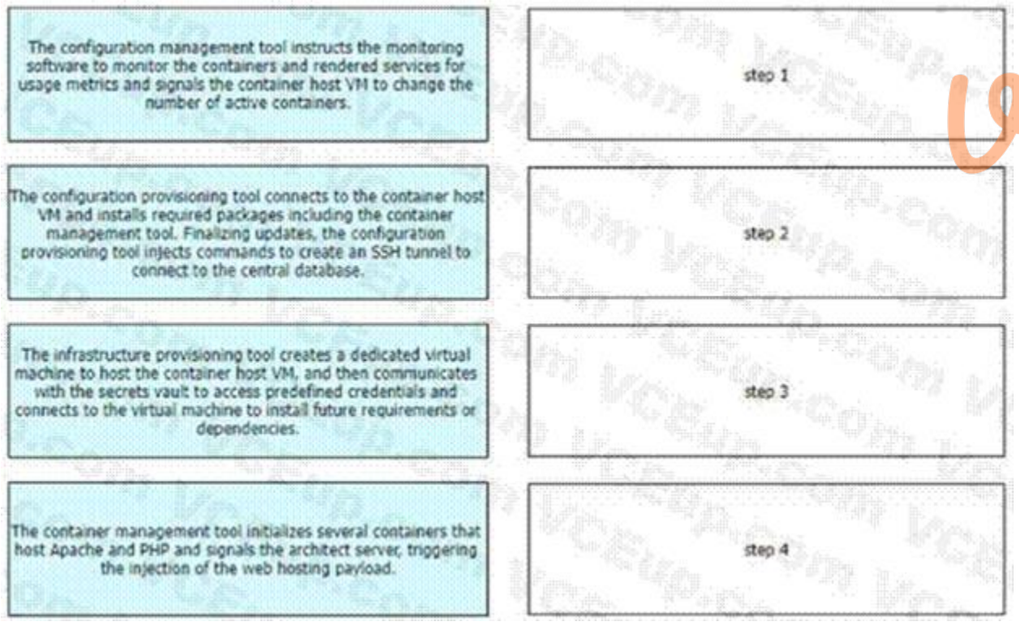
Explanation:

QUESTION 90
DRAG DROP

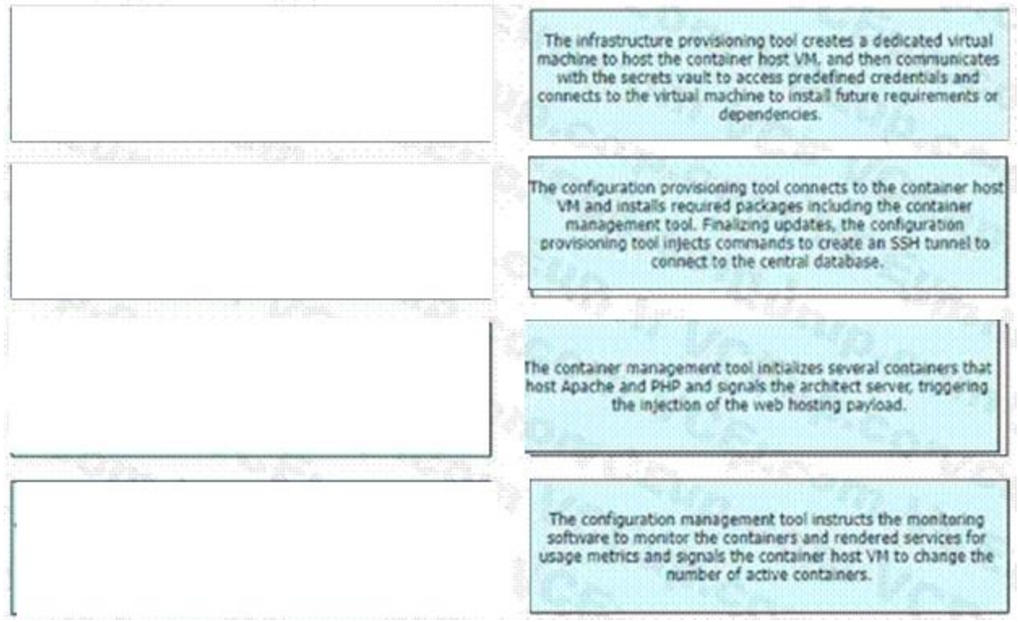


Refer to the exhibit. A containerized application that leverages a container host VM must be deployed. Drag and drop the events on the left onto their related steps on the right in order to describe the sequence behind the process.

Select and Place:



Correct Answer:



Section:
Explanation:

QUESTION 91
DRAG DROP
A developer must create a GitLab CI/CD pipeline with these requirements:
• builds an on-demand test environment
• deploys configurations
• verifies the results
Drag and drop the code from the bottom onto the box where the code is missing to complete the GitLab CI/CD pipeline. Not all options are used.

Select and Place:

```
  stages:
  - [                    ]
  - [                    ]
  - deploy_to_prod_env

deploy_to_test_env:
  image: devs/ansible:ubuntu1604
  stage: deploy_to_test_env
  script:
    - cd /project/build_env/
    - [                    ] apply -auto-approve
    - cd /project/conf/
    - [                    ] -i hosts routers.yml
  environment:
    name: test
  only:
    - test

check_test_environment:
  image: ciscotestautomation/pyats:latest-robot
  stage: check_test_environment
  environment:
    name: test
  only:
    - test
  script:
    - cd project
    - robot --noncritical noncritical --variable testdata:./testdata.yml
test_checks.robot
...
```

ansible-playbook	ansible	check_test_environment
deploy_to_test_env	terraform	deploy

Correct Answer:

```
  stages:
  - deploy_to_test_env
  - [                    ]
  - deploy_to_prod_env

deploy_to_test_env:
  image: devs/ansible:ubuntu1604
  stage: deploy_to_test_env
  script:
    - cd /project/build_env/
    - terraform apply -auto-approve
    - cd /project/conf/
    - check_test_environment -i hosts routers.yml
  environment:
    name: test
  only:
    - test

check_test_environment:
  image: ciscotestautomation/pyats:latest-robot
  stage: check_test_environment
  environment:
    name: test
  only:
    - test
  script:
    - cd project
    - robot --noncritical noncritical --variable testdata:./testdata.yml
test_checks.robot
...
```

ansible-playbook	ansible	
		deploy

Section:

Explanation:

QUESTION 92
DRAG DROP
Drag and drop the steps in Gartner's public cloud cost management framework from the left into the order on the right.

Select and Place:

Correct Answer:

Section:
Explanation:

QUESTION 93
DRAG DROP
A developer is creating an application where each service uses a different operating system. The application components need to be isolated but must have the ability to communicate with each other.
Drag and drop the entries from the left into the order on the right to create a Dockerfile that will accomplish this goal.

Select and Place:

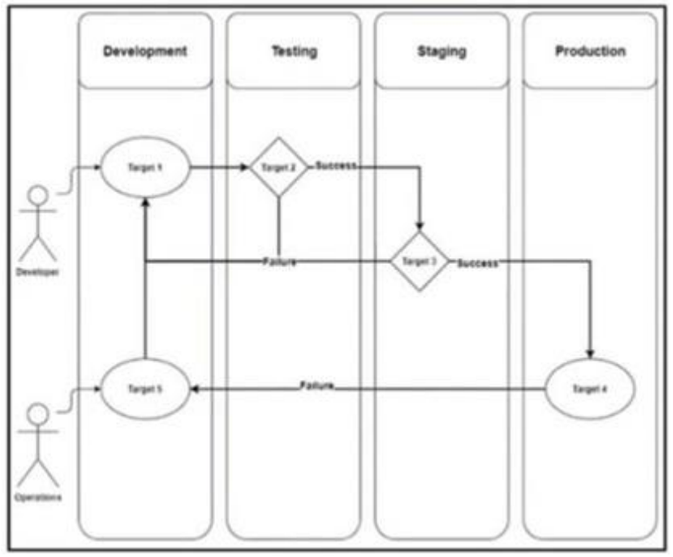
ENV CONFIG_PATH=/etc/application/conf/	step 1
ENTRYPOINT /path/to/the/app/entrypoint.sh	step 2
FROM example.com/application:latest	step 3
ADD config.ini ${CONFIG_PATH}	step 4

Correct Answer:

	FROM example.com/application:latest
	ENV CONFIG_PATH=/etc/application/conf/
	ADD config.ini ${CONFIG_PATH}
	ENTRYPOINT /path/to/the/app/entrypoint.sh

Section:
Explanation:

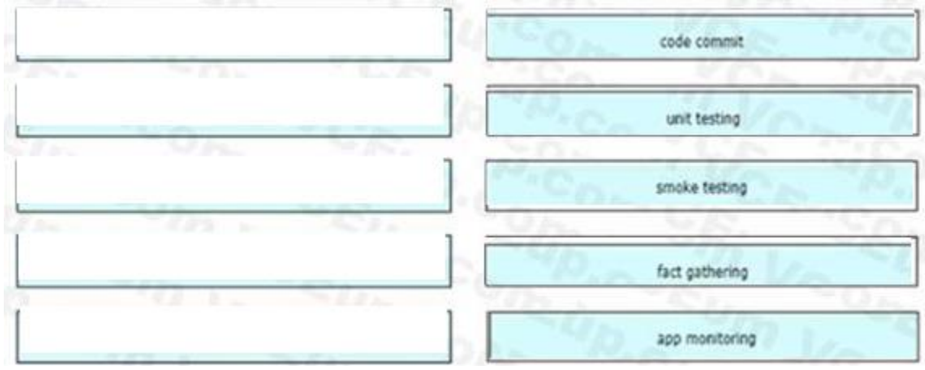
QUESTION 94
DRAG DROP
Refer to the exhibit.



A development team is designing an application that will include multiple components and services.
To streamline the process, CO/CD must be implemented.
Drag and drop the CI/CD pipeline stages from the left onto the targets on the right.

Select and Place:

Correct Answer:



Section:
Explanation:

QUESTION 95
DRAG DROP
Drag and drop the code from the bottom onto the box where the code is missing to create a Terraform configuration that builds the network environment for a multitier software application.
More EPG, Contract, and Filter definitions have been removed from the code.

Select and Place:

```
resource "aci_application_profile" "production_multi_app" {
  tenant_dn  = aci_tenant.production_tenant.id
  [                              ] = "multi_app_prod"
  name_alias = "multi_ap_prod"
  prio       = "level1"
}
resource "aci_application_epg" "prod_web" {
[                                ] =
aci_application_profile.development_multi_app.id
  name                = "web"
  name_alias          = "Nginx"
  relation_fv_rs_bd   = [                    ]
}
resource "aci_filter" "db_traffic" {
  tenant_dn = [                              ]
  name      = "db_traffic"
}
resource "aci_filter_entry" "userdb" {
  filter_dn   = [                            ]
  name        = "userdb"
  [                              ] = "ip"
  prot        = "tcp"
  d_from_port = "3306"
  d_to_port   = "3306"
}
```

aci_filter.db_traffic.id	application_profile_dn
aci_tenant.production_tenant.id	ether_t
aci_bridge_domain.production_bd.id	name

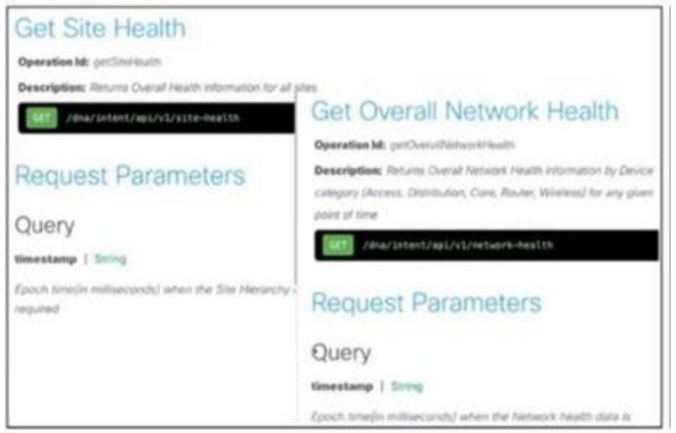
Correct Answer:

```
resource "aci_application_profile" "production_multi_app" {
  tenant_dn  = aci_tenant.production_tenant.id
  [          name            ] = "multi_app_prod"
  name_alias = "multi_ap_prod"
  prio       = "level1"
}
resource "aci_application_epg" "prod_web" {
[    application_profile_dn    ] =
aci_application_profile.development_multi_app.id
  name                = "web"
  name_alias          = "Nginx"
  relation_fv_rs_bd   = [aci_bridge_domain.production_bd.id]
}
resource "aci_filter" "db_traffic" {
  tenant_dn = [aci_tenant.production_tenant.id]
  name      = "db_traffic"
}
resource "aci_filter_entry" "userdb" {
  filter_dn   = [     aci_filter.db_traffic.id     ]
  name        = "userdb"
  [          ether_t          ] = "ip"
  prot        = "tcp"
  d_from_port = "3306"
  d_to_port   = "3306"
}
```

[ ] [ ]
[ ] [ ]
[ ] [ ]

Section:
Explanation:

QUESTION 96
DRAG DROP



Refer to the exhibit. A developer is creating a health check monitoring script that queries information from the Cisco DNA Center platform. The script must trigger an alert if a site health statistic named accessGoodCount drops below 80 and if a network statistic named latestHealthScore is 95 or less.
Drag and drop the code snippets from the bottom onto the blanks in the code to monitor the site and network health on a Cisco DNA Center platform instance. Options may be used more than once. Not all options are used.

Select and Place:

```
BASE_URL = 'https://sandboxdnac.cisco.com'
NETWORK_HEALTH_URL = '/dna/intent/api/v1/network-health'
SITE_HEALTH = '/dna/intent/api/v1/site-health'
timestamp = datetime.timestamp()
data = {
    'X-Auth-Token': "asfds"
}
info = {
    [                              ] : timestamp
}
while True:
    [                              ]
    response = requests.request('GET', url,
    headers=data, [                ]=info)
    if response.json()[0]['accessGoodCount'] < 80:
        trigger_site_alert()
    [                              ]
    response = requests.request('GET', url,
    headers=data, [                ]=info)
```

url = BASE_URL + SITE_HEALTH	params
url = BASE_URL + NETWORK_HEALTH_URL	'query'
"info"	'timestamp'

Correct Answer:

Section:
Explanation:

QUESTION 97
DRAG DROP
A DevOps engineer is designing a precheck validation of the network state in a CI/CD pipeline and must implement this workflow:
• Take a source Docker image named alpine
• Define two stages named build and push
• Check network connectivity before the stages run
• Fetch the latest Docker image
• Create a new Docker image and push it to the registry
• Tag the new Docker image as the latest version
Drag and drop the code snippets from the bottom onto the boxes in the GitLab CI configuration to achieve the requirements for the design. Not all options are used.

Select and Place:

Correct Answer:

```
image: alpine
stages:
  - build
  - push

[                          ]:

  - echo -n $CI_JOB_TOKEN | docker login -u gitlab-ci-token
--password-stdin $CI_REGISTRY

  - [                      ]

Build:
  stage: build
  script:

  - [                      ]  --pull --build-arg VCS_REF=$CI_COMMIT_SHA
--build-arg VCS_URL=$CI_PROJECT_URL --tag $CI_REGISTRY_IMAGE:$CI_COMMIT_SHA
    - docker push $CI_REGISTRY_IMAGE:$CI_COMMIT_SHA
Push:
  stage: push
  script:

  - [                      ]  $CI_REGISTRY_IMAGE:$CI_COMMIT_SHA*

$CI_REGISTRY_IMAGE:latest
    - docker push $CI_REGISTRY_IMAGE:latest
```

docker tag	ping $DEFAULT_GATEWAY -c 1
before_script	telnet

Correct Answer:

Correct Answer:

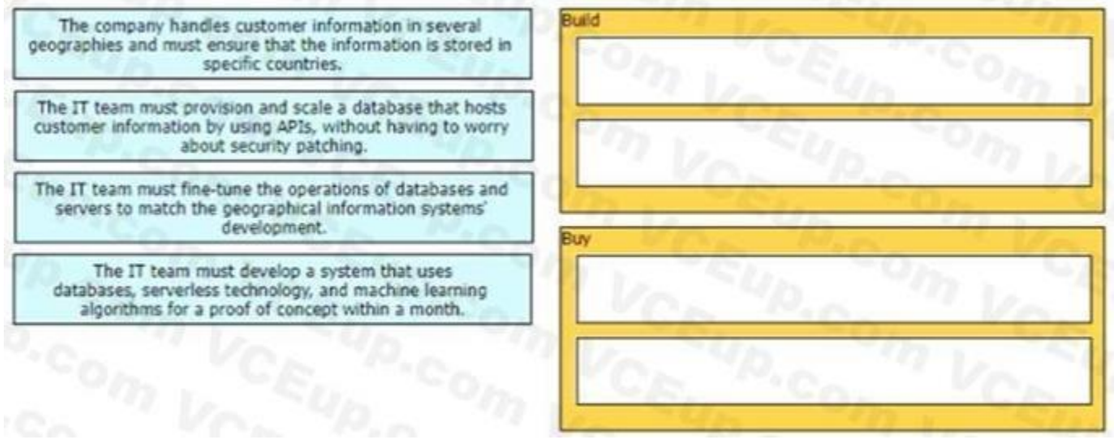
```
image: alpine
stages:
  - build
  - push

[ before_script ]:

  - echo -n $CI_JOB_TOKEN | docker login -u gitlab-ci-token
--password-stdin $CI_REGISTRY

  - [ ping $DEFAULT_GATEWAY -c 1 ]

Build:
  stage: build
  script:

  - [ docker tag ]  --pull --build-arg VCS_REF=$CI_COMMIT_SHA
--build-arg VCS_URL=$CI_PROJECT_URL --tag $CI_REGISTRY_IMAGE:$CI_COMMIT_SHA
    - docker push $CI_REGISTRY_IMAGE:$CI_COMMIT_SHA
Push:
  stage: push
  script:

  - [ docker tag ]  $CI_REGISTRY_IMAGE:$CI_COMMIT_SHA*

$CI_REGISTRY_IMAGE:latest
    - docker push $CI_REGISTRY_IMAGE:latest
```

docker tag	ping $DEFAULT_GATEWAY -c 1
before_script	telnet

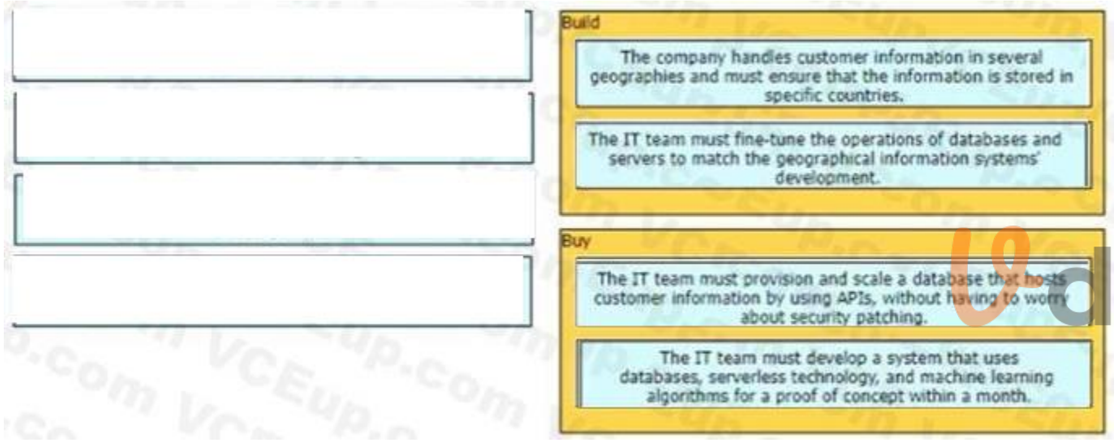
Section:
Explanation:

QUESTION 98
DRAG DROP
Drag and drop the scenarios from the left onto the cloud strategy categories on the right.

Select and Place:



Correct Answer:



Section:
Explanation:

QUESTION 99
DRAG DROP
Drag and drop the code from the bottom onto the box where the code is missing to post a message to a Cisco Webex space. Not all options are used.

Select and Place:

```
import requests as req
import json


token = '...'
header = {'                ': 'Bearer {}'.format(token)}

room_id = json.loads(

    req.request('GET', 'https://webexapis.com/v1/                ',

headers=header).text

)['items'][0]['id']


req.request(
    'POST', 'https://webexapis.com/v1/                ', headers=header,

                    =(

        'roomId': room_id,

        'text': 'ERROR REPORT',

        'markdown': '**ERROR REPORT**'

    }
)
```

messages	data	toPersonEmail	rooms
Authorization	attachments	Content	

Correct Answer:

```
import requests as req
import json


token = '...'
header = {'Authorization': 'Bearer {}'.format(token)}

room_id = json.loads(
    req.request('GET', 'https://webexapis.com/v1/rooms',
headers=header).text
)['items'][0]['id']

req.request(
    'POST', 'https://webexapis.com/v1/messages', headers=header,
    data ={
        'roomId': room_id,
        'text': 'ERROR REPORT',
        'markdown': '**ERROR REPORT**'
    }
)
```

		toPersonEmail	
	attachments	Content	

Section:
Explanation:

QUESTION 100
DRAG DROP
Drag and drop the tools from the left onto the tool's function on the right. Not all options are used.

Select and Place:

Correct Answer:

Section:
Explanation:

QUESTION 101
A team is developing an application for end users. The application will use microservices. For user access, dual-factor authentication will be used. Which type of test must be performed by the CI/CD tool to replicate user behavior and to verity that various user actions work as expected?

A. Unit
B. End-to-end
C. A/B
D. sanity

Correct Answer: A
Section:

QUESTION 102
Refer to the exhibit.

```
kind: pipeline
name: default

steps:
- name: test
  image: python
  commands:
  - pip install -r requirements.txt
  - pytest
```

Which CI solution uses this file?

A. Drone
B. GitLab CI
C. Travis CI
D. Jentans

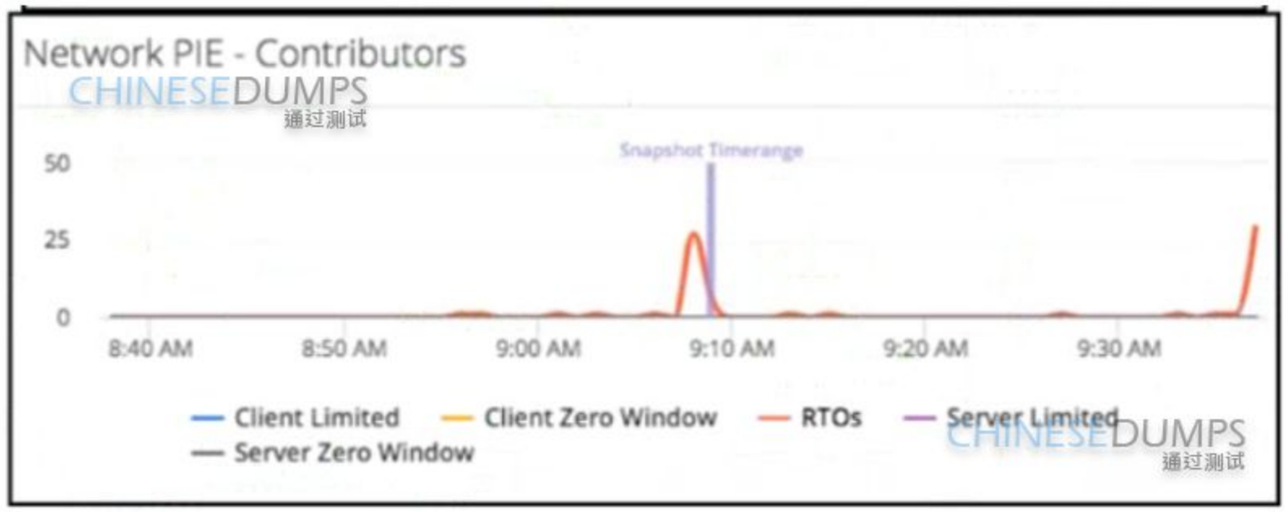
Correct Answer: A
Section:

QUESTION 103
What is included in ansible playbook instructions?

A. component dependencies
B. end state of component
C. machine dependencies
D. beginning state of component

Correct Answer: B
Section:

QUESTION 104
Refer to the Exhibit.



Refer to the exhibit A DevOps engineer is responsible for monitoring a mission-critical app During normal operations, when opening the application dashboard, it has been noticed that Ecom-Tier1 suddenly turns partially red Which action must be taken to address the Ecom-Tier1 turning red?

A. Restart the service to re-establish the connection with the nodes and clear the path.
B. Decrease the load on the MySQL databases to release the hardware resources available for node distribution
C. Check with the planning team to understand if the number of nodes in the Ecom tier can be increased to handle traffic
D. Contact the network team to investigate the network path that caused this intermittent issue around 9.10.

Correct Answer: A
Section:

QUESTION 105
A developer is containerizing an application. The container 'devnetprotf' has been run in detached mode to output the container ID with the command

```
$ docker run -d devnetprod
1b487caec32ae77aaec06fa4447060455ad838269eb674f74314766fa9e287
```

Which command must be used to start an interactive Bash she m the running container?

A. docker exec -it 1b487caec32a /bin/bash
B. docker exec -it devnetprod /bin/bash
C. doctor run -it devnetprod /bin/bash
D. docker run -it 1b48caec32a /bin/bash

Correct Answer: B
Section: