Exam Code: AZ-400
Exam Name: Microsoft Azure DevOps Solutions

01 - Develop an instrumentation strategy

QUESTION 1
SIMULATION
You need to create a notification if the peak average response time of an Azure web app named az400-9940427-main is more than five seconds when evaluated during a five-minute period. The notification must trigger the "https:// contoso.com/notify" webhook.
To complete this task, sign in to the Microsoft Azure portal.

A. See solution below.

Correct Answer: A
Section:
Explanation:
1. Open Microsoft Azure Portal
2. Log into your Azure account and go to App Service and look under Monitoring then you will see Alert. 3. Select Add an alert rule
4. Configure the alert rule as per below and click Ok.
Source: Alert on Metrics
Resource Group: az400-9940427-main
Resource: az400-9940427-main
Threshold: 5
Period: Over the last 5 minutes
Webhook: https://contoso.com/notify

Reference:
https://azure.microsoft.com/es-es/blog/webhooks-for-azure-alerts/

QUESTION 2
HOTSPOT
You have an Azure Kubernetes Service (AKS) pod.
You need to configure a probe to perform the following actions:
Confirm that the pod is responding to service requests.
Check the status of the pod four times a minute.
Initiate a shutdown if the pod is unresponsive.
How should you complete the YAML configuration file? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
apiVersion: v1
kind: Pod
metadata:
    labels:
        test: readiness-and-liveness
    name: readiness-http
spec:
    containers:
    - name: container1
      image: k8s.ger.io/readiness-and-lieveness
      args:
      - /server
```

▼
livenessProbe:
readinessProbe:
ShutdownProbe:
startupProbe:

```
        httpGet:
            path: /checknow
            port: 8123
            httpHeaders:
            - name: Custom-Header
              value: CheckNow
```

▼
initialDelaySeconds: 15
periodSeconds: 15
timeoutSeconds: 15

Answer Area:

Answer Area

```
apiVersion: v1
kind: Pod
metadata:
      labels:
            test: readiness-and-liveness
      name: readiness-http
spec:
      containers:
      - name: container1
        image: k8s.ger.io/readiness-and-lieveness
        args:
        - /server
```

▼
livenessProbe:
readinessProbe:
ShutdownProbe:
startupProbe:

```
        httpGet:
              path: /checknow
              port: 8123
              httpHeaders:
              - name: Custom-Header
                value: CheckNow
```

▼
initialDelaySeconds: 15
periodSeconds: 15
timeoutSeconds: 15

Section:
Explanation:
Box 1: readinessProbe:
For containerized applications that serve traffic, you might want to verify that your container is ready to handle incoming requests. Azure Container Instances supports readiness probes to include configurations so that your container can't be accessed under certain conditions.
Incorrect Answers:
livenessProbe: Containerized applications may run for extended periods of time, resulting in broken states that may need to be repaired by restarting the container. Azure Container Instances supports liveness probes so that you can configure your containers within your container group to restart if critical functionality is not working.
Box 2: periodSeconds: 15
The periodSeconds property designates the readiness command should execute every 15 seconds.
Reference:
https://docs.microsoft.com/en-us/azure/container-instances/container-instances-readiness-probe

QUESTION 3
HOTSPOT
Your company is building a new web application.
You plan to collect feedback from pilot users on the features being delivered.

All the pilot users have a corporate computer that has Google Chrome and the Microsoft Test & Feedback extension installed. The pilot users will test the application by using Chrome. You need to identify which access levels are required to ensure that developers can request and gather feedback from the pilot users. The solution must use the principle of least privilege.

Which access levels in Azure DevOps should you identify? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Developers:
- Basic
- Stakeholder

Pilot users:
- Basic
- Stakeholder

Answer Area:

Answer Area

Developers:
- **Basic**
- Stakeholder

Pilot users:
- Basic
- **Stakeholder**

Section:

Explanation:

Box 1: Basic

Assign Basic to users with a TFS CAL, with a Visual Studio Professional subscription, and to users for whom you are paying for Azure Boards & Repos in an organization.

Box 2: Stakeholder

Assign Stakeholders to users with no license or subscriptions who need access to a limited set of features.

Note:

You assign users or groups of users to one of the following access levels:

Basic: provides access to most features

VS Enterprise: provides access to premium features

Stakeholders: provides partial access, can be assigned to unlimited users for free
References: https://docs.microsoft.com/en-us/azure/devops/organizations/security/access-levels?view=vsts

QUESTION 4
DRAG DROP
Your company wants to use Azure Application Insights to understand how user behaviors affect an application.
Which application Insights tool should you use to analyze each behavior? To answer, drag the appropriate tools to the correct behaviors. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.
NOTE: Each correct selection is worth one point.

Select and Place:

Tools

| Impact |
| User Flows |
| Users |

Answer Area

Feature usage:

User actions by day:

The effect that the performance of the application has on the usage of a page or a feature:

Correct Answer:

Tools

Answer Area

Feature usage: User Flows

User actions by day: Users

The effect that the performance of the application has on the usage of a page or a feature: Impact

Section:
Explanation:

Box 1: User Flows

The User Flows tool visualizes how users navigate between the pages and features of your site. It's great for answering questions like:

How do users navigate away from a page on your site?

What do users click on a page on your site?

Where are the places that users churn most from your site?

Are there places where users repeat the same action over and over?

Box 2: Users

Box 3: Impact

Reference:

https://docs.microsoft.com/en-us/azure/azure-monitor/app/usage-flows

QUESTION 5

DRAG DROP

You have several Azure virtual machines that run Windows Server 2019.

You need to identify the distinct event IDs of each virtual machine as shown in the following table.

Name	Event ID
VM1	[704, 701, 1501, 1500, 1085]
VM2	[326, 105, 302, 301, 300, 102]
...	...

How should you complete the Azure Monitor query? To answer, drag the appropriate values to the correct locations. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Values

- count()
- makelist(EventID)
- makeset(EventID)
- mv-expand
- project
- render
- summarize

Answer Area

Event

| where TimeGenerated > ago(12h)

| order by TimeGenerated desc

| [_____] [_____] by Computer

Correct Answer:

Values

count()
makeset(EventID)
mv-expand
project
render

Answer Area

```
Event
| where TimeGenerated > ago(12h)
| order by TimeGenerated desc
|    summarize    makelist(EventID) by Computer
```

Section:
Explanation:
You can use makelist to pivot data by the order of values in a particular column. For example, you may want to explore the most common order events take place on your machines. You can essentially pivot the data by the order of EventIDs on each machine.
Example:
Event
| where TimeGenerated > ago(12h)
| order by TimeGenerated desc
| summarize makelist(EventID) by Computer
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/log-query/advanced-aggregations

QUESTION 6
HOTSPOT
You have an Azure web app named Webapp1.
You need to use an Azure Monitor query to create a report that details the top 10 pages of Webapp1 that failed.
How should you complete the query? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

exceptions
pageViews
requests
traces

```
| where
```

duration == 0
itemType == "availabilityResult"
resultCode == "200"
success == false

```
| summarize failedCount=sum(itemCount) by name, resultCode
| top 10 by failedCount desc
| render barchart
```

Answer Area:

Answer Area

```
[ requests ▼ ]
  exceptions
  pageViews
  requests
  traces

| where [ success == false ▼ ]
          duration == 0
          itemType == "availabilityResult"
          resultCode == "200"
          success == false

| summarize failedCount=sum(itemCount) by name, resultCode
| top 10 by failedCount desc
| render barchart
```

Section:
Explanation:
Box 1: requests
Failed requests (requests/failed):
The count of tracked server requests that were marked as failed.
Kusto code:
requests
| where success == 'False'
Box 2: success == false
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/app-insights-metrics

QUESTION 7
HOTSPOT
You have a project in Azure DevOps named Contoso App that contains pipelines in Azure Pipelines for GitHub repositories.
You need to ensure that developers receive Microsoft Teams notifications when there are failures in a pipeline of Contoso App.
What should you run in Teams? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

@azure pipelines [▼]   [▼]

feedback	https://dev.azure.com/contoso/contoso-app/
signin	https://dev.azure.com/contoso/contoso-app/_build
subscribe	https://dev.azure.com/contoso/contoso-app/_packaging
subscriptions	https://dev.azure.com/contoso/contoso-app/_work-items

Answer Area:

Answer Area

@azure pipelines [▼]   [▼]

feedback	https://dev.azure.com/contoso/contoso-app/
signin	https://dev.azure.com/contoso/contoso-app/_build
subscribe	https://dev.azure.com/contoso/contoso-app/_packaging
subscriptions	https://dev.azure.com/contoso/contoso-app/_work-items

Section:
Explanation:
Box 1: subscribe
To start monitoring all pipelines in a project, use the following command inside a channel:
@azure pipelines subscribe [project url]
Box 2: https://dev.azure.com/contoso/contoso-app/
Subscribe to a pipeline or all pipelines in a project to receive notifications:
@azure pipelines subscribe [pipeline url/ project url]

QUESTION 8
SIMULATION
You need to create and configure an Azure Storage account named az400lod11566895stor in a resource group named RG1lod11566895 to store the boot diagnostics for a virtual machine named VM1.
To complete this task, sign in to the Microsoft Azure portal.

A. See solution below.
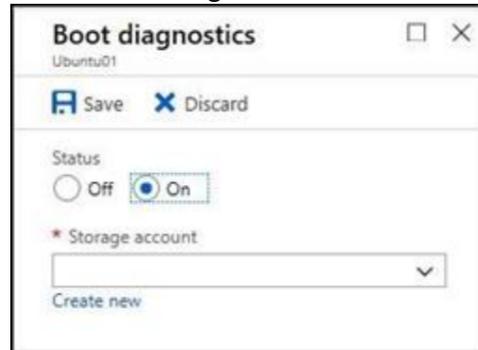
Correct Answer: A
Section:

Explanation:

Step 1: To create a general-purpose v2 storage account in the Azure portal, follow these steps:

1. On the Azure portal menu, select All services. In the list of resources, type Storage Accounts. As you begin typing, the list filters based on your input. Select Storage Accounts.
2. On the Storage Accounts window that appears, choose Add.
3. Select the subscription in which to create the storage account.
4. Under the Resource group field, select RG1lod11566895
5. Next, enter a name for your storage account named: az400lod11566895stor
6. Select Create.

Step 2: Enable boot diagnostics on existing virtual machine

To enable Boot diagnostics on an existing virtual machine, follow these steps:

1. Sign in to the Azure portal, and then select the virtual machine VM1.
2. In the Support + troubleshooting section, select Boot diagnostics, then select the Settings tab.
3. In Boot diagnostics settings, change the status to On, and from the Storage account drop-down list, select the storage account az400lod11566895stor.
4. Save the change.

You must restart the virtual machine for the change to take effect.

Reference:

https://docs.microsoft.com/en-us/azure/storage/common/storage-account-create

https://docs.microsoft.com/en-us/azure/virtual-machines/troubleshooting/boot-diagnostics

QUESTION 9
SIMULATION
You have a web app that connects to an Azure SQL Database named db1.
You need to configure db1 to send Query Store runtime statistics to Azure Log Analytics.
To complete this task, sign in to the Microsoft Azure portal.


A.   See solution below.

Correct Answer: A
Section:
Explanation:
To enable streaming of diagnostic telemetry for a single or a pooled database, follow these steps:

1. Go to Azure SQL database resource.
2. Select Diagnostics settings.
3. Select Turn on diagnostics if no previous settings exist, or select Edit setting to edit a previous setting. You can create up to three parallel connections to stream diagnostic telemetry.
4. Select Add diagnostic setting to configure parallel streaming of diagnostics data to multiple resources.
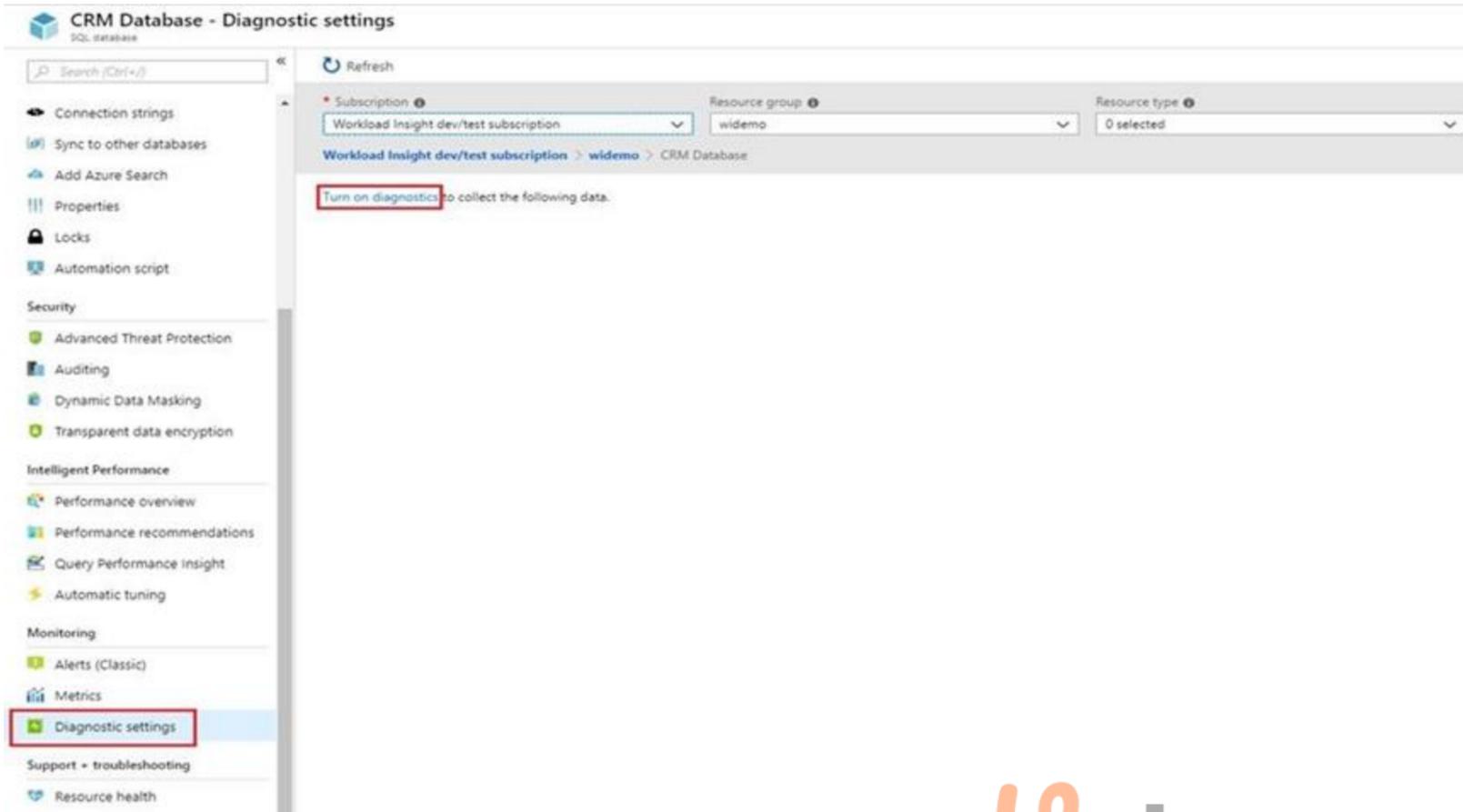
5. Enter a setting name for your own reference.
6. Select a destination resource for the streaming diagnostics data: Archive to storage account, Stream to an event hub, or Send to Log Analytics.
7. For the standard, event-based monitoring experience, select the following check boxes for database diagnostics log telemetry: QueryStoreRuntimeStatistics

Diagnostics settings

Save   Discard   Delete

* Name

service ✓

☐ Archive to a storage account

☐ Stream to an event hub

☑ Send to Log Analytics

Subscription

Workload Insight dev/test subscription

Log Analytics Workspace

sqlanalytics356 (westcentralus)

LOG

☑ SQLInsights

☑ AutomaticTuning

☑ QueryStoreRuntimeStatistics

☑ QueryStoreWaitStatistics

☑ Errors

☑ DatabaseWaitStatistics

☑ Timeouts

☑ Blocks

☑ Deadlocks

METRIC

☑ Basic

Diagnostics settings

Save   Discard   Delete

* Name

service ✓

☐ Archive to a storage account

☐ Stream to an event hub

☑ Send to Log Analytics

Subscription

Workload Insight dev/test subscription

Log Analytics Workspace

sqlanalytics356 (westcentralus)

LOG

☑ SQLInsights

☑ AutomaticTuning

☑ QueryStoreRuntimeStatistics

☑ QueryStoreWaitStatistics

☑ Errors

☑ DatabaseWaitStatistics

☑ Timeouts

☑ Blocks

☑ Deadlocks

METRIC

☑ Basic

8. For an advanced, one-minute-based monitoring experience, select the check box for Basic metrics.
9. Select Save.
Reference:
https://docs.microsoft.com/en-us/azure/azure-sql/database/metrics-diagnostic-telemetry-logging-streaming-export-configure

QUESTION 10
You are monitoring the health and performance of an Azure web app by using Azure Application Insights. You need to ensure that an alert is sent when the web app has a sudden rise in performance issues and failures. What

should you use?

A. custom events
B. Application Insights Profiler
C. usage analysis
D. Smart Detection
E. Continuous export

Correct Answer: D
Section:
Explanation:
Smart Detection automatically warns you of potential performance problems and failure anomalies in your web application. It performs proactive analysis of the telemetry that your app sends to Application Insights. If there is a sudden rise in failure rates, or abnormal patterns in client or server performance, you get an alert.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/app/proactive-diagnostics

QUESTION 11
You have a private GitHub repository.
You need to display the commit status of the repository on Azure Boards.
What should you do first?

A. Configure multi-factor authentication (MFA) for your GitHub account.
B. Add the Azure Pipelines app to the GitHub repository.
C. Add the Azure Boards app to the repository.
D. Create a GitHub action in GitHub.

Correct Answer: C
Section:
Explanation:
To connect Azure Boards to GitHub.com, connect and configure from Azure Boards. Or, alternatively, install and configure the Azure Boards app from GitHub. Both methods have been streamlined and support authenticating and operating via the app rather than an individual.
Note (see step 4 below):
Add a GitHub connection:
1. Sign into Azure Boards.
2. Choose (1) Project Settings, choose (2) GitHub connections and then (3) Connect your GitHub account.
3. If this is your first time connecting to GitHub from Azure Boards, you will be asked to sign in using your GitHub credentials. Choose an account for which you are an administrator for the repositories you want to connect to.
4. The Add GitHub Repositories dialog automatically displays and selects all GitHub.com repositories for which you are an administrator. Unselect any repositories that you don't want to participate in the integration.

Add GitHub repositories

Add the GitHub repositories you want to use with your Azure Boards.

Filter by keywords

Viewing 4, 4 selected

- ✓ JamalHart/fabrikam-apps-2
- ✓ JamalHart/fabrikam-demo
- ✓ JamalHart/fabrikam-open-source
- ✓ JamalHart/fabrikam-suite

Save

Reference:
https://docs.microsoft.com/en-us/azure/devops/boards/github/connect-to-github

QUESTION 12
You manage an Azure web app that supports an e-commerce website.
You need to increase the logging level when the web app exceeds normal usage patterns. The solution must minimize administrative overhead.
Which two resources should you include in the solution? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. an Azure Automation runbook

B. an Azure Monitor alert that has a dynamic threshold

C. an Azure Monitor alert that has a static threshold

D. the Azure Monitor autoscale settings

E. an Azure Monitor alert that uses an action group that has an email action

Correct Answer: A, B
Section:
Explanation:
B: Metric Alert with Dynamic Thresholds detection leverages advanced machine learning (ML) to learn metrics' historical behavior, identify patterns and anomalies that indicate possible service issues. It provides support of both a simple UI and operations at scale by allowing users to configure alert rules through the Azure Resource Manager API, in a fully automated manner.
A: You can use Azure Monitor to monitor base-level metrics and logs for most services in Azure. You can call Azure Automation runbooks by using action groups or by using classic alerts to automate tasks based on alerts.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/alerts-dynamic-thresholds
https://docs.microsoft.com/en-us/azure/automation/automation-create-alert-triggered-runbook

QUESTION 13
You have a Microsoft ASP.NET Core web app in Azure that is accessed worldwide.
You need to run a URL ping test once every five minutes and create an alert when the web app is unavailable from specific Azure regions. The solution must minimize development time. What should you do?

A. Create an Azure Monitor Availability metric and alert.
B. Create an Azure Application Insights availability test and alert.
C. Write an Azure function and deploy the function to the specific regions.
D. Create an Azure Service Health alert for the specific regions.

Correct Answer: B
Section:
Explanation:
There are three types of Application Insights availability tests:
URL ping test: a simple test that you can create in the Azure portal.
Multi-step web test
Custom Track Availability Tests
Note: After you've deployed your web app/website, you can set up recurring tests to monitor availability and responsiveness. Azure Application Insights sends web requests to your application at regular intervals from points around the world. It can alert you if your application isn't responding, or if it responds too slowly.
You can set up availability tests for any HTTP or HTTPS endpoint that is accessible from the public internet. You don't have to make any changes to the website you're testing. In fact, it doesn't even have to be a site you own. You can test the availability of a REST API that your service depends on.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/app/monitor-web-app-availability#create-a-url-ping-test

QUESTION 14
You have a multi-tier application. The front end of the application is hosted in Azure App Service. You need to identify the average load times of the application pages.
What should you use?

A. Azure Application Insights
B. the activity log of the App Service
C. the diagnostics logs of the App Service
D. Azure Advisor

Correct Answer: A
Section:
Explanation:
Application Insights will tell you about any performance issues and exceptions, and help you find and diagnose the root causes.
Application Insights can monitor both Java and ASP.NET web applications and services, WCF services. They can be hosted on-premises, on virtual machines, or as Microsoft Azure websites.
On the client side, Application Insights can take telemetry from web pages and a wide variety of devices including iOS, Android, and Windows Store apps.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/app/web-monitor-performance

QUESTION 15
SIMULATION
You need to create an instance of Azure Application Insights named az400-9940427-main and configure the instance to receive telemetry data from an Azure web app named az400-9940427-main.
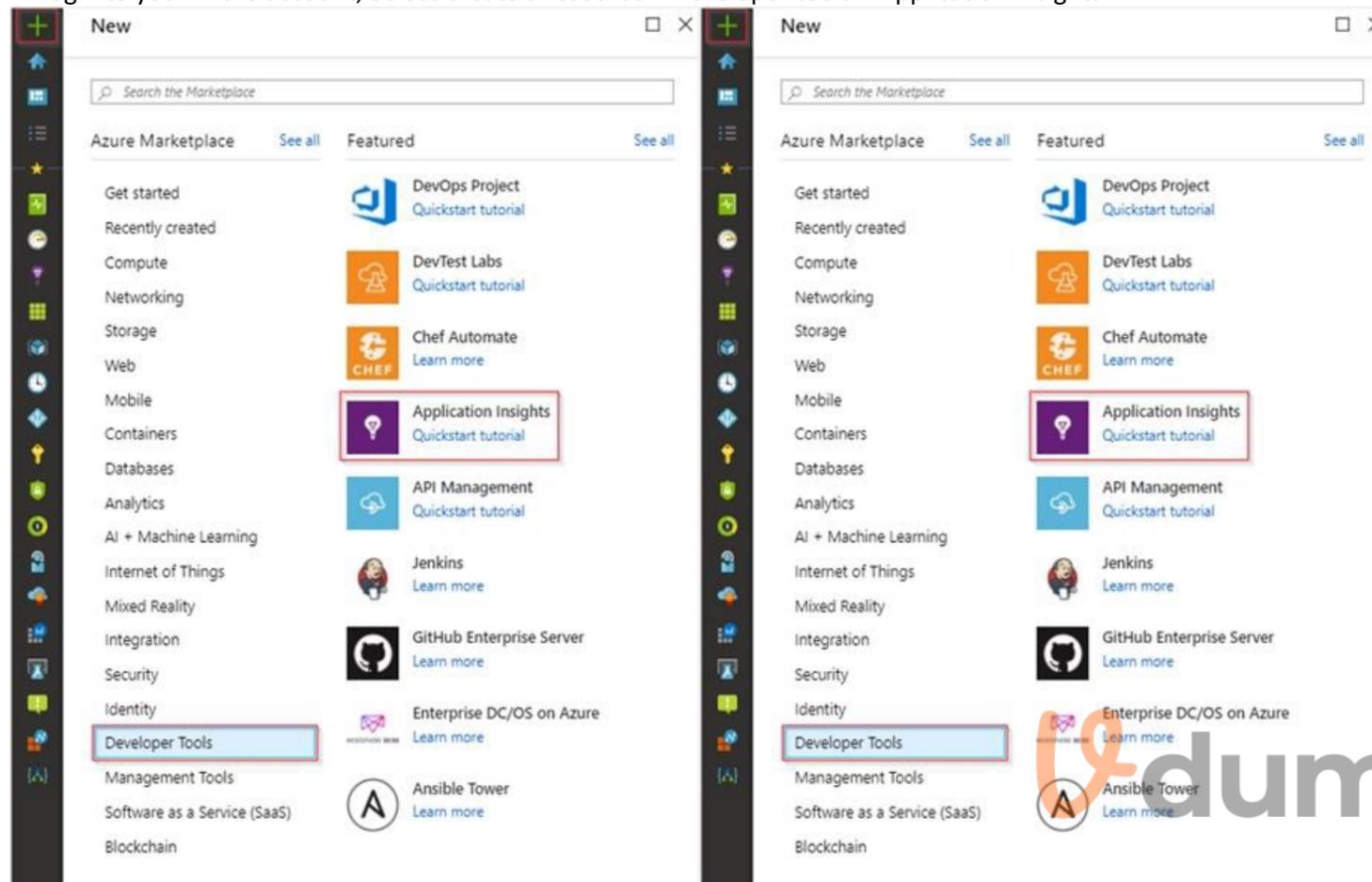To complete this task, sign in to the Microsoft Azure portal.

A. See solution below.

Correct Answer: A
Section:
Explanation:

Step 1: Create an instance of Azure Application Insights
1. Open Microsoft Azure Portal
2. Log into your Azure account, Select Create a resource > Developer tools > Application Insights.
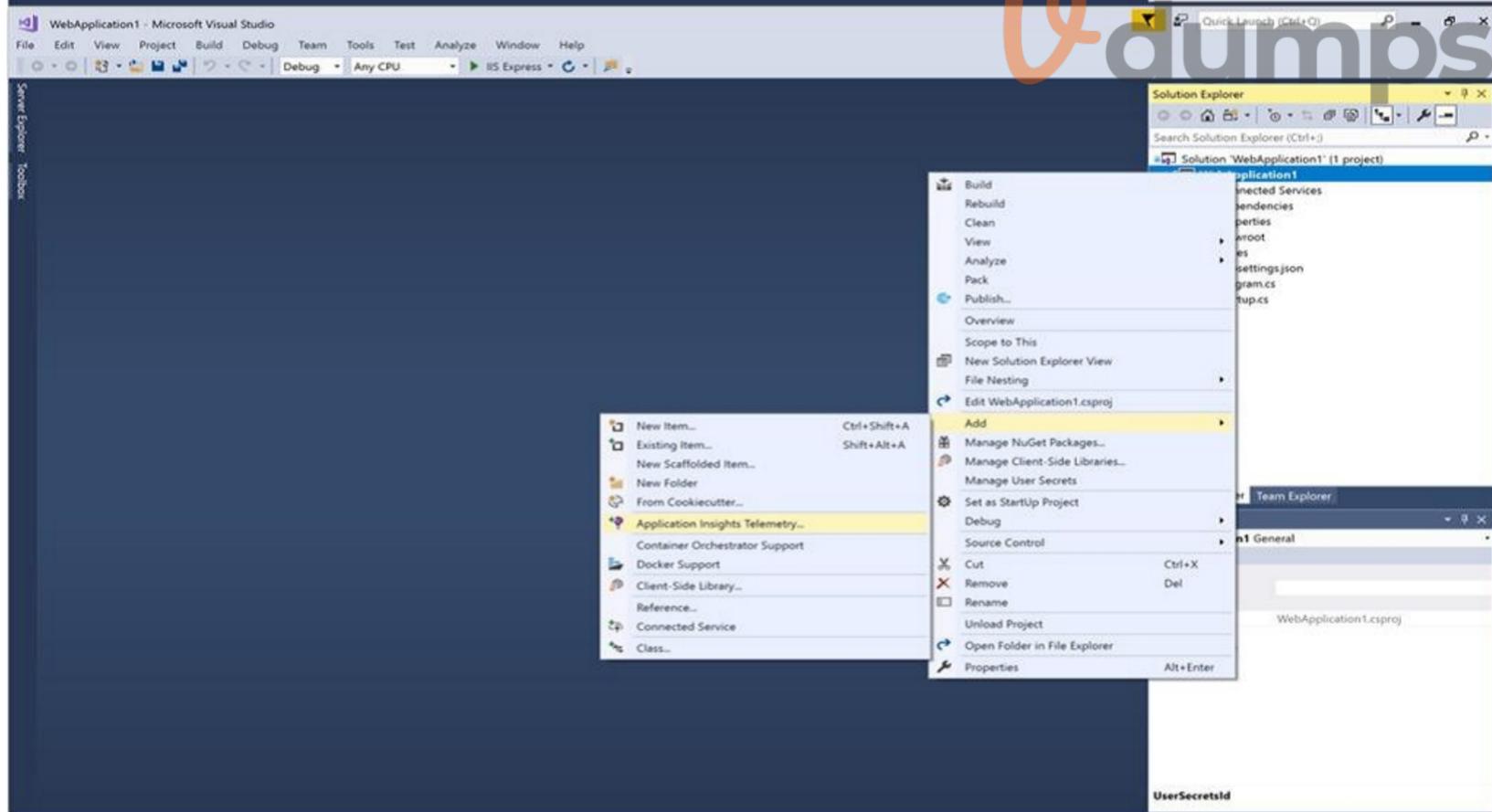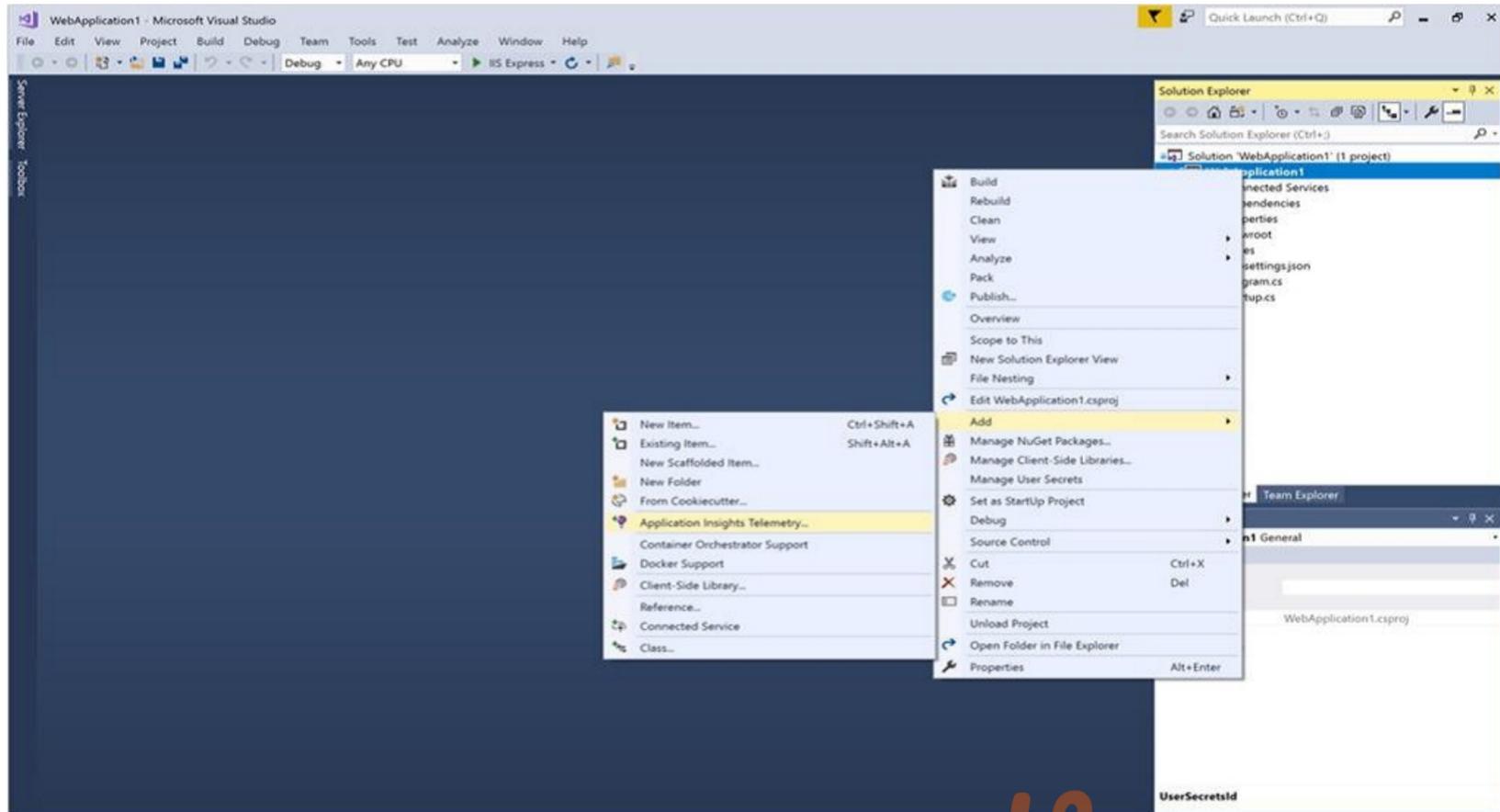

3. Enter the following settings, and then select Review + create.
Name: az400-9940427-main
Step 2: Configure App Insights SDK
1. Open your ASP.NET Core Web App project in Visual Studio > Right-click on the AppName in the Solution Explorer > Select Add > Application Insights Telemetry.

2. Click the Get Started button

3. Select your account and subscription > Select the Existing resource you created in the Azure portal > Click Register.
Reference:
https://docs.microsoft.com/bs-latn-ba/azure/azure-monitor/learn/dotnetcore-quick-start?view=vs-2017

QUESTION 16
Your company uses ServiceNow for incident management.
You develop an application that runs on Azure.
The company needs to generate a ticket in ServiceNow when the application fails to authenticate.
Which Azure Log Analytics solution should you use?

A. Application Insights Connector

B. Automation & Control

C. IT Service Management Connector (ITSM)

D. Insight & Analytics

Correct Answer: C
Section:
Explanation:
The IT Service Management Connector (ITSMC) allows you to connect Azure and a supported IT Service Management (ITSM) product/service.
ITSMC supports connections with the following ITSM tools:
ServiceNow
System Center Service Manager
Provance
Cherwell
With ITSMC, you can
Create work items in ITSM tool, based on your Azure alerts (metric alerts, Activity Log alerts and Log Analytics alerts). Optionally, you can sync your incident and change request data from your ITSM tool to an Azure Log Analytics workspace.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/itsmc-overview

QUESTION 17
You use Azure SQL Database Intelligent Insights and Azure Application Insights for monitoring.
You need to write ad-hoc queries against the monitoring data.
Which query language should you use?

A. Kusto Query Language (KQL)

B. PL/pgSQL

C. PL/SQL

D. Transact-SQL

Correct Answer: A
Section:
Explanation:
Azure Monitor Logs is based on Azure Data Explorer, and log queries are written using the same Kusto query language (KQL). This is a rich language designed to be easy to read and author, and you should be able to start using it with minimal guidance.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/log-query/log-query-overview

QUESTION 18

Your company creates a web application.

You need to recommend a solution that automatically sends to Microsoft Teams a daily summary of the exceptions that occur in the application. Which two Azure services should you recommend? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. Azure Logic Apps

B. Azure Pipelines

C. Microsoft Visual Studio App Center

D. Azure DevOps Project

E. Azure Application Insights

Correct Answer: A, E
Section:
Explanation:
E: Exceptions in your live web app are reported by Application Insights.

Note: Periodical reports help keep a team informed on how their business critical services are doing. Developers, DevOps/SRE teams, and their managers can be productive with automated reports reliably delivering insights without requiring everyone to sign in the portal. Such reports can also help identify gradual increases in latencies, load or failure rates that may not trigger any alert rules.

A: You can programmatically query Application Insights data to generate custom reports on a schedule. The following options can help you get started quickly:

Automate reports with Microsoft Flow

Automate reports with Logic Apps

Reference:

https://docs.microsoft.com/en-us/azure/azure-monitor/app/asp-net-exceptions

https://docs.microsoft.com/en-us/azure/azure-monitor/app/automate-custom-reports

QUESTION 19
Your company is building a mobile app that targets Android and iOS devices.

Your team uses Azure DevOps to manage all work items and release cycles.

You need to recommend a solution to perform the following tasks:

Collect crash reports for issue analysis.

Distribute beta releases to your testers.

Get user feedback on the functionality of new apps.

What should you include in the recommendation?

A. the Microsoft Test & Feedback extension

B. Microsoft Visual Studio App Center integration

C. Azure Application Insights widgets

D. Jenkins integration

Correct Answer: A
Section:
Explanation:
The "Exploratory Testing" extension is now "Test & Feedback" and is now Generally Available.

Anyone can now test web apps and give feedback, all directly from the browser on any platform: Windows, Mac, or Linux. Available for Google Chrome and Mozilla Firefox (required version 50.0 or above) currently. Support for Microsoft Edge is in the pipeline and will be enabled once Edge moves to a Chromium-compatible web platform.

Reference:

https://marketplace.visualstudio.com/items?itemName=ms.vss-exploratorytesting-web

QUESTION 20

You have an Azure DevOps project named Project1 and an Azure subscription named Sub1. Sub1 contains an Azure virtual machine scale set named VMSS1. VMSS1 hosts a web application named WebApp1. WebApp1 uses stateful sessions.

The WebApp1 installation is managed by using the Custom Script extension. The script resides in an Azure Storage account named sa1. You plan to make a minor change to a UI element of WebApp1 and to gather user feedback about the change. You need to implement limited user testing for the new version of WebApp1 on VMSS1.

Which three actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. Modify the load balancer settings of VMSS1.

B. Redeploy VMSS1.

C. Upload a custom script file to sa1.

D. Modify the Custom Script extension settings of VMSS1.

E. Update the configuration of a virtual machine in VMSS1.

Correct Answer: B, C, D
Section:

QUESTION 21
You are integrating Azure Pipelines and Microsoft Teams.
You install the Azure Pipelines app in Microsoft Teams.
You have an Azure DevOps organization named Contoso that contains a project name Project1.
You subscribe to Project1 in Microsoft Teams.
You need to ensure that you only receive events about failed builds in Microsoft Teams.
What should you do first?

A. From Microsoft Teams, run @azure pipelines subscribe https://dev.azure.com/Contoso/Project1.

B. From Azure Pipelines, add a Publish Build Artifacts task to Project1.

C. From Microsoft Teams, run @azure pipelines subscriptions.

D. From Azure Pipelines, enable continuous integration for Project1.

Correct Answer: A
Section:
Explanation:
To start monitoring all pipelines in a project, use the following command inside a channel:
@azure pipelines subscribe [project url]
The project URL can be to any page within your project (except URLs to pipelines).
For example:
@azure pipelines subscribe https://dev.azure.com/myorg/myproject/
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/integrations/microsoft-teams

QUESTION 22
HOTSPOT
You use Azure DevOps to manage the build and deployment of an app named App1.
You have release pipeline that deploys a virtual machine named VM1.
You plan to monitor the release pipeline by using Azure Monitor.
You need to create an alert to monitor the performance of VM1. The alert must be triggered when the average CPU usage exceeds 70 percent for five minutes. The alert must calculate the average once every minute.
How should you configure the alert rule? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

Aggregation granularity (Period): ▼

| 1 minute |
| 5 minutes |

Threshold value: ▼

| Static |
| Dynamic |

Operator: ▼

| Greater than |
| Greater than or equal to |
| Less than or equal to |
| Less than |

Answer Area:

Answer Area

Aggregation granularity (Period): ▼

| 1 minute |
| 5 minutes |

Threshold value: ▼

| Static |
| Dynamic |

Operator: ▼

| Greater than |
| Greater than or equal to |
| Less than or equal to |
| Less than |

Section:

Explanation:

Box 1: 5 minutes

The alert must calculate the average once every minute.

Note: We [Microsoft] recommend choosing an Aggregation granularity (Period) that is larger than the Frequency of evaluation, to reduce the likelihood of missing the first evaluation of added time series

Box 2: Static
Box 3: Greater than
Example, say you have an App Service plan for your website. You want to monitor CPU usage on multiple instances running your web site/app. You can do that using a metric alert rule as follows:
Target resource: myAppServicePlan
Metric: Percentage CPU
Condition Type: Static
Dimensions
Instance = InstanceName1, InstanceName2
Time Aggregation: Average
Period: Over the last 5 mins
Frequency: 1 min
Operator: GreaterThan
Threshold: 70
Like before, this rule monitors if the average CPU usage for the last 5 minutes exceeds 70%.
Aggregation granularity
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/alerts-metric-overview

QUESTION 23
You have an Azure DevOps organization named Contoso.
You need to receive Microsoft Teams notifications when work items are updated.
What should you do?

A. From Azure DevOps, configure a service hook subscription

B. From Microsoft Teams, configure a connector

C. From Microsoft Teams admin center, configure external access

D. From Microsoft Teams, add a channel

E. From Azure DevOps, install an extension

Correct Answer: A
Section:
Explanation:
Service hooks let you run tasks on other services when events happen in your Azure DevOps projects. For example, create a card in Trello when a work item is created or send a push notification to your team's mobile devices when a build fails. You can also use service hooks in custom apps and services as a more efficient way to drive activities when events happen in your projects. Note: Service hook publishers define a set of events. Subscriptions listen for the events and define actions to take based on the event. Subscriptions also target consumers, which are external services that can run their own actions, when an event occurs.
Reference: https://docs.microsoft.com/en-us/azure/devops/service-hooks/overview

QUESTION 24
You create an alert rule in Azure Monitor as shown in the following exhibit.

Create rule
Rules management

* **RESOURCE**   **HIERARCHY**

🖥️ ASP-9bb7   🔑 Contoso > [⦿] CoreApp1

[Select]

* **CONDITION**

✅ Whenever the Activity Log has an event with Category='Administrative', Signal name='All Administrative operations', Status='failed'

[Add]

ℹ️ Azure Alerts are currently limited to either 2 metric, 1 log, or 1 activity log signal per alert rule. To alert on more signals, please create additional alert rules.

ACTIONS GROUPS (optional)

Action group name	Contain actions
Application Insights Smart Detection	2 Email Azure Resource Manager Role(s)

[Add]   [Create]

ℹ️ Action rules (preview) allows you to define actions at scale as well as suppress actions. Learn more about this functionality by clicking on this banner. ⬀

Which action will trigger an alert?

A. a failed attempt to delete the ASP-9bb7 resource

B. a change to a role assignment for the ASP-9bb7 resource

C. a successful attempt to delete the ASP-9bb7 resource

D. a failed attempt to scale up the ASP-9bb7 resource

Correct Answer: A
Section:

QUESTION 25
You have a web app hosted on Azure App Service. The web app stores data in an Azure SQL database.
You need to generate an alert when there are 10,000 simultaneous connections to the database. The solution must minimize development effort. Which option should you select in the Diagnostics settings of the database?

A. Send to Log Analytics

B. Stream to an event hub

C. Archive to a storage account

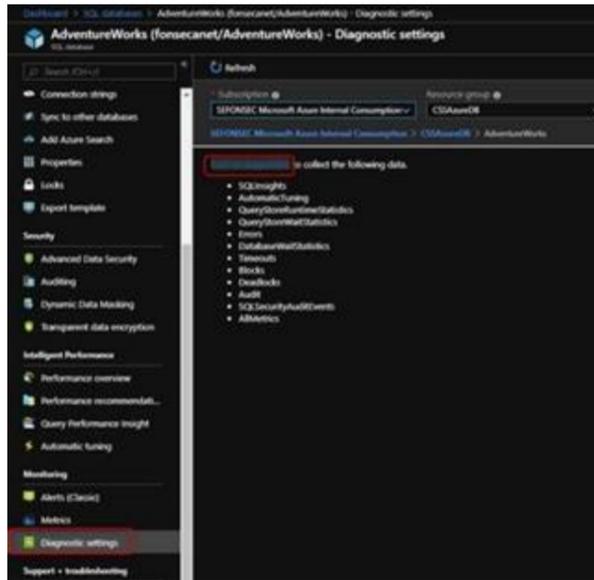**Correct Answer: A**
Section:
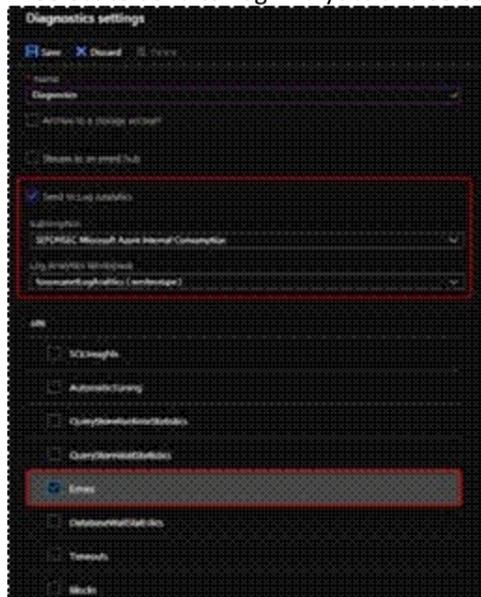**Explanation:**
ENABLE DIAGNOSTICS TO LOG ANALYTICS
This configuration is done PER DATABASE
1. Click on Diagnostics Settings and then Turn On Diagnostics

2. Select to Send to Log Analytics and select the Log Analytics workspace. For this sample I will selected only Errors

Reference:

https://techcommunity.microsoft.com/t5/azure-database-support-blog/azure-sql-db-and-log-analytics-better-together-part-1/ba-p/794833

QUESTION 26
DRAG DROP
You need to recommend project metrics for dashboards in Azure DevOps.

Which chart widgets should you recommend for each metric? To answer, drag the appropriate chart widgets to the correct metrics. Each chart widget may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Chart Widgets   **Answer Area**

| Burndown |

| Cycle Time |

| Lead Time |

| Velocity |

The elapsed time from the creation of work items to their completion: [   ]

The elapsed time to complete work items once they are active: [   ]

The remaining work: [   ]

Correct Answer:

Chart Widgets   **Answer Area**

| |

| |

| |

| Velocity |

The elapsed time from the creation of work items to their completion: | Lead Time |

The elapsed time to complete work items once they are active: | Cycle Time |

The remaining work: | Burndown |

Section:
Explanation:
Box 1: Lead time
Lead time measures the total time elapsed from the creation of work items to their completion.
Box 2: Cycle time
Cycle time measures the time it takes for your team to complete work items once they begin actively working on them.
Box 3: Burndown
Burndown charts focus on remaining work within a specific time period.
Incorrect Answers:
Velocity provides a useful metric for these activities:
Support sprint planning
Forecast future sprints and the backlog items that can be completed
A guide for determining how well the team estimates and meets their planned commitments
References:
https://docs.microsoft.com/en-us/azure/devops/report/dashboards/velocity-guidance?view=vsts
https://docs.microsoft.com/en-us/azure/devops/report/dashboards/cycle-time-and-lead-time?view=vsts
https://docs.microsoft.com/en-us/azure/devops/report/dashboards/configure-burndown-burnup-widgets?view=vsts

QUESTION 27
HOTSPOT

You plan to create alerts that will be triggered based on the page load performance of a home page.
You have the Application Insights log query shown in the following exhibit.

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

To create an alert based on the page load experience of most users, the alerting level must be based on [answer choice].

▼
percentile_duration_50
percentile_duration_90
percentile_duration_95
threshold

To only create an alert when authentication error occurs on the server, the query must be filtered on [answer choice].

▼
item Type
resultCode
source
success

Answer Area:

Answer Area

To create an alert based on the page load experience of most users, the alerting level must be based on [answer choice].

▼
percentile_duration_50
percentile_duration_90
percentile_duration_95
threshold

To only create an alert when authentication error occurs on the server, the query must be filtered on [answer choice].

▼
item Type
resultCode
source
success

Section:
Explanation:
Box 1: percentile_duration_95
Box 2: resultCode
Reference:
https://devblogs.microsoft.com/premier-developer/alerts-based-on-analytics-query-using-custom-log-search/

02 - Develop an instrumentation strategy
This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.
To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview

General Overview

Woodgrove Bank is a financial services company that has a main office in the United Kingdom.

Technical Requirements and Planned Changes

Planned Changes

Woodgrove Bank plans to implement the following project management changes:

Implement Azure DevOps for project tracking.

Centralize source code control in private GitHub repositories.

Implement Azure Pipelines for build pipelines and release pipelines.

Woodgrove Bank plans to implement the following changes to the identity environment:

Deploy an Azure AD tenant named woodgrovebank.com.

Sync the Active Directory domain to Azure AD.

Configure App1 to use a service principal.

Integrate GitHub with Azure AD.

Woodgrove Bank plans to implement the following changes to the core apps:

Migrate App1 to ASP.NET Core.

Integrate Azure Pipelines and the third-party build tool used to develop App2.

Woodgrove Bank plans to implement the following changes to the DevOps environment:

Deploy App1 to Azure App Service.

Implement source control for the DB1 schema.

Migrate all the source code from TFS1 to GitHub.

Deploy App2 to an Azure virtual machine named VM1.

Merge the POC branch into the GitHub default branch.

Implement an Azure DevOps dashboard for stakeholders to monitor development progress.

Technical Requirements

Woodgrove Bank identifies the following technical requirements:

The initial databases for new environments must contain both schema and reference data.

An Azure Monitor alert for VM1 must be configured to meet the following requirements:

- Be triggered when average CPU usage exceeds 80 percent for 15 minutes.

- Calculate CPU usage averages once every minute.

• The commit history of the POC branch must replace the history of the default branch.

The commit history of the POC branch must replace the history of the default branch.

The Azure DevOps dashboard must display the metrics shown in the following table.

Number	Required data
1	A comparison between the work the development team planned to deliver and what was delivered
2	The status of the environments in a release definition
3	The total number of results from a work item query

Access to Azure DevOps must be restricted to specific IP addresses.
Page load times for App1 must be captured and monitored.
Administrative effort must be minimized.

QUESTION 1
HOTSPOT
You need to configure the alert for VM1. The solution must meet the technical requirements.
Which two settings should you configure? To answer, select the appropriate settings in the answer area.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area:

Section:
Explanation:
Setting 1: Threshold value
Set to 80 %
Scenario: An Azure Monitor alert for VM1 must be configured to meet the following requirements:
Be triggered when average CPU usage exceeds 80 percent for 15 minutes.
Calculate CPU usage averages once every minute.
Setting 2: Aggregation granularity
Set to 15 minutes.

01 - Develop a Site Reliability Engineering (SRE) strategy

QUESTION 1
You configure an Azure Application Insights availability test.
You need to notify the customer services department at your company by email when availability is degraded. You create an Azure logic app that will handle the email and follow up actions.
Which type of trigger should you use to invoke the logic app?

A. an HTTPWebhook trigger

B. an HTTP trigger

C. a Request trigger

D. an ApiConnection trigger

Correct Answer: A
Section:
Explanation:
You can use webhooks to route an Azure alert notification to other systems for post-processing or custom actions. You can use a webhook on an alert to route it to services that send SMS messages, to log bugs, to notify a

team via chat or messaging services, or for various other actions.
Reference: https://docs.microsoft.com/en-us/azure/azure-monitor/platform/alerts-webhooks

QUESTION 2
You have an Azure DevOps organization named Contoso and an Azure subscription.
You use Azure DevOps to build a containerized app named App1 and deploy App1 to an Azure container instance named ACI1. You need to restart ACI1 when App1 stops responding.
What should you do?

A. Add a liveness probe to the YAML configuration of App1.
B. Add a readiness probe to the YAML configuration of App1.
C. Use Connection Monitor in Azure Network Watcher.
D. Use IP flow verify in Azure Network Watcher.

Correct Answer: B
Section:
Explanation:
For containerized applications that serve traffic, you might want to verify that your container is ready to handle incoming requests. Azure Container Instances supports readiness probes to include configurations so that your container can't be accessed under certain conditions. The readiness probe behaves like a Kubernetes readiness probe. For example, a container app might need to load a large data set during startup, and you don't want it to receive requests during this time.
YAML is used to setup a liveness probe.
Reference: https://docs.microsoft.com/en-us/azure/container-instances/container-instances-readiness-probe

QUESTION 3
You have a multi-tier application that has an Azure Web Apps front end and an Azure SQL Database back end.
You need to recommend a solution to capture and store telemetry data. The solution must meet the following requirements:
Support using ad-hoc queries to identify baselines.
Trigger alerts when metrics in the baseline are exceeded.
Store application and database metrics in a central location.
What should you include in the recommendation?

A. Azure Event Hubs
B. Azure SQL Database Intelligent Insights
C. Azure Application Insights
D. Azure Log Analytics

Correct Answer: D
Section:
Explanation:
Azure Platform as a Service (PaaS) resources, like Azure SQL and Web Sites (Web Apps), can emit performance metrics data natively to Log Analytics. The Premium plan will retain up to 12 months of data, giving you an excellent baseline ability.
There are two options available in the Azure portal for analyzing data stored in Log analytics and for creating queries for ad hoc analysis. Incorrect Answers:
B: Intelligent Insights analyzes database performance by comparing the database workload from the last hour with the past seven-day baseline workload. However, we need handle application metrics as well.
Reference: https://docs.microsoft.com/en-us/azure/azure-monitor/platform/collect-azurepass-posh

QUESTION 4
You have an Azure DevOps organization named Contoso and an Azure subscription. The subscription contains an Azure virtual machine scale set named VMSS1 that is configured for autoscaling. You use Azure DevOps to build a web app named App1 and deploy App1 to VMSS1. App1 is used heavily and has usage patterns that vary on a weekly basis. You need to recommend a solution to detect an abnormal rise in the rate of failed requests to App1. The solution must minimize administrative effort. What should you include in the recommendation?

A. the Smart Detection feature in Azure Application Insights
B. the Failures feature in Azure Application Insights
C. an Azure Service Health alert
D. an Azure Monitor alert that uses an Azure Log Analytics query

Correct Answer: A
Section:
Explanation:
After setting up Application Insights for your project, and if your app generates a certain minimum amount of data, Smart Detection of failure anomalies takes 24 hours to learn the normal behavior of your app, before it is switched on and can send alerts.
Reference: https://docs.microsoft.com/en-us/azure/azure-monitor/app/proactive-failure-diagnostics

QUESTION 5
SIMULATION
You need to ensure that Microsoft Visual Studio 2017 can remotely attach to an Azure Function named fa-11566895. To complete this task, sign in to the Microsoft Azure portal.

A. See solution below.

Correct Answer: A
Section:
Explanation:
Enable Remote Debugging
Before we start a debugging session to our Azure Function app we need to enable the functionality.
1. Navigate in the Azure portal to your function app fa-11566895
2. Go to the "Application settings"
3. Under "Debugging" set Remote Debugging to On and set Remote Visual Studio version to 2017.
Reference:
https://www.locktar.nl/uncategorized/azure-remote-debugging-manually-in-visual-studio-2017/

QUESTION 6
You have an Azure subscription that contains resources in several resource groups.
You need to design a monitoring strategy that will provide a consolidated view. The solution must support the following requirements:
• Support role-based access control (RBAC) by using Azure Active Directory (Azure AD) identifies.
Support role-based access control (RBAC) by using Azure Active Directory (Azure AD) identifies.
Include visuals from Azure Monitor that are generated by using the Kusto query language.
Support documentation written in markdown.
Use the latest data available for each visual.
What should you use to create the consolidated view?

A. Azure Monitor
B. Microsoft Power BI
C. Azure Data Explorer
D. Azure dashboards

Correct Answer: C
Section:
Explanation:
There are several tools available for running queries in Azure Data Explorer, including Kusto.
Kusto uses a role-based access control (RBAC) model, under which authenticated principals are mapped to roles, and get access according to the roles they're assigned. Note: Azure Data Explorer is a highly scalable and secure

analytics service that enables you to do rich exploration of structured and unstructured data for instant insights. Optimized for ad-hoc queries, Azure Data Explorer enables rich data exploration over raw, structured, and semi-structured data delivering fast time to insight. Query with a modern, intuitive query language that offers fast, ad-hoc, and advanced query capabilities over high-rate data volumes and varieties
Reference: https://docs.microsoft.com/en-us/azure/data-explorer/tools-integrations-overview

QUESTION 7
You are automating the testing process for your company.
You need to automate UI testing of a web application.
Which framework should you use?

A. JaCoco
B. Playwright
C. Xamarin.UITest
D. Microsoft.CodeAnalysis

Correct Answer: B
Section:
Explanation:
Performing user interface (UI) testing as part of the release pipeline is a great way of detecting unexpected changes, and need not be difficult. Selenium can be used to test your website during a continuous deployment release and test automation.
Reference: https://docs.microsoft.com/en-us/azure/devops/pipelines/test/continuous-test-selenium?view=azure-devops

QUESTION 8
You are building an ASP.NET Core application.
You plan to create an application utilization baseline by capturing telemetry data.
You need to add code to the application to capture the telemetry data. The solution must minimize the costs of storing the telemetry data. Which two actions should you perform? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point

A. Add the <InitialSamplingPercentage>99</InitialSamplingPercentage> parameter to the ApplicationInsights.config file.
B. From the code of the application, enable adaptive sampling.
C. From the code of the application, add Azure Application Insights telemetry.
D. Add the <MaxTelemetryItemsPerSecond>5</MaxTelemetryItemsPerSecond> parameter to the ApplicationInsights.config file.
E. From the code of the application, disable adaptive sampling.

Correct Answer: B, D
Section:
Explanation:
Sampling is a feature in Azure Application Insights. It is the recommended way to reduce telemetry traffic, data costs, and storage costs, while preserving a statistically correct analysis of application data.
The Application Insights SDK for ASP.NET Core supports both fixed-rate and adaptive sampling. Adaptive sampling is enabled by default.
D: For adaptive sampling: The volume is adjusted automatically to keep within a specified maximum rate of traffic, and is controlled via the setting MaxTelemetryItemsPerSecond. If the application produces a low amount of telemetry, such as when debugging or due to low usage, items won't be dropped by the sampling processor as long as volume is below MaxTelemetryItemsPerSecond.
Note: In ApplicationInsights.config, you can adjust several parameters in the AdaptiveSamplingTelemetryProcessor node. The figures shown are the default values:
<MaxTelemetryItemsPerSecond>5</MaxTelemetryItemsPerSecond>
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/app/sampling

QUESTION 9
You have an Azure DevOps organization named Contoso and an Azure subscription. The subscription contains an Azure virtual machine scale set named VMSS1 and an Azure Standard Load Balancer named LB1. LB1

distributes incoming requests across VMSS1 instances.

You use Azure DevOps to build a web app named App1 and deploy App1 to VMSS1. App1 is accessible via HTTPS only and configured to require mutual authentication by using a client certificate.

You need to recommend a solution for implementing a health check of App1. The solution must meet the following requirements:

Identify whether individual instances of VMSS1 are eligible for an upgrade operation.

Minimize administrative effort.

What should you include in the recommendation?

A. an Azure Load Balancer health probe

B. Azure Monitor autoscale

C. the Custom Script Extension

D. the Application Health extension

Correct Answer: D
Section:
Explanation:
Monitoring your application health is an important signal for managing and upgrading your deployment. Azure virtual machine scale sets provide support for rolling upgrades including automatic OS-image upgrades, which rely on health monitoring of the individual instances to upgrade your deployment. You can also use health extension to monitor the application health of each instance in your scale set and perform instance repairs using automatic instance repairs.
Reference:
https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/virtual-machine-scale-sets-health-extension

QUESTION 10
You have a build pipeline in Azure Pipelines that occasionally fails.
You discover that a test measuring the response time of an API endpoint causes the failures.
You need to prevent the build pipeline from failing due to the test.
Which two actions should you perform? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. Set Flaky test detection to Off.

B. Clear Flaky tests included in test pass percentage.

C. Enable Test Impact Analysis (TIA).

D. Manually mark the test as flaky.

E. Enable test slicing.

Correct Answer: B, D
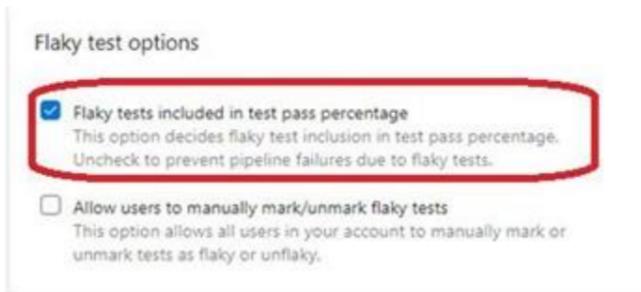**Section:**
Explanation:
D: You can mark or unmark a test as flaky based on analysis or context, by choosing Flaky.
To configure flaky test management, choose Project settings, and select Test management in the Pipelines section.
B:
Slide the On/Off button to On.

Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/test/flaky-test-management

QUESTION 11
Your company hosts a web application in Azure. The company uses Azure Pipelines for the build and release management of the application. Stakeholders report that the past few releases have negatively affected system performance.
You configure alerts in Azure Monitor.
You need to ensure that new releases are only deployed to production if the releases meet defined performance baseline criteria in the staging environment first. What should you use to prevent the deployment of releases that fall to meet the performance baseline?

A. an Azure Scheduler job

B. a trigger

C. a gate

D. an Azure function

Correct Answer: C
Section:
Explanation:
Scenarios and use cases for gates include:
• Quality validation. Query metrics from tests on the build artifacts such as pass rate or code coverage and deploy only if they are within required thresholds.
Quality validation. Query metrics from tests on the build artifacts such as pass rate or code coverage and deploy only if they are within required thresholds.
Use Quality Gates to integrate monitoring into your pre-deployment or post-deployment. This ensures that you are meeting the key health/performance metrics (KPIs) as your applications move from dev to production and any differences in the infrastructure environment or scale is not negatively impacting your KPIs.
Note: Gates allow automatic collection of health signals from external services, and then promote the release when all the signals are successful at the same time or stop the deployment on timeout. Typically, gates are used in connection with incident management, problem management, change management, monitoring, and external approval systems.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/continuous-monitoring
https://docs.microsoft.com/en-us/azure/devops/pipelines/release/approvals/gates?view=azure-devops

QUESTION 12
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. You manage a project in Azure DevOps.
You need to prevent the configuration of the project from changing over time.
Solution: Perform a Subscription Health scan when packages are created.
Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:

Explanation:
Instead implement Continuous Assurance for the project.
Note: The Subscription Security health check features in AzSK contains a set of scripts that examines a subscription and flags off security issues, misconfigurations or obsolete artifacts/settings which can put your subscription at higher risk.
Reference: https://azsk.azurewebsites.net/04-Continous-Assurance/Readme.html

QUESTION 13
Your company uses the following resources:
Windows Server 2019 container images hosted in an Azure Container Registry.
Azure virtual machines that run the latest version of Ubuntu
An Azure Log Analytics workspace
Azure Active Directory (Azure AD)
An Azure key vault
For which two resources can you receive vulnerability assessments in Azure Security Center? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. the Azure Log Analytics workspace

B. the Azure key vault

C. the Azure virtual machines that run the latest version of Ubuntu

D. Azure Active Directory (Azure AD)

E. The Windows Server 2019 container images hosted in the Azure Container Registry.

Correct Answer: C, E
Section:
Explanation:

QUESTION 14
You use Azure Pipelines to manage build pipelines, GitHub to store source code, and Dependabot to manage dependencies. You have an app named App1.
Dependabot detects a dependency in App1 that requires an update.
What should you do first to apply the update?

A. Create a pull request.

B. Approve the pull request.

C. Create a branch.

D. Perform a commit.

Correct Answer: B
Section:
Explanation:
DependaBot is a useful tool to regularly check for dependency updates. By helping to keep your project up to date, DependaBot can reduce technical debt and immediately apply security vulnerabilities when patches are released. How does DependaBot work?
1. DependaBot regularly checks dependencies for updates
2. If an update is found, DependaBot creates a new branch with this upgrade and Pull Request for approval
3. You review the new Pull Request, ensure the tests passed, review the code, and decide if you can merge the change
Reference:
https://samlearnsazure.blog/2019/12/20/github-using-dependabot/

QUESTION 15

Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. You manage a project in Azure DevOps.

You need to prevent the configuration of the project from changing over time.

Solution: Add a code coverage step to the build pipelines.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:
Instead implement Continuous Assurance for the project.
Reference: https://azsk.azurewebsites.net/04-Continous-Assurance/Readme.html

QUESTION 16
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. You manage a project in Azure DevOps.

You need to prevent the configuration of the project from changing over time.

Solution: Implement Continuous Integration for the project.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:
Instead implement Continuous Assurance for the project.
Reference:
https://azsk.azurewebsites.net/04-Continous-Assurance/Readme.html

QUESTION 17
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. You manage a project in Azure DevOps.

You need to prevent the configuration of the project from changing over time.

Solution: Implement Continuous Assurance for the project.

Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:
Explanation:
The basic idea behind Continuous Assurance (CA) is to setup the ability to check for "drift" from what is considered a secure snapshot of a system. Support for Continuous Assurance lets us treat security truly as a 'state' as

opposed to a 'point in time' achievement. This is particularly important in today's context when 'continuous change' has become a norm. There can be two types of drift:

Drift involving 'baseline' configuration: This involves settings that have a fixed number of possible states (often pre-defined/statically determined ones). For instance, a SQL DB can have TDE encryption turned ON or OFF...or a Storage Account may have auditing turned ON however the log retention period may be less than 365 days.

Drift involving 'stateful' configuration: There are settings which cannot be constrained within a finite set of well-known states. For instance, the IP addresses configured to have access to a SQL DB can be any (arbitrary) set of IP addresses. In such scenarios, usually human judgment is initially required to determine whether a particular configuration should be considered 'secure' or not. However, once that is done, it is important to ensure that there is no "stateful drift" from the attested configuration. (E.g., if, in a troubleshooting session, someone adds the IP address of a developer machine to the list, the Continuous Assurance feature should be able to identify the drift and generate notifications/ alerts or even trigger 'auto-remediation' depending on the severity of the change).
Reference: https://azsk.azurewebsites.net/04-Continous-Assurance/Readme.html

QUESTION 18
You are designing a configuration management solution to support five apps hosted on Azure App Service. Each app is available in the following three environments: development, test, and production.
You need to recommend a configuration management solution that meets the following requirements:
Supports feature flags
Tracks configuration changes from the past 30 days
Stores hierarchically structured configuration values
Controls access to the configurations by using role-based access control (RBAC) permissions
Stores shared values as key/value pairs that can be used by all the apps
Which Azure service should you recommend as the configuration management solution?

A. Azure Cosmos DB
B. Azure App Service
C. Azure App Configuration
D. Azure Key Vault

Correct Answer: A
Section:
Explanation:

QUESTION 19
You have a containerized solution that runs in Azure Container Instances. The solution contains a frontend container named App1 and a backend container named DB1. DB1 loads a large amount of data during startup. You need to verify that DB1 can handle incoming requests before users can submit requests to App1.
What should you configure?

A. a liveness probe
B. a performance log
C. a readiness probe
D. an Azure Load Balancer health probe

Correct Answer: C
Section:
Explanation:
For containerized applications that serve traffic, you might want to verify that your container is ready to handle incoming requests. Azure Container Instances supports readiness probes to include configurations so that your container can't be accessed under certain conditions.
Incorrect Answers:
A: Containerized applications may run for extended periods of time, resulting in broken states that may need to be repaired by restarting the container. Azure Container Instances supports liveness probes so that you can configure your containers within your container group to restart if critical functionality is not working.
Reference:
https://docs.microsoft.com/en-us/azure/container-instances/container-instances-readiness-probe

QUESTION 20
You are designing a strategy to monitor the baseline metrics of Azure virtual machines that run Windows Server. You need to collect detailed data about the processes running in the guest operating system.
Which two agents should you deploy? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. the Telegraf agent
B. the Azure Log Analytics agent
C. the Azure Network Watcher Agent for Windows
D. the Dependency agent

Correct Answer: B, D
Section:
Explanation:
The following table provide a quick comparison of the Azure Monitor agents for Windows.

	Azure Monitor agent (preview)	Diagnostics extension (WAD)	Log Analytics agent	Dependency agent
Environments supported	Azure	Azure	Azure Other cloud On-premises	Azure Other cloud On-premises
Agent requirements	None	None	None	Requires Log Analytics agent
Data collected	Event Logs Performance	Event Logs ETW events Performance File based logs IIS logs .NET app logs Crash dumps Agent diagnostics logs	Event Logs Performance File based logs IIS logs Insights and solutions Other services	Process dependencies Network connection metrics
Data sent to	Azure Monitor Logs Azure Monitor Metrics	Azure Storage Azure Monitor Metrics Event Hub	Azure Monitor Logs	Azure Monitor Logs (through Log Analytics agent)

Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/platform/agents-overview

QUESTION 21
DRAG DROP

You are planning projects for three customers. Each customer's preferred process for work items is shown in the following table.

Customer name	Preferred process
Litware, Inc.	Track product backlog items (PBIs) and bugs on the Kanban board. Break the PBIs down into tasks on the task board.
Contoso, Ltd.	Track user stories and bugs on the Kanban board. Track the bugs and tasks on the task board.
A. Datum Corporation	Track requirements, change requests, risks, and reviews.

The customers all plan to use Azure DevOps for work item management.

Which work item process should you use for each customer? To answer, drag the appropriate work item processé to the correct customers. Each work item process may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Processes

| Agile |
| CMMI |
| Scrum |
| XP |

Answer Area

Litware

Contoso:

A. Datum:

Correct Answer:

Processes

| |
| |
| |
| XP |

Answer Area

Litware	Scrum
Contoso:	Agile
A. Datum:	CMMI

Section:

Explanation:

Box 1: Scrum

Choose Scrum when your team practices Scrum. This process works great if you want to track product backlog items (PBIs) and bugs on the Kanban board, or break PBIs and bugs down into tasks on the taskboard.

Box 2: Agile

Choose Agile when your team uses Agile planning methods, including Scrum, and tracks development and test activities separately. This process works great if you want to track user stories and (optionally) bugs on the

Kanban board, or track bugs and tasks on the taskboard.

Box 3: CMMI

Choose CMMI when your team follows more formal project methods that require a framework for process improvement and an auditable record of decisions. With this process, you can track requirements, change requests, risks, and reviews.

Incorrect Answers:

XP:

The work tracking objects contained within the default DevOps processes and DevOps process templates are Basic, Agile, CMMI, and Scrum XP (Extreme Programming) and DevOps are different things. They don't contradict with each other, they can be used together, but they have different base concepts inside them.

References:

https://docs.microsoft.com/en-us/azure/devops/boards/work-items/guidance/choose-process?view=azure-devops

QUESTION 22
HOTSPOT
You have an application named App1 that has a custom domain of app.contoso.com.
You create a test in Azure Application Insights as shown in the following exhibit.

Create test

^ Basic Information

* Test name

| availability | ✓ |

Learn more about configuring tests against applications hosted behind a firewall

Test type

| URL ping test | ⌄ |

* URL ℹ

| https://app.contoso.com | ✓ |

Parse dependent requests ℹ
☑

Enable retries for availability test failures ℹ
☐

Test frequency ℹ

| 5 minutes | ⌄ |

⌄ Test locations
  4 location(s) configured

^ Success criteria

Test Timeout ℹ

| 30 seconds | ⌄ |

☑ HTTP response ℹ

Status code must equal

| 200 |

☑ Content match ℹ

Content must contain

| Copyright Contoso |

⌄ Alerts
  Enabled

| Create |

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

The test will execute [answer choice].

▼
every 30 seconds at a random location
every 30 seconds per location
every five minutes at a random location
every five minutes per location

The test will pass if [answer choice] within 30 seconds.

▼
App1 responds to an ICMP ping
the HTML of App1 and the HTML from URLs in <a> tags load
all the HTML, JavaScripts, and images of App1 load

Answer Area:

Answer Area

The test will execute [answer choice].

▼
every 30 seconds at a random location
every 30 seconds per location
every five minutes at a random location
every five minutes per location

The test will pass if [answer choice] within 30 seconds.

▼
App1 responds to an ICMP ping
the HTML of App1 and the HTML from URLs in <a> tags load
all the HTML, JavaScripts, and images of App1 load

Section:
Explanation:
Box 1: every five minutes at a random location
Test frequency: Sets how often the test is run from each test location. With a default frequency of five minutes and five test locations, your site is tested on average every minute.
Box 2:
Parse dependent requests: Test requests images, scripts, style files, and other files that are part of the web page under test. The recorded response time includes the time taken to get these files. The test fails if any of these resources cannot be successfully downloaded within the timeout for the whole test.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/app/monitor-web-app-availability

QUESTION 23
DRAG DROP
You use Azure Pipelines to automate Continuous Integration/Continuous Deployment (CI/CD) for an Azure web app named WebApp1.
You configure an Azure Monitor alert that is triggered when WebApp1 generates an error.
You need to configure the alert to forward details of the error to a third-party system. The solution must minimize administrative effort.
Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Actions

| Select the Recurrence trigger. |
| Create an Azure event hub. |
| Create an Azure logic app. |
| Select the HTTP request trigger. |
| Update the action group in Azure Monitor. |
| Select the Sliding Window trigger. |

Answer Area

Correct Answer:

Actions

Select the Recurrence trigger.

Create an Azure event hub.

Select the Sliding Window trigger.

Answer Area

Create an Azure logic app.

Select the HTTP request trigger.

Update the action group in Azure Monitor.

Section:
Explanation:
Box 1: Create an Azure logic app.
Box 2: Select the HTTP request trigger.
Box 3: Updated the action group in Azure Monitor.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/alerts/action-groups-logic-app

QUESTION 24
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You have an Azure DevOps organization named Contoso and an Azure subscription. The subscription contains an Azure virtual machine scale set named VMSS1 that is configured for autoscaling.
You have a project in Azure DevOps named Project1. Project1 is used to build a web app named App1 and deploy App1 to VMSS1.
You need to ensure that an email alert is generated whenever VMSS1 scales in or out.
Solution: From Azure DevOps, configure the Notifications settings for Project1.
Does this meet the goal?

A. Yes
B. No

Correct Answer: B

Section:
Explanation:
Notifications help you and your team stay informed about activity that occurs within your projects in Azure DevOps. You can get notified when changes occur to the following items:
work items
code reviews
pull requests
source control files
builds
Reference:
https://docs.microsoft.com/en-us/azure/devops/notifications/about-notifications?view=azure-devops

QUESTION 25
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
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You have an Azure DevOps organization named Contoso and an Azure subscription. The subscription contains an Azure virtual machine scale set named VMSS1 that is configured for autoscaling.
You have a project in Azure DevOps named Project1. Project1 is used to build a web app named App1 and deploy App1 to VMSS1.
You need to ensure that an email alert is generated whenever VMSS1 scales in or out.
Solution: From Azure DevOps, configure the Service hooks settings for Project1.
Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:

QUESTION 26
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You have an Azure DevOps organization named Contoso and an Azure subscription. The subscription contains an Azure virtual machine scale set named VMSS1 that is configured for autoscaling.
You have a project in Azure DevOps named Project1. Project1 is used to build a web app named App1 and deploy App1 to VMSS1.
You need to ensure that an email alert is generated whenever VMSS1 scales in or out.
Solution: From Azure Monitor, create an action group.
Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:
Explanation:
An action group is a collection of notification preferences defined by the owner of an Azure subscription. Azure Monitor, Service Health and Azure Advisor alerts use action groups to notify users that an alert has been triggered.
Reference:
https://docs.microsoft.com/en-us/azure/azure-monitor/alerts/action-groups

02 - Develop a Site Reliability Engineering (SRE) strategy

Case Study

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

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At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview

Litware, Inc. is an independent software vendor (ISV). Litware has a main office and five branch offices.

Existing Environment

Application Architecture

The company's primary application is a single monolithic retirement fund management system based on ASP.NET web forms that use logic written in VB.NET. Some new sections of the application are written in C#.

Variations of the application are created for individual customers. Currently, there are more than 80 live code branches in the application's code base.

The application was developed by using Microsoft Visual Studio. Source code is stored in Team Foundation Server (TFS) in the main office. The branch offices access the source code by using TFS proxy servers.

Architectural Issues

Litware focuses on writing new code for customers. No resources are provided to refactor or remove existing code. Changes to the code base take a long time, as dependencies are not obvious to individual developers.

Merge operations of the code often take months and involve many developers. Code merging frequently introduces bugs that are difficult to locate and resolve.

Customers report that ownership costs of the retirement fund management system increase continually. The need to merge unrelated code makes even minor code changes expensive.

Customers report that bug reporting is overly complex.

Requirements

Planned Changes

Litware plans to develop a new suite of applications for investment planning. The investment planning applications will require only minor integration with the existing retirement fund management system.

The investment planning applications suite will include one multi-tier web application and two iOS mobile applications. One mobile application will be used by employees; the other will be used by customers.

Litware plans to move to a more agile development methodology. Shared code will be extracted into a series of packages.

Litware has started an internal cloud transformation process and plans to use cloud-based services whenever suitable.

Litware wants to become proactive in detecting failures, rather than always waiting for customer bug reports.

Technical Requirements

The company's investment planning applications suite must meet the following requirements:

New incoming connections through the firewall must be minimized.

Members of a group named Developers must be able to install packages.

The principle of least privilege must be used for all permission assignments.

A branching strategy that supports developing new functionality in isolation must be used.

Members of a group named Team Leaders must be able to create new packages and edit the permissions of package feeds. Visual Studio App Center must be used to centralize the reporting of mobile application crashes and device types in use. By default, all releases must remain available for 30 days, except for production releases, which must be kept for 60 days. Code quality and release quality are critical. During release, deployments must not proceed between stages if any active bugs are logged against the release. The mobile applications must be able to call the share pricing service of the existing retirement fund management system. Until the system is upgraded, the service will only support basic authentication over HTTPS. The required operating system configuration for the test servers changes weekly. Azure Automation State Configuration must be used to ensure that the operating system on each test server is configured the same way when the servers are created and checked periodically.

Current Technical Issue

The test servers are configured correctly when first deployed, but they experience configuration drift over time. Azure Automation State Configuration fails to correct the configurations.

Azure Automation State Configuration nodes are registered by using the following command.

```
Register-AzureRmAutomationDscNode
    -ResourceGroupName 'TestResourceGroup'
    -AutomationAccountName 'LitwareAutomationAccount'
    -AzureVMName $vmname
    -ConfigurationMode 'ApplyOnly'
```

QUESTION 1
HOTSPOT
Case Study

This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

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Application Architecture

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The application was developed by using Microsoft Visual Studio. Source code is stored in Team Foundation Server (TFS) in the main office. The branch offices access the source code by using TFS proxy servers.

Architectural Issues

Litware focuses on writing new code for customers. No resources are provided to refactor or remove existing code. Changes to the code base take a long time, as dependencies are not obvious to individual developers.

Merge operations of the code often take months and involve many developers. Code merging frequently introduces bugs that are difficult to locate and resolve. Customers report that ownership costs of the retirement fund management system increase continually. The need to merge unrelated code makes even minor code changes expensive.

Customers report that bug reporting is overly complex.

Planned changes

Litware plans to develop a new suite of applications for investment planning. The investment planning applications will require only minor integration with the existing retirement fund management system.

The investment planning applications suite will include one multi-tier web application and two iOS mobile application. One mobile application will be used by employees; the other will be used by customers.

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Technical requirements

The company's investment planning applications suite must meet the following requirements:

New incoming connections through the firewall must be minimized.

Members of a group named Developers must be able to install packages.

The principle of least privilege must be used for all permission assignments.

A branching strategy that supports developing new functionality in isolation must be used.

Members of a group named Team Leaders must be able to create new packages and edit the permissions of package feeds.

Visual Studio App Center must be used to centralize the reporting of mobile application crashes and device types in use.

By default, all releases must remain available for 30 days, except for production releases, which must be kept for 60 days.

Code quality and release quality are critical. During release, deployments must not proceed between stages if any active bugs are logged against the release.

The mobile applications must be able to call the share pricing service of the existing retirement fund management system. Until the system is upgraded, the service will only support basic authentication over HTTPS.

The required operating system configuration for the test servers changes weekly. Azure Automation State Configuration must be used to ensure that the operating system on each test server is configured the same way when the servers are created and checked periodically.

Current Technical Issue

The test servers are configured correctly when first deployed, but they experience configuration drift over time. Azure Automation State Configuration fails to correct the configurations.

Azure Automation State Configuration nodes are registered by using the following command.

```
Register-AzureRmAutomationDscNode
    -ResourceGroupName 'TestResourceGroup'
    -AutomationAccountName 'LitwareAutomationAccount'
    -AzureVMName $vmanme
    -ConfigurationMode 'ApplyOnly'
```

How should you complete the code to initialize App Center in the mobile application? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

```
MSAppCenter.start
( "{Your App Secret}",
  withServices:
)
```

▼		▼
[MSAnalytics.self,		MSAnalytics.self]
[MSDistribute.self,		MSCrashes.self]
[MSPush.self,		MSDistribute.self]

Answer Area:

Answer Area

```
MSAppCenter.start
( "{Your App Secret}",
  withServices:
)
```

▼		▼
[MSAnalytics.self,		MSAnalytics.self]
[MSDistribute.self,		MSCrashes.self]
[MSPush.self,		MSDistribute.self]

Section:

Explanation:

Scenario: Visual Studio App Center must be used to centralize the reporting of mobile application crashes and device types in use. In order to use App Center, you need to opt in to the service(s) that you want to use, meaning by default no services are started and you will have to explicitly call each of them when starting the SDK. Insert the following line to start the SDK in your app's AppDelegate class in the didFinishLaunchingWithOptions method. MSAppCenter.start("{Your App Secret}", withServices: [MSAnalytics.self, MSCrashes.self]) References:
https://docs.microsoft.com/en-us/appcenter/sdk/getting-started/ios

03 - Develop a Site Reliability Engineering (SRE) strategy
Case Study

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Overview

Contoso, Ltd. is a manufacturing company that has a main office in Chicago.

Existing Environment

Contoso plans to improve its IT development and operations processes by implementing Azure DevOps principles. Contoso has an Azure subscription and creates an Azure DevOps organization.

The Azure DevOps organization includes:

The Docker extension

A deployment pool named Pool7 that contains 10 Azure virtual machines that run Windows Server 2019

The Azure subscription contains an Azure Automation account.

Requirements

Planned changes

Contoso plans to create projects in Azure DevOps as shown in the following table.

Project name	Project details
Project 1	Project1 will provide support for incremental builds and third-party SDK components
Project 2	Project2 will use an automatic build policy. A small team of developers named Team2 will work independently on changes to the project. The Team2 members will not have permissions to Project2.
Project 3	Project3 will be integrated with SonarQube
Project 4	Project4 will provide support for a build pipeline that creates a Docker image and pushes the image to the Azure Container Registry. Project4 will use an existing Dockerfile.
Project 5	Project5 will contain a Git repository in Azure Repos and a continuous integration trigger that will initiate a build in response to any change except for changes within /folder1 of the repository.
Project 6	Project6 will provide support for build and deployment pipelines. Deployment will be allowed only if the number of current work items representing active software bugs is 0.
Project 7	Project7 will contain a target deployment group named Group7 that maps to Pool7. Project7 will use Azure Automation State Configuration to maintain the desired state of the computers in Group7.

Technical requirements

Contoso identifies the following technical requirements:

Implement build agents for Project1.

Whenever possible, use Azure resources.

Avoid using deprecated technologies.

Implement a code flow strategy for Project2 that will:

- Enable Team2 to submit pull requests for Project2.

- Enable Team2 to work independently on changes to a copy of Project2.

- Ensure that any intermediary changes performed by Team2 on a copy of Project2 will be subject to the same restrictions as the ones defined in the build policy of Project2. Whenever possible, implement automation and minimize administrative effort.

Implement Project3, Project5, Project6, and Project7 based on the planned changes.

Implement Project4 and configure the project to push Docker images to Azure Container Registry.

QUESTION 1

You add the virtual machines as managed nodes in Azure Automation State Configuration.

You need to configure the managed computers in Pool7.
What should you do next?

A. Modify the RefreshMode property of the Local Configuration Manager (LCM).

B. Run the Register-AzureRmAutomationDscNode Azure Powershell cmdlet.

C. Modify the ConfigurationMode property of the Local Configuration Manager (LCM).

D. Install PowerShell Core.

Correct Answer: B
Section:
Explanation:
The Register-AzureRmAutomationDscNode cmdlet registers an Azure virtual machine as an APS Desired State Configuration (DSC) node in an Azure Automation account.
Scenario: The Azure DevOps organization includes:
The Docker extension
A deployment pool named Pool7 that contains 10 Azure virtual machines that run Windows Server 2019

Project 7	Project7 will contain a target deployment group named Group7 that maps to Pool7. Project7 will use Azure Automation State Configuration to maintain the desired state of the computers in Group7.

Reference:
https://docs.microsoft.com/en-us/powershell/module/azurerm.automation/register-azurermautomationdscnode

QUESTION 2
DRAG DROP
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To start the case study
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When you are ready to answer a question, click the Question button to return to the question.
Background
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Contoso plans to improve its IT development and operations processes by implementing Azure DevOps principles. Contoso has an Azure subscription and creates an Azure DevOps organization.
The Azure DevOps organization includes:
The Docker extension
A deployment pool named Pool7 that contains 10 Azure virtual machines that run Windows Server 2019
The Azure subscription contains an Azure Automation account.
Contoso plans to create projects in Azure DevOps as shown in the following table.

Project name	Project details
Project 1	Project1 will provide support for incremental builds and third-party SDK components
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Project 4	Project4 will provide support for a build pipeline that creates a Docker image and pushes the image to the Azure Container Registry. Project4 will use an existing Dockerfile.
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-Enable Team2 to submit pull requests for Project2.

-Enable Team2 to work independently on changes to a copy of Project2.

-Ensure that any intermediary changes performed by Team2 on a copy of Project2 will be subject to the same restrictions as the ones defined in the build policy of Project2. Whenever possible implement automation and minimize administrative effort.

Implement Project3, Project5, Project6, and Project7 based on the planned changes

Implement Project4 and configure the project to push Docker images to Azure Container Registry.

You need to implement the code flow strategy for Project2 in Azure DevOps.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order. Select and Place:

Select and Place:

Actions

- Create a fork
- Create a branch
- Add a build policy for the fork
- Add a build policy for the master branch
- Create a repository
- Add an application access policy.

Answer Area

Correct Answer:

Actions

Create a branch

Add a build policy for the master branch

Add an application access policy.

Answer Area

Create a repository

Create a fork

Add a build policy for the fork

Section:
Explanation:
Step 1: Create a repository
A Get repository, or repo, is a folder that you've told Git to help you track file changes in. You can have any number of repos on your computer, each stored in their own folder.
Step 2: Create a fork
Step 3: Add a build policy for the fork
Build policies help teams protect their important branches of development. Policies enforce your team's code quality and change management standards.
Scenario:
Implement a code flow strategy for Project2 that will:
Enable Team2 to submit pull requests for Project2.
Enable Team2 to work independently on changes to a copy of Project2.
Ensure that any intermediary changes performed by Team2 on a copy of Project2 will be subject to the same restrictions as the ones defined in the build policy of Project2.

Project2 will use an automatic build policy. A small team of developers named Team2 will work independently on changes to the project. The Team2 members will not have permissions to Project2.

Reference:
https://docs.microsoft.com/en-us/azure/devops/repos/git/manage-your-branches

QUESTION 3
DRAG DROP
Case Study
This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.
To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other question on this case study.
At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next sections of the exam. After you begin a new section, you cannot return to this section.
To start the case study
To display the first question on this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs.
When you are ready to answer a question, click the Question button to return to the question.

Background

Contoso, Ltd. is a manufacturing company that has a main office in Chicago.

Contoso plans to improve its IT development and operations processes by implementing Azure DevOps principles. Contoso has an Azure subscription and creates an Azure DevOps organization.

The Azure DevOps organization includes:

The Docker extension

A deployment pool named Pool7 that contains 10 Azure virtual machines that run Windows Server 2019

The Azure subscription contains an Azure Automation account.

Contoso plans to create projects in Azure DevOps as shown in the following table.

Project name	Project details
Project 1	Project1 will provide support for incremental builds and third-party SDK components
Project 2	Project2 will use an automatic build policy. A small team of developers named Team2 will work independently on changes to the project. The Team2 members will not have permissions to Project2.
Project 3	Project3 will be integrated with SonarQube
Project 4	Project4 will provide support for a build pipeline that creates a Docker image and pushes the image to the Azure Container Registry. Project4 will use an existing Dockerfile.
Project 5	Project5 will contain a Git repository in Azure Reports and a continuous integration trigger that will initiate a build in response to any change except for changes within /folder1 of the repository.
Project 6	Project6 will provide support for build and deployment pipelines. Deployment will be allowed only if the number of current work items representing active software bugs is 0.
Project 7	Project7 will contain a target deployment group named Group7 that maps to Pool7. Project7 will use Azure Automation State Configuration to maintain the desired state of the computers in Group7.

Technical requirements

Contoso identifies the following technical requirements:

Implement build agents for Project1.

Whenever possible, use Azure resources.

Avoid using deprecated technologies.

Implement a code flow strategy for Project2 that will:

-Enable Team2 to submit pull requests for Project2.

-Enable Team2 to work independently on changes to a copy of Project2.

-Ensure that any intermediary changes performed by Team2 on a copy of Project2 will be subject to the same restrictions as the ones defined in the build policy of Project2. Whenever possible implement automation and minimize administrative effort.

Implement Project3, Project5, Project6, and Project7 based on the planned changes

Implement Project4 and configure the project to push Docker images to Azure Container Registry.

You need to configure Azure Automation for the computers in Group7.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order. Select and Place:

Select and Place:

Actions

Run the `Import-AzureRmAutomationDscConfiguration` Azure PowerShell cmdlet.

Create a Desired State Configuration (DSC) configuration file that has an extension of .ps1.

Run the `New-AzureRmResourceGroupDeployment` Azure PowerShell cmdlet.

Run the `Start-AzureRmAutomationDscCompilationJob` Azure PowerShell cmdlet.

Create an Azure Resource Manager template file that has an extension of `.json`.

Answer Area

Correct Answer:

Actions

Run the `New-AzureRmResourceGroupDeployment` Azure PowerShell cmdlet.

Create an Azure Resource Manager template file that has an extension of `.json`.

Answer Area

Create a Desired State Configuration (DSC) configuration file that has an extension of .ps1.

Run the `Import-AzureRmAutomationDscConfiguration` Azure PowerShell cmdlet.

Run the `Start-AzureRmAutomationDscCompilationJob` Azure PowerShell cmdlet.

Section:
Explanation:
Step 1: Create a Desired State Configuration (DSC) configuration file that has an extension of .ps1.
Step 2: Run the Import-AzureRmAutomationDscConfiguration Azure Powershell cmdlet
The Import-AzureRmAutomationDscConfiguration cmdlet imports an APS Desired State Configuration (DSC) configuration into Azure Automation. Specify the path of an APS script that contains a single DSC configuration.
Example:
PS C:\>Import-AzureRmAutomationDscConfiguration -AutomationAccountName "Contoso17"-ResourceGroupName "ResourceGroup01" -SourcePath "C:\DSC\client.ps1" -Force
This command imports the DSC configuration in the file named client.ps1 into the Automation account named Contoso17. The command specifies the Force parameter. If there is an existing DSC configuration, this command replaces it.

Step 3: Run the Start-AzureRmAutomationDscCompilationJob Azure Powershell cmdlet
The Start-AzureRmAutomationDscCompilationJob cmdlet compiles an APS Desired State Configuration (DSC) configuration in Azure Automation.
References:
https://docs.microsoft.com/en-us/powershell/module/azurerm.automation/import-azurermautomationdscconfiguration
https://docs.microsoft.com/en-us/powershell/module/azurerm.automation/start-azurermautomationdsccompilationjob

01 - Manage source control

QUESTION 1
During a code review, you discover many quality issues. Many modules contain unused variables and empty catch blocks. You need to recommend a solution to improve the quality of the code.
What should you recommend?

A. In a Grunt build task, select Enabled from Control Options.

B. In a Maven build task, select Run PMD.

C. In a Xcode build task, select Use xcpretty from Advanced.

D. In a Gradle build task, select Run Checkstyle.

Correct Answer: B
Section:
Explanation:
PMD is a source code analyzer. It finds common programming flaws like unused variables, empty catch blocks, unnecessary object creation, and so forth. There is an Apache Maven PMD Plugin which allows you to automatically run the PMD code analysis tool on your project's source code and generate a site report with its results. Incorrect Answers:
C: xcpretty is a fast and flexible formatter for xcodebuild.
Reference:
https://pmd.github.io/

QUESTION 2
Your development team is building a new web solution by using the Microsoft Visual Studio integrated development environment (IDE). You need to make a custom package available to all the developers. The package must be managed centrally, and the latest version must be available for consumption in Visual Studio automatically. Which three actions should you perform? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. Publish the package to a feed.

B. Create a new feed in Azure Artifacts.

C. Upload a package to a Get repository.

D. Add the package URL to the Environment settings in Visual Studio.

E. Add the package URL to the NuGet Package Manager settings in Visual Studio.

F. Create a Git repository in Azure Repos.

Correct Answer: A, B, E
Section:
Explanation:
B: By using your custom NuGet package feed within your Azure DevOps (previously VSTS) instance, you'll be able to distribute your packages within your organization with ease. Start by creating a new feed. A: We can publish, pack and push the built project to our NuGet feed.
E: Consume your private NuGet Feed
Go back to the Packages area in Azure DevOps, select your feed and hit "Connect to feed". You'll see some instructions for your feed, but it's fairly simple to set up. Just copy your package source URL, go to Visual Studio, open the NuGet Package Manager, go to its settings and add a new source. Choose a fancy name, insert the source URL. Done. Search for your package in the NuGet Package Manager and it should appear there, ready for installation. Make sure to select the appropriate feed (or just all feeds) from the top right select box.
Reference: https://medium.com/medialesson/get-started-with-private-nuget-feeds-in-azure-devops-8c7b5f022a68

QUESTION 3

You have a GitHub repository.

You create a new repository in Azure DevOps.

You need to recommend a procedure to clone the repository from GitHub to Azure DevOps.

What should you recommend?

A. Create a pull request.

B. Create a webhook.

C. Create a service connection for GitHub.

D. From Import a Get repository, click Import.

E. Create a personal access token in Azure DevOps.

Correct Answer: D

Section:

Explanation:

You can import an existing Git repo from GitHub, Bitbucket, GitLab, or other location into a new or empty existing repo in your project in Azure DevOps. Import into a new repo

1. Select Repos, Files.

2. From the repo drop-down, select Import repository.

3. If the source repo is publicly available, just enter the clone URL of the source repository and a name for your new Git repository.

Reference: https://docs.microsoft.com/en-us/azure/devops/repos/git/import-git-repository?view=azure-devops

QUESTION 4

Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. The lead developer at your company reports that adding new application features takes longer than expected due to a large accumulated technical debt. You need to recommend changes to reduce the accumulated technical debt.

Solution: You recommend increasing the code duplication.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B

Section:

Explanation:

Instead reduce the code complexity.

Note: Technical debt is the accumulation of sub-optimal technical decisions made over the lifetime of an application. Eventually, it gets harder and harder to change things: it's the 'sand in the gears' that sees IT initiatives grind to a halt.

Reference: https://dzone.com/articles/fight-through-the-pain-how-to-deal-with-technical https://www.devopsgroup.com/blog/five-ways-devops-helps-with-technical-debt/

QUESTION 5

Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. The lead developer at your company reports that adding new application features takes longer than expected due to a large accumulated technical debt. You need to recommend changes to reduce the accumulated technical debt.

Solution: You recommend increasing the test coverage.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:
Instead reduce the code complexity.
Note: Technical debt is the accumulation of sub-optimal technical decisions made over the lifetime of an application. Eventually, it gets harder and harder to change things: it's the 'sand in the gears' that sees IT initiatives grind to a halt.
Reference: https://dzone.com/articles/fight-through-the-pain-how-to-deal-with-technical https://www.devopsgroup.com/blog/five-ways-devops-helps-with-technical-debt/

QUESTION 6
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. The lead developer at your company reports that adding new application features takes longer than expected due to a large accumulated technical debt. You need to recommend changes to reduce the accumulated technical debt.
Solution: You recommend reducing the code complexity.
Does this meet the goal?

A. Yes
B. No

Correct Answer: A
Section:
Explanation:
Note: Technical debt is the accumulation of sub-optimal technical decisions made over the lifetime of an application. Eventually, it gets harder and harder to change things: it's the 'sand in the gears' that sees IT initiatives grind to a halt.
Reference: https://dzone.com/articles/fight-through-the-pain-how-to-deal-with-technical https://www.devopsgroup.com/blog/five-ways-devops-helps-with-technical-debt/

QUESTION 7
During a code review, you discover quality issues in a Java application.
You need to recommend a solution to detect quality issues including unused variables and empty catch blocks. What should you recommend?

A. In a Maven build task, select Run PMD.
B. In an Xcode build task, select Use xcpretty from Advanced.
C. In a Gulp build task, specify a custom condition expression.
D. In a Grunt build task, select Enabled from Control Options.

Correct Answer: A
Section:
Explanation:
PMD is a source code analyzer. It finds common programming flaws like unused variables, empty catch blocks, unnecessary object creation, and so forth. There is an Apache Maven PMD Plugin which allows you to automatically run the PMD code analysis tool on your project's source code and generate a site report with its results. Incorrect Answers:
B: xcpretty is a fast and flexible formatter for xcodebuild.
Reference:
https://pmd.github.io/

QUESTION 8
You use Azure Artifacts to host NuGet packages that you create.
You need to make one of the packages available to anonymous users outside your organization. The solution must minimize the number of publication points. What should you do?

A. Change the feed URL of the package
B. Create a new feed for the package
C. Promote the package to a release view.
D. Publish the package to a public NuGet repository.

Correct Answer: B
Section:
Explanation:
Azure Artifacts introduces the concept of multiple feeds that you can use to organize and control access to your packages. Packages you host in Azure Artifacts are stored in a feed. Setting permissions on the feed allows you to share your packages with as many or as few people as your scenario requires. Feeds have four levels of access: Owners, Contributors, Collaborators, and Readers.
Reference:
https://docs.microsoft.com/en-us/azure/devops/artifacts/feeds/feed-permissions?view=vsts&tabs=new-nav

QUESTION 9
You are designing the development process for your company.
You need to recommend a solution for continuous inspection of the company's code base to locate common code patterns that are known to be problematic. What should you include in the recommendation?

A. Microsoft Visual Studio test plans
B. Gradle wrapper scripts
C. SonarCloud analysis
D. the JavaScript task runner

Correct Answer: C
Section:
Explanation:
SonarCloud is a cloud service offered by SonarSource and based on SonarQube. SonarQube is a widely adopted open source platform to inspect continuously the quality of source code and detect bugs, vulnerabilities and code smells in more than 20 different languages.
Note: The SonarCloud Azure DevOps extension brings everything you need to have your projects analyzed on SonarCloud very quickly. Incorrect Answers:
A: Test plans are used to group together test suites and individual test cases. This includes static test suites, requirement-based suites, and query-based suites.
Reference: https://docs.travis-ci.com/user/sonarcloud/ https://sonarcloud.io/documentation/integrations/vsts/

QUESTION 10
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. The lead developer at your company reports that adding new application features takes longer than expected due to a large accumulated technical debt. You need to recommend changes to reduce the accumulated technical debt.
Solution: You recommend reducing the code coupling and the dependency cycles?
Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section:
Explanation:
Instead reduce the code complexity.
Note: Technical debt is the accumulation of sub-optimal technical decisions made over the lifetime of an application. Eventually, it gets harder and harder to change things: it's the 'sand in the gears' that sees IT initiatives

grind to a halt.

Reference:

https://dzone.com/articles/fight-through-the-pain-how-to-deal-with-technical https://www.devopsgroup.com/blog/five-ways-devops-helps-with-technical-debt/

QUESTION 11

Your company uses Azure DevOps for the build pipelines and deployment pipelines of Java-based projects. You need to recommend a strategy for managing technical debt.

Which two actions should you include in the recommendation? Each correct answer presents part of the solution. NOTE: Each correct selection is worth one point.

A. Configure post-deployment approvals in the deployment pipeline.

B. Configure pre-deployment approvals in the deployment pipeline.

C. Integrate Azure DevOps and SonarQube.

D. Integrate Azure DevOps and Azure DevTest Labs.

Correct Answer: B, C

Section:

Explanation:

B: With SonarQube pre-approval, you can set quality gate.

C: You can manage technical debt with SonarQube and Azure DevOps.

Note: Technical debt is the set of problems in a development effort that make forward progress on customer value inefficient. Technical debt saps productivity by making code hard to understand, fragile, time-consuming to change, difficult to validate, and creates unplanned work that blocks progress. Unless they are managed, technical debt can accumulate and hurt the overall quality of the software and the productivity of the development team in the long term SonarQube an open source platform for continuous inspection of code quality to perform automatic reviews with static analysis of code to: Detect Bugs Code Smells

Security Vulnerabilities

Centralize Quality

What's covered in this lab

Reference: https://azuredevopslabs.com/labs/vstsextend/sonarqube/

QUESTION 12

Your company is building a new solution in Java.

The company currently uses a SonarQube server to analyze the code of .NET solutions.

You need to analyze and monitor the code quality of the Java solution.

Which task types should you add to the build pipeline?

A. Gradle

B. CocoaPods

C. Grunt

D. Gulp

Correct Answer: A

Section:

Explanation:

SonarQube is a set of static analyzers that can be used to identify areas of improvement in your code. It allows you to analyze the technical debt in your project and keep track of it in the future. With Maven and Gradle build tasks, you can run SonarQube analysis with minimal setup in a new or existing Azure DevOps Services build task.

Prepare Analysis Configuration task, to configure all the required settings before executing the build. This task is mandatory.

In case of .NET solutions or Java projects, it helps to integrate seamlessly with MSBuild, Maven and Gradle tasks.

Incorrect Answers:

B: CocoaPods is the dependency manager for Swift and Objective-C Cocoa projects.

Note: There are several versions of this question in the exam. The question can have three correct answers:

MSBuild

Maven

Gradle

The question can also have different incorrect options, including:

Chef

Octopus

xCODE

Reference:

https://docs3.sonarqube.org/latest/analysis/scan/sonarscanner-for-azure-devops/

https://docs.microsoft.com/en-us/azure/devops/java/sonarqube?view=azure-devops

QUESTION 13

Your company is building a new solution in Java.

The company currently uses a SonarQube server to analyze the code of .NET solutions.

You need to analyze and monitor the code quality of the Java solution.

Which task types should you add to the build pipeline?

A. Grunt

B. Octopus

C. Maven

D. Gulp

Correct Answer: C

Section:

Explanation:

SonarQube is a set of static analyzers that can be used to identify areas of improvement in your code. It allows you to analyze the technical debt in your project and keep track of it in the future. With Maven and Gradle build tasks, you can run SonarQube analysis with minimal setup in a new or existing Azure DevOps Services build task.

Prepare Analysis Configuration task, to configure all the required settings before executing the build. This task is mandatory.

In case of .NET solutions or Java projects, it helps to integrate seamlessly with MSBuild, Maven and Gradle tasks.

Note: There are several versions of this question in the exam. The question can have three correct answers:

MSBuild

Maven

Gradle

The question can also have different incorrect options, including:

Chef

xCODE

CocoaPods

Reference:

https://docs3.sonarqube.org/latest/analysis/scan/sonarscanner-for-azure-devops/

https://docs.microsoft.com/en-us/azure/devops/java/sonarqube?view=azure-devops

QUESTION 14

Your company uses Azure DevOps for the build pipelines and deployment pipelines of Java-based projects. You need to recommend a strategy for managing technical debt.

Which action should you include in the recommendation?

A. Configure post-deployment approvals in the deployment pipeline.

B. Integrate Azure DevOps and SonarQube.

C. Integrate Azure DevOps and Azure DevTest Labs.

Correct Answer: B

Section:

Explanation:

You can manage technical debt with SonarQube and Azure DevOps.

Note: Technical debt is the set of problems in a development effort that make forward progress on customer value inefficient. Technical debt saps productivity by making code hard to understand, fragile, time-consuming to change, difficult to validate, and creates unplanned work that blocks progress. Unless they are managed, technical debt can accumulate and hurt the overall quality of the software and the productivity of the development team in the long term

SonarQube an open source platform for continuous inspection of code quality to perform automatic reviews with static analysis of code to:

Detect Bugs

Code Smells

Security Vulnerabilities

Centralize Quality

What's covered in this lab

Reference:

https://azuredevopslabs.com/labs/vstsextend/sonarqube/

QUESTION 15

DRAG DROP

You are developing a full Microsoft .NET Framework solution that includes unit tests.

You need to configure SonarQube to perform a code quality validation of the C# code as part of the build pipelines.

Which four tasks should you perform in sequence? To answer, move the appropriate tasks from the list of tasks to the answer area and arrange them in the correct order.

Select and Place:

Correct Answer:

Actions Commands Cmdlets Statements

Publish Build Artifacts

Answer Area

Prepare Analysis Configuration
Visual Studio Build
Visual Studio Test
Run Code Analysis

Section:

Explanation:

Step 1: Prepare Analysis Configuration

Prepare Analysis Configuration task, to configure all the required settings before executing the build. This task is mandatory.

In case of .NET solutions or Java projects, it helps to integrate seamlessly with MSBuild, Maven and Gradle tasks.

Step 2: Visual Studio Build

Reorder the tasks to respect the following order:

Prepare Analysis Configuration task before any MSBuild or Visual Studio Build task.

Step 3: Visual Studio Test

Reorder the tasks to respect the following order:

Run Code Analysis task after the Visual Studio Test task.

Step 4: Run Code Analysis

Run Code Analysis task, to actually execute the analysis of the source code.

This task is not required for Maven or Gradle projects, because scanner will be run as part of the Maven/Gradle build.

Note:

References: https://docs.sonarqube.org/display/SCAN/Analyzing+with+SonarQube+Extension+for+VSTS-TFS

QUESTION 16

DRAG DROP

You need to find and isolate shared code. The shared code will be maintained in a series of packages.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Actions	Answer Area
Group the related components.	
Assign ownership to each component group.	
Create a dependency graph for the application.	
Identify the most common language used.	
Rewrite the components in the most common language.	

Correct Answer:

Actions	Answer Area
	Create a dependency graph for the application.
	Group the related components.
	Assign ownership to each component group.
Identify the most common language used.	
Rewrite the components in the most common language.	

Section:
Explanation:
Step 1: Create a dependency graph for the application

By linking work items and other objects, you can track related work, dependencies, and changes made over time. All links are defined with a specific link type. For example, you can use Parent/Child links to link work items to support a hierarchical tree structure. Whereas, the Commit and Branch link types support links between work items and commits and branches, respectively.
Step 2: Group the related components.
Packages enable you to share code across your organization: you can compose a large product, develop multiple products based on a common shared framework, or create and share reusable components and libraries.
Step 3: Assign ownership to each component graph
References:
https://docs.microsoft.com/en-us/azure/devops/boards/queries/link-work-items-support-traceability?view=azure-devops&tabs=new-web-form
https://docs.microsoft.com/en-us/visualstudio/releasenotes/tfs2017-relnotes

QUESTION 17
DRAG DROP
You are creating a NuGet package.
You plan to distribute the package to your development team privately.
You need to share the package and test that the package can be consumed.
Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Actions	Answer Area
Create a new Azure Artifacts feed.	
Configure a self-hosted agent.	
Publish a package.	
Install a package.	
Connect to an Azure Artifacts feed.	

Correct Answer:

Actions

Install a package.

Answer Area

Configure a self-hosted agent.

Create a new Azure Artifacts feed.

Publish a package.

Connect to an Azure Artifacts feed.

Section:
Explanation:
Step 1: Configure a self-hosted agent.
The build will run on a Microsoft hosted agent.
Step 2: Create a new Azure Artifacts feed
Microsoft offers an official extension for publishing and managing your private NuGet feeds.
Step 3: Publish the package.
Publish, pack and push the built project to your NuGet feed.
Step 4: Connect to an Azure Artifacts feed.
With the package now available, you can point Visual Studio to the feed, and download the newly published package
References:
https://medium.com/@dan.cokely/creating-nuget-packages-in-azure-devops-with-azure-pipelines-and-yaml-d6fa30f0f15e

QUESTION 18
You use GitHub for source control.
A file that contains sensitive data is committed accidentally to the Get repository of a project.
You need to delete the file and its history form the repository.
Which two tools can you use? Each correct answer presents a complete solution.
NOTE: Each correct selection is worth one point.

A. the get filter-branch command

B. BFG Repo-Cleaner

C. the get rebase command

D. GitHub Desktop

Correct Answer: B, C
Section:

Explanation:

QUESTION 19
Your company uses GitHub for source control. The company has a team that performs code reviews.
You need to automate the assignment of the code reviews. The solution must meet the following requirements:
Prioritize the assignment of code reviews to team members who have the fewest outstanding assignments. Ensure that each team member performs an equal number of code reviews in any 30-day period.
Prevent the assignment of code reviews to the team leader.
Which two actions should you perform? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. Clear Never assign certain team members.

B. Select If assigning team members, don't notify the entire team.

C. Select Never assign certain team members.

D. Set Routing algorithm to Round robin.

E. Set Routing algorithm to Load balance.

Correct Answer: A, E
Section:
Explanation:
A: To always skip certain members of the team, select Never assign certain team members. Then, select one or more team members you'd like to always skip. In this case select the team leader. E: The load balance algorithm chooses reviewers based on each member's total number of recent review requests and considers the number of outstanding reviews for each member. The load balance algorithm tries to ensure that each team member reviews an equal number of pull requests in any 30 day period.
Incorrect Answers:
D: The round robin algorithm chooses reviewers based on who's received the least recent review request, focusing on alternating between all members of the team regardless of the number of outstanding reviews they currently have.
Reference:
https://docs.github.com/en/organizations/organizing-members-into-teams/managing-code-review-assignment-for-your-team

02 - Manage source control
This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.
To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.
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When you are ready to answer a question, click the Question button to return to the question.
Overview
General Overview
Woodgrove Bank is a financial services company that has a main office in the United Kingdom.
Technical Requirements and Planned Changes
Planned Changes
Woodgrove Bank plans to implement the following project management changes:
Implement Azure DevOps for project tracking.
Centralize source code control in private GitHub repositories.
Implement Azure Pipelines for build pipelines and release pipelines.

Woodgrove Bank plans to implement the following changes to the identity environment:

Deploy an Azure AD tenant named woodgrovebank.com.

Sync the Active Directory domain to Azure AD.

Configure App1 to use a service principal.

Integrate GitHub with Azure AD.

Woodgrove Bank plans to implement the following changes to the core apps:

Migrate App1 to ASP.NET Core.

Integrate Azure Pipelines and the third-party build tool used to develop App2.

Woodgrove Bank plans to implement the following changes to the DevOps environment:

Deploy App1 to Azure App Service.

Implement source control for the DB1 schema.

Migrate all the source code from TFS1 to GitHub.

Deploy App2 to an Azure virtual machine named VM1.

Merge the POC branch into the GitHub default branch.

Implement an Azure DevOps dashboard for stakeholders to monitor development progress.

Technical Requirements

Woodgrove Bank identifies the following technical requirements:

The initial databases for new environments must contain both schema and reference data.

An Azure Monitor alert for VM1 must be configured to meet the following requirements:

- Be triggered when average CPU usage exceeds 80 percent for 15 minutes.

- Calculate CPU usage averages once every minute.

• The commit history of the POC branch must replace the history of the default branch.

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The Azure DevOps dashboard must display the metrics shown in the following table.

Number	Required data
1	A comparison between the work the development team planned to deliver and what was delivered
2	The status of the environments in a release definition
3	The total number of results from a work item query

Access to Azure DevOps must be restricted to specific IP addresses.

Page load times for App1 must be captured and monitored.

Administrative effort must be minimized.

QUESTION 1

DRAG DROP

You need to replace the existing DevOps tools to support the planned changes.

What should you use? To answer, drag the appropriate tools to the correct targets. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Tools

- Azure Boards
- Azure Artifacts
- GitHub Actions
- Azure Pipelines
- Azure Test Plans
- GitHub repositories

Answer Area

Trello:	Tool
Bamboo:	Tool
BitBucket:	Tool

Correct Answer:

Tools

- Azure Artifacts
- GitHub Actions
- Azure Test Plans

Answer Area

Trello:	Azure Boards
Bamboo:	Azure Pipelines
BitBucket:	GitHub repositories

Section:

Explanation:

Box 1: Azure Boards

Azure Boards can be used to track work with Kanban boards, backlogs, team dashboards, and custom reporting

You can create multiple Trello boards, which are spaces to store tasks (for different work contexts, or even private boards) You can easily share Trello boards with another person.

Box 2: Azure Pipelines

You can use Bamboo to implement CI/CD (Continuous Integration and Continuous Delivery) for a simple Azure function app using Atlassian Bamboo. Bamboo does continuous delivery of the project from source code to deployment. It has stages including Build, Test and Deploy.

Software teams in every industry are upgrading their continuous delivery pipeline with Bamboo. Easy build import from popular open source tools, user and group import from JIRA, seamless integration with Bitbucket, and native support for Git, Hg, and SVN means you'll be building and deploying like a champ.

Box 3: GitHub repositories

Bitbucket can be used as the Get repository, but you can use any other Git repository (Like TFS Git) for source control of the code.

Reference:

https://www.trustradius.com/compare-products/azure-devops-services-vs-trello

https://marketplace.visualstudio.com/items?itemName=ms-vsts.vss-services-bamboo

https://www.c-sharpcorner.com/article/cicd-implementation-for-an-azure-function-app-using-atlassian-bamboo-server/

01 - Facilitate communication and collaboration

QUESTION 1

Your company plans to use an agile approach to software development.

You need to recommend an application to provide communication between members of the development team who work in locations around the world. The applications must meet the following requirements:

Provide the ability to isolate the members of different project teams into separate communication channels and to keep a history of the chats within those channels. Be available on Windows 10, Mac OS, iOS, and Android operating systems.

Provide the ability to add external contractors and suppliers to projects.

Integrate directly with Azure DevOps.

What should you recommend?

A. Microsoft Project

B. Bamboo

C. Microsoft Lync

D. Microsoft Teams

Correct Answer: D
Section:
Explanation:

Within each team, users can create different channels to organize their communications by topic. Each channel can include a couple of users or scale to thousands of users. Microsoft Teams works on Android, iOS, Mac and Windows systems and devices. It also works in Chrome, Firefox, Internet Explorer 11 and Microsoft Edge web browsers. The guest-access feature in Microsoft Teams allows users to invite people outside their organizations to join internal channels for messaging, meetings and file sharing. This capability helps to facilitate business-to-business project management.

Teams integrates with Azure DevOps.

Note: Slack would also be a correct answer, but it is not an option here.

Reference:

https://searchunifiedcommunications.techtarget.com/definition/Microsoft-Teams

QUESTION 2

You are developing a multi-tier application. The application will use Azure App Service web apps as the front end and an Azure SQL database as the back end. The application will use Azure functions to write some data to Azure Storage. You need to send the Azure DevOps team an email message when the front end fails to return a status code of 200. Which feature should you use?

A. Service Map in Azure Log Analytics

B. availability tests in Azure Application Insights

C. Profiler in Azure Application Insights

D. Application Map in Azure Application Insights

Correct Answer: D

Reference: https://docs.microsoft.com/en-us/azure/azure-monitor/app/app-map

QUESTION 3
Your company plans to use an agile approach to software development.
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Provide the ability to isolate the members of different project teams into separate communication channels and to keep a history of the chats within those channels. Be available on Windows 10, Mac OS, iOS, and Android operating systems.
Provide the ability to add external contractors and suppliers to projects.
Integrate directly with Azure DevOps.
What should you recommend?

A. Skype for Business

B. Bamboo

C. Octopus

D. Slack

Correct Answer: D
Section:
Explanation:
Slack is a popular team collaboration service that helps teams be more productive by keeping all communications in one place and easily searchable from virtually anywhere. All your messages, your files, and everything from Twitter, Dropbox, Google Docs, Azure DevOps, and more all together. Slack also has fully native apps for iOS and Android to give you the full functionality of Slack wherever you go. Integrated with Azure DevOps
This integration keeps your team informed of activity happening in its Azure DevOps projects. With this integration, code check-ins, pull requests, work item updates, and build events show up directly in your team's Slack channel. Note: Microsoft Teams would also be a correct answer, but it is not an option here.
Reference: https://marketplace.visualstudio.com/items?itemName=ms-vsts.vss-services-slack

QUESTION 4
Your company has 60 developers who are assigned to four teams. Each team has 15 members.
The company uses an agile development methodology.
You need to structure the work of the development teams so that each team owns their respective work while working together to reach a common goal. Which parts of the taxonomy should you enable the team to perform autonomously?

A. Features and Tasks

B. Initiatives and Epics

C. Epics and Features

D. Stories and Tasks

Correct Answer: A
Section:
Explanation:
A feature typically represents a shippable component of software.
Features, examples:
Add view options to the new work hub
Add mobile shopping cart
Support text alerts
Refresh the web portal with new look and feel
User Stories and Tasks are used to track work. Teams can choose how they track bugs, either as requirements or as tasks
Incorrect Answers:

B, C: An epic represents a business initiative to be accomplished.

Epics, examples:

Increase customer engagement

Improve and simplify the user experience

Implement new architecture to improve performance

Engineer the application to support future growth

Support integration with external services

• Support mobile apps

Support mobile apps

Reference:

https://docs.microsoft.com/en-us/azure/devops/boards/backlogs/define-features-epics

https://docs.microsoft.com/en-us/azure/devops/boards/work-items/about-work-items

QUESTION 5

Your company creates a new Azure DevOps team.

You plan to use Azure DevOps for sprint planning.

You need to visualize the flow of your work by using an agile methodology.

Which Azure DevOps component should you use?

A. Kanban boards

B. sprint planning

C. delivery plans

D. portfolio backlogs

Correct Answer: A

Section:

Explanation:

Customizing Kanban boards

To maximize a team's ability to consistently deliver high quality software, Kanban emphasize two main practices. The first, visualize the flow of work, requires you to map your team's workflow stages and configure your Kanban board to match. Your Kanban board turns your backlog into an interactive signboard, providing a visual flow of work.

Reference: https://azuredevopslabs.com/labs/azuredevops/agile/

QUESTION 6

Your company implements an Agile development methodology.

You plan to implement retrospectives at the end of each sprint.

Which three questions should you include? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. Who performed well?

B. Who should have performed better?

C. What could have gone better?

D. What went well?

E. What should we try next?

Correct Answer: B, C, E

Section:

Explanation:

Sprint retrospective meetings

The sprint retrospective meeting typically occurs on the last day of the sprint, after the sprint review meeting. In this meeting, your team explores its execution of Scrum and what might need tweaking.

Based on discussions, your team might decide to change one or more processes to improve its own effectiveness, productivity, quality, and satisfaction. This meeting and the resulting improvements are critical to the agile principle of self-organization.

Look to address these areas during your team sprint retrospectives:

Issues that affected your team's general effectiveness, productivity, and quality.

Elements that impacted your team's overall satisfaction and project flow.

What happened to cause incomplete backlog items? What actions will the team take to prevent these issues in the future?

Reference:

https://docs.microsoft.com/en-us/azure/devops/boards/sprints/best-practices-scrum

QUESTION 7

Your team uses an agile development approach.

You need to recommend a branching strategy for the team's Get repository. The strategy must meet the following requirements.

Provide the ability to work on multiple independent tasks in parallel.

Ensure that checked-in code remains in a releasable state always.

Ensure that new features can be abandoned at any time.

Encourage experimentation.

What should you recommend?

A. a single long-running branch without forking

B. multiple long-running branches

C. a single fork per team member

D. a single long-running branch with multiple short-lived feature branches

Correct Answer: D
Section:
Explanation:
Topic/feature branches, however, are useful in projects of any size. A topic branch is a short-lived branch that you create and use for a single particular feature or related work. This is something you've likely never done with a VCS before because it's generally too expensive to create and merge branches. But in Git it's common to create, work on, merge, and delete branches several times a day.

Reference: https://git-scm.com/book/en/v2/Git-Branching-Branching-Workflows

QUESTION 8
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. You integrate a cloud-hosted Jenkins server and a new Azure DevOps deployment.

You need Azure DevOps to send a notification to Jenkins when a developer commits changes to a branch in Azure Repos. Solution: You create a service hook subscription that uses the build completed event.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:
You can create a service hook for Azure DevOps Services and TFS with Jenkins.

However, the service subscription event should use the code pushed event, is triggered when the code is pushed to a Git repository.

QUESTION 9
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correct solution, while others might not have a correct solution.

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You need Azure DevOps to send a notification to Jenkins when a developer commits changes to a branch in Azure Repos. Solution: You create an email subscription to an Azure DevOps notification.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:
You can create a service hook for Azure DevOps Services and TFS with Jenkins.
Reference:
https://docs.microsoft.com/en-us/azure/devops/service-hooks/services/jenkins

QUESTION 10
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You need Azure DevOps to send a notification to Jenkins when a developer commits changes to a branch in Azure Repos. Solution: You create a service hook subscription that uses the code pushed event.

Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:
Explanation:
You can create a service hook for Azure DevOps Services and TFS with Jenkins. The code push event is triggered when the code is pushed to a Git repository.
Reference:
https://docs.microsoft.com/en-us/azure/devops/service-hooks/services/jenkins https://docs.microsoft.com/en-us/azure/devops/service-hooks/events

QUESTION 11
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You need Azure DevOps to send a notification to Jenkins when a developer commits changes to a branch in Azure Repos. Solution: You add a trigger to the build pipeline.

Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:
Explanation:

QUESTION 12

You plan to create in Azure DevOps. Multiple developers will work on the project. The developers will work offline frequently and will require access to the full project history while they are offline. Which version control solution should you use?

A. Team Foundation Version Control
B. Git
C. TortoiseSVN
D. Subversion

Correct Answer: B
Section:
Explanation:
Git history: File history is replicated on the client dev machine and can be viewed even when not connected to the server. You can view history in Visual Studio and on the web portal.
Note: Azure Repos supports two types of version control: Git and Team Foundation Version Control (TFVC).
Incorrect Answers:
A: Team Foundation Version Control: File history is not replicated on the client dev machine and so can be viewed only when you're connected to the server.
Reference:
https://docs.microsoft.com/en-us/azure/devops/repos/tfvc/comparison-git-tfvc

QUESTION 13

You plan to onboard 10 new developers.
You need to recommend a development environment that meets the following requirements:
Integrates with GitHub
Provides integrated debugging tools
Supports remote workers and hot-desking environments
Supports developers who use browsers, tablets, and Chromebooks
What should you recommend?

A. VS Code
B. Xamarin Studio
C. MonoDevelop
D. Visual Studio Codespaces

Correct Answer: D
Section:
Explanation:
Visual Studio Codespaces is built to accommodate the widest variety of projects or tasks, including GitHub and integrating debugging. Visual Studio Codespaces conceptually and technically extends the Visual Studio Code Remote Development extensions. In addition to "backend" environments, Visual Studio Codespaces supports these "frontend" editors:
Visual Studio Code
Visual Studio Code-based editor in the browser
Reference:
https://docs.microsoft.com/sv-se/visualstudio/codespaces/overview/what-is-vsonline

QUESTION 14

You have a build pipeline in Azure Pipelines.
You create a Slack App Integration.
You need to send build notifications to a Slack channel named #Development.
What should you do first?

A. Create a project-level notification.

B. Configure a service connection.

C. Create a global notification.

D. Creates a service hook subscription.

Correct Answer: D
Section:
Explanation:
Create a service hook for Azure DevOps with Slack to post messages to Slack in response to events in your Azure DevOps organization, such as completed builds, code changes, pull requests, releases, work items changes, and more.
Note:
1. Go to your project Service Hooks page:
https://{orgName}/{project_name}/_settings/serviceHooks
Select Create Subscription.
2. Choose the types of events you want to appear in your Slack channel.
3. Paste the Web Hook URL from the Slack integration that you created and select Finish.
4. Now, when the event you configured occurs in your project, a notification appears in your team's Slack channel.
Reference:
https://docs.microsoft.com/en-us/azure/devops/service-hooks/services/slack

QUESTION 15
You have an Azure DevOps organization named Contoso and an Azure subscription.
You use Azure DevOps to build and deploy a web app named App1. Azure Monitor is configured to generate an email notification in response to alerts generated whenever App1 generates a server-side error. You need to receive notifications in Microsoft Teams whenever an Azure Monitor alert is generated.
Which two actions should you perform? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. Create an Azure Monitor workbook.

B. Create an Azure logic app that has an HTTP request trigger.

C. Create an Azure logic app that has an Azure DevOps trigger.

D. Modify an action group in Azure Monitor.

E. Modify the Diagnostics settings in Azure Monitor.

Correct Answer: C, D
Section:
Explanation:
Reference:
https://dirteam.com/dave/2019/05/14/getting-azure-devops-tasks-in-to-do-with-flow/

QUESTION 16
You have an Azure DevOps organization that contains a project named Project1.
You need to create a published wiki in Project1.
What should you do first?

A. Modify the Storage settings of Project1.

B. In Project1, create an Azure DevOps pipeline.

C. In Project1, create an Azure DevOps repository.

D. Modify the Team configuration settings of Project1.

Correct Answer: C
Section:
Explanation:
Reference:
https://docs.microsoft.com/en-us/azure/devops/project/wiki/publish-repo-to-wiki?view=azure-devops&tabs=browser

QUESTION 17
HOTSPOT
Your company uses Azure DevOps for Get source control.
You have a project in Azure DevOps named Contoso App that contains the following repositories:
https://dev.azure.com/contoso/contoso-app/core-api
https://dev.azure.com/contoso/contoso-app/core-spa
https://dev.azure.com/contoso/contoso-app/core-db
You need to ensure that developers receive Slack notifications when there are pull requests created for Contoso App. What should you run in Slack? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Hot Area:
Answer Area

/azrepos	▼	▼
	feedback	https://dev.azure.com/contoso/contoso-app
	signin	https://dev.azure.com/contoso/contoso-app/core-api
	subscribe	https://dev.azure.com/contoso/contoso-app/core-db
	subscriptions	https://dev.azure.com/contoso/contoso-app/core-spa

Answer Area:
Answer Area

/azrepos	▼	▼
	feedback	https://dev.azure.com/contoso/contoso-app
	signin	https://dev.azure.com/contoso/contoso-app/core-api
	subscribe	https://dev.azure.com/contoso/contoso-app/core-db
	subscriptions	https://dev.azure.com/contoso/contoso-app/core-spa

Section:
Explanation:
Box 1: subscribe
To start monitoring all Get repositories in a project, use the following slash command inside a channel:
/azrepos subscribe [project url]
Box 2: https://dev.azure.com/contoso/contoso-app
You can also monitor a specific repository using the following command:
/azrepos subscribe [repository url]

The repository URL can be to any page within your repository that has your repository name.
For example, for Git repositories, use:
/azrepos subscribe https://dev.azure.com/myorg/myproject/_git/myrepository
Reference:
https://docs.microsoft.com/en-us/azure/devops/repos/integrations/repos-slack

QUESTION 18
You have a project in Azure DevOps named Project1. Project1 contains a published wiki.
You need to change the order of pages in the navigation pane of the published wiki in the Azure DevOps portal.
What should you do?

A. At the root of the wiki, create a file named .order that defines the page hierarchy.

B. At the root of the wiki, create a file named wiki.md that defines the page hierarchy.

C. Rename the pages in the navigation pane.

D. Drag and drop the pages in the navigation pane.

Correct Answer: B
Section:
Explanation:
Reorder a wiki page
You can reorder pages within the wiki tree view to have pages appear in the order and hierarchy you want. You can drag-and-drop a page title in the tree view to do the following operations:
Change the parent-child relationship of a page
Change the order of the page within the hierarchy
Reference:
https://docs.microsoft.com/en-us/azure/devops/project/wiki/add-edit-wiki

QUESTION 19
DRAG DROP
You have a GitHub organization named org1 and an Azure tenant named Tenant1.
You need to enable single sign-on (SSO) in Azure Active Directory (Azure AD) for the users in org1.
Which URIs should you use for the SAML configuration in Azure AD? To answer, drag the appropriate URIs to the correct settings. Each URI may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.
NOTE: Each correct selection is worth one point.

Select and Place:

Correct Answer:

URIs

https://login.microsoftonline.com/tenant1	
https://login.microsoftonline.com/tenant1.com	

Answer Area

Identifier (Entity ID): `https://github.com/orgs/org1`

Reply URL (Assertion Consumer Service URL): `https://github.com/orgs/org1/saml/consume`

Sign on URL: `https://github.com/orgs/org1/sso`

Section:
Explanation:
Reference:
https://docs.microsoft.com/en-us/azure/active-directory/saas-apps/github-tutorial

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Woodgrove Bank plans to implement the following changes to the identity environment:
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Sync the Active Directory domain to Azure AD.
Configure App1 to use a service principal.
Integrate GitHub with Azure AD.
Woodgrove Bank plans to implement the following changes to the core apps:
Migrate App1 to ASP.NET Core.
Integrate Azure Pipelines and the third-party build tool used to develop App2.
Woodgrove Bank plans to implement the following changes to the DevOps environment:
Deploy App1 to Azure App Service.
Implement source control for the DB1 schema.
Migrate all the source code from TFS1 to GitHub.

Deploy App2 to an Azure virtual machine named VM1.

Merge the POC branch into the GitHub default branch.

Implement an Azure DevOps dashboard for stakeholders to monitor development progress.

Technical Requirements

Woodgrove Bank identifies the following technical requirements:

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An Azure Monitor alert for VM1 must be configured to meet the following requirements:

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- Calculate CPU usage averages once every minute.

• The commit history of the POC branch must replace the history of the default branch.

The commit history of the POC branch must replace the history of the default branch.

The Azure DevOps dashboard must display the metrics shown in the following table:

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1	A comparison between the work the development team planned to deliver and what was delivered
2	The status of the environments in a release definition
3	The total number of results from a work item query

Access to Azure DevOps must be restricted to specific IP addresses.

Page load times for App1 must be captured and monitored.

Administrative effort must be minimized.

QUESTION 1

You need to perform the GitHub code migration. The solution must support the planned changes for the DevOps environment.

What should you use?

A. git clone

B. GitHub Importer

C. Import repository in Azure Repos

D. git-tfs

Correct Answer: D

Section:

Explanation:

Woodgrove Bank plans to implement the following changes to the DevOps environment:

Migrate all the source code from TFS1 to GitHub.

The Git-TFS tool is a two-way bridge between Team Foundation Version Control and Git, and can be used to perform a migration.

Reference:

https://docs.microsoft.com/en-us/devops/develop/git/migrate-from-tfvc-to-git

01 - Define and implement continuous integration

QUESTION 1

Your company has a project in Azure DevOps.
You need to ensure that when there are multiple builds pending deployment, only the most recent build is deployed. What should you use?

A. deployment conditions
B. deployment queue settings
C. release gates
D. pull request triggers

Correct Answer: B
Section:
Explanation:
The options you can choose for a queuing policy are:
Number of parallel deployments
If you specify a maximum number of deployments, two more options appear:
- Deploy all in sequence
- Deploy latest and cancel the others: Use this option if you are producing releases faster than builds, and you only want to deploy the latest build.
Incorrect Answers:
C: Release gates allow automatic collection of health signals from external services, and then promote the release when all the signals are successful at the same time or stop the deployment on timeout. Typically, gates are used in connection with incident management, problem management, change management, monitoring, and external approval systems.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/process/stages?tabs=classic&view=azure-devops#queuing-policies

QUESTION 2
Your company develops a client banking application that processes a large volume of data.
Code quality is an ongoing issue for the company. Recently, the code quality has deteriorated because of an increase in time pressure on the development team. You need to implement static code analysis.
During which phase should you use static code analysis?

A. integration testing
B. staging
C. production release
D. build

Correct Answer: D
Section:
Explanation:

QUESTION 3
SIMULATION
You have an Azure function hosted in an App Service plan named az400-9940427-func1.
You need to configure az400-9940427-func1 to upgrade the functions automatically whenever new code is committed to the master branch of https://github.com/Azure-Samples/functions-quickstart. To complete this task, sign in to the Microsoft Azure portal.

A. See solution below.

Correct Answer: A
Section:
Explanation:
1. Open Microsoft Azure Portal

2. Log into your Azure account, select App Services in the Azure portal left navigation, and then select configure az400-9940427-func1. 3. On the app page, select Deployment Center in the left menu.

4. On the Build provider page, select Azure Pipelines (Preview), and then select Continue.

5. On the Configure page, in the Code section:

For GitHub, drop down and select the Organization, Repository, and Branch you want to deploy continuously. 6. Select Continue.

7. On the Test page, choose whether to enable load tests, and then select Continue.

8. Depending on your App Service plan pricing tier, you may see a Deploy to staging page. Choose whether to enable deployment slots, and then select Continue.

9. After you configure the build provider, review the settings on the Summary page, and then select Finish.

Reference:

https://docs.microsoft.com/en-us/azure/app-service/deploy-continuous-deployment

QUESTION 4

You are developing an application. The application source has multiple branches.

You make several changes to a branch used for experimentation.

You need to update the main branch to capture the changes made to the experimentation branch and override the history of the Get repository. Which Get option should you use?

A. Rebase

B. Fetch

C. Merge

D. Push

Correct Answer: C

Section:

Explanation:

Create pull requests to review and merge code in a Get project. Pull requests let your team review code and give feedback on changes before merging it into the master branch.

Incorrect Answers:

A: Use rebase to address the problem of updating your branch with the latest changes from the main branch. Rebase takes the changes made in the commits in your current branch and replays them on the history of another branch. The commit history of your current branch will be rewritten so that it starts from the most recent commit in the target branch of the rebase. Rebasing your changes in your feature branch off the latest changes in the main branch lets you test your changes on the most recent version in the main branch while keeping a clean get history.

D: Share changes made in commits and branches using the push command. Push your branches to the remote repository. get adds your commits to an existing branch on the remote or creates a new branch with the same commits as your local branch.

Reference:

https://docs.microsoft.com/en-us/azure/devops/repos/git/pull-requests

QUESTION 5

Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. You use Azure Pipelines to build and test a React.js application.

You have a pipeline that has a single job.

You discover that installing JavaScript packages from npm takes approximately five minutes each time you run the pipeline. You need to recommend a solution to reduce the pipeline execution time.

Solution: You recommend defining a container job that uses a custom container that has the JavaScript packages preinstalled. Does this meet the goal?

A. Yes

B. No

Correct Answer: B

Section:

Explanation:

Instead enable pipeline caching.

Note:

npm-cache is a command line utility that caches dependencies installed via npm, bower, jspm and composer. It is useful for build processes that run [npm|bower|composer|jspm] install every time as part of their build process. Since dependencies don't change often, this often means slower build times. npm-cache helps alleviate this problem by caching previously installed dependencies on the build machine.
Reference: https://www.npmjs.com/package/npm-cache

QUESTION 6
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. You use Azure Pipelines to build and test a React.js application.
You have a pipeline that has a single job.
You discover that installing JavaScript packages from npm takes approximately five minutes each time you run the pipeline. You need to recommend a solution to reduce the pipeline execution time.
Solution: You recommend enabling pipeline caching.
Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:
Explanation:
npm-cache is a command line utility that caches dependencies installed via npm, bower, jspm and composer. It is useful for build processes that run [npm|bower|composer|jspm] install every time as part of their build process. Since dependencies don't change often, this often means slower build times. npm-cache helps alleviate this problem by caching previously installed dependencies on the build machine.
Reference: https://www.npmjs.com/package/npm-cache

QUESTION 7
You manage build pipelines and deployment pipelines by using Azure DevOps.
Your company has a team of 500 developers. New members are added continually to the team.
You need to automate the management of users and licenses whenever possible.
Which task must you perform manually?

A. modifying group memberships

B. adding users

C. assigning entitlements

D. procuring licenses

Correct Answer: D
Section:
Explanation:
Incorrect Answers:
A: You can seamlessly replace existing solutions with group-based licensing to more easily manage licenses in Azure DevOps. You can use Group rules.
C: Member Entitlement Management APIs allow managing Entitlements that include -
License
Extensions
Project/Team memberships
Reference:
https://docs.microsoft.com/en-us/azure/devops/organizations/accounts/migrate-to-group-based-resource-management?view=vsts&tabs=new-nav
https://docs.microsoft.com/en-us/rest/api/azure/devops/memberentitlementmanagement/?view=azure-devops-rest-5.0

QUESTION 8
You store source code in a Get repository in Azure Repos. You use a third-party continuous integration (CI) tool to control builds. What will Azure DevOps use to authenticate with the tool?

A. certificate authentication

B. a personal access token (PAT)

C. a Shared Access Signature (SAS) token

D. NTLM authentication

Correct Answer: B
Section:
Explanation:
Personal access tokens (PATs) give you access to Azure DevOps and Team Foundation Server (TFS), without using your username and password directly.
Reference: https://docs.microsoft.com/en-us/azure/devops/repos/git/auth-overview

QUESTION 9
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You need to recommend an integration strategy for the build process of a Java application. The solution must meet the following requirements:
The builds must access an on-premises dependency management system.
The build outputs must be stored as Server artifacts in Azure DevOps.
The source code must be stored in a Get repository in Azure DevOps.
Solution: Configure an Octopus Tentacle on an on-premises machine. Use the Package Application task in the build pipeline. Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:
Explanation:
Octopus Deploy is an automated deployment server that makes it easy to automate deployment of ASP.NET web applications, Java applications, NodeJS application and custom scripts to multiple environments. Octopus can be installed on various platforms including Windows, Mac and Linux. It can also be integrated with most version control tools including VSTS and GIT. When you deploy software to Windows servers, you need to install Tentacle, a lightweight agent service, on your Windows servers so they can communicate with the Octopus server. When defining your deployment process, the most common step type will be a package step. This step deploys your packaged application onto one or more deployment targets. When deploying a package you will need to select the machine role that the package will be deployed to.
Reference:
https://octopus.com/docs/deployment-examples/package-deployments https://explore.emtecinc.com/blog/octopus-for-automated-deployment-in-devops-models

QUESTION 10
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You need to recommend an integration strategy for the build process of a Java application. The solution must meet the following requirements:
The builds must access an on-premises dependency management system.
The build outputs must be stored as Server artifacts in Azure DevOps.
The source code must be stored in a Get repository in Azure DevOps.
Solution: Install and configure a self-hosted build agent on an on-premises machine. Configure the build pipeline to use the Default agent pool. Include the Java Tool Installer task in the build pipeline.
Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:
Explanation:

QUESTION 11
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You need to recommend an integration strategy for the build process of a Java application. The solution must meet the following requirements:
The builds must access an on-premises dependency management system.
The build outputs must be stored as Server artifacts in Azure DevOps.
The source code must be stored in a Get repository in Azure DevOps.
Solution: Configure the build pipeline to use a Hosted VS 2019 agent pool. Include the Java Tool Installer task in the build pipeline.
Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:
Instead use Octopus Tentacle.
Reference:
https://explore.emtecinc.com/blog/octopus-for-automated-deployment-in-devops-models

QUESTION 12
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You need to recommend an integration strategy for the build process of a Java application. The solution must meet the following requirements:
The builds must access an on-premises dependency management system.
The build outputs must be stored as Server artifacts in Azure DevOps.
The source code must be stored in a Get repository in Azure DevOps.
Solution: Configure the build pipeline to use a Hosted Ubuntu agent pool. Include the Java Tool Installer task in the build pipeline.
Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:
Instead use Octopus Tentacle.
Reference: https://explore.emtecinc.com/blog/octopus-for-automated-deployment-in-devops-models

QUESTION 13
Your company uses a Get repository in Azure Repos to manage the source code of a web application. The master branch is protected from direct updates. Developers work on new features in the topic branches.
Because of the high volume of requested features, it is difficult to follow the history of the changes to the master branch.
You need to enforce a pull request merge strategy. The strategy must meet the following requirements:

Consolidate commit histories.

Merge the changes into a single commit.

Which merge strategy should you use in the branch policy?

A. squash merge

B. fast-forward merge

C. Get fetch

D. no-fast-forward merge

Correct Answer: A
Section:
Explanation:
Squash merging is a merge option that allows you to condense the Get history of topic branches when you complete a pull request. Instead of each commit on the topic branch being added to the history of the default branch, a squash merge takes all the file changes and adds them to a single new commit on the default branch.

A simple way to think about this is that squash merge gives you just the file changes, and a regular merge gives you the file changes and the commit history. Note: Squash merging keeps your default branch histories clean and easy to follow without demanding any workflow changes on your team. Contributors to the topic branch work how they want in the topic branch, and the default branches keep a linear history through the use of squash merges. The commit history of a master branch updated with squash merges will have one commit for each merged branch. You can step through this history commit by commit to find out exactly when work was done.

Reference:

https://docs.microsoft.com/en-us/azure/devops/repos/git/merging-with-squash

QUESTION 14
Your company uses cloud-hosted Jenkins for builds.

You need to ensure that Jenkins can retrieve source code from Azure Repos.

Which three actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. Create a webhook in Jenkins.

B. Add the Team Foundation Server (TFS) plug-in to Jenkins.

C. Add a personal access token to your Jenkins account.

D. Create a personal access token (PAT) in your Azure DevOps account.

E. Create a service hook in Azure DevOps.

Correct Answer: B, C, D
Section:
Explanation:
B: Jenkins requires a plug-in to connect to TFS and check for updates to a project.

Jenkins' built-in Get Plugin or Team Foundation Server Plugin can poll a Team Services repository every few minutes and queue a job when changes are detected.

C: Use Azure DevOps/ Visual Studio Team Services to create a Personal access token.

D: After you have generated credentials using Visual Studio Team Services, you need to use those credentials in Jenkins.

Reference:

http://www.aisoftwarellc.com/blog/post/how-to-setup-automated-builds-using-jenkins-and-visual-studio-team-foundation-server/2044

QUESTION 15
You are automating the build process for a Java-based application by using Azure DevOps.

You need to add code coverage testing and publish the outcomes to the pipeline.

What should you use?

A. Bullseye Coverage

B. JUnit

C. JaCoCo

D. MSTest

Correct Answer: C
Section:
Explanation:
Use Publish Code Coverage Results task in a build pipeline to publish code coverage results to Azure Pipelines or TFS, which were produced by a build in Cobertura or JaCoCo format. Incorrect Answers:
A: Bullseye Coverage is used for C++ code, and not for Java.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/tasks/test/publish-code-coverage-results

QUESTION 16
You are automating the build process for a Java-based application by using Azure DevOps.
You need to add code coverage testing and publish the outcomes to the pipeline.
What should you use?

A. Cobertura

B. Bullseye Coverage

C. MSTest

D. Coverlet

E. NUnit

F. Coverage.py

Correct Answer: A
Section:
Explanation:
Use Publish Code Coverage Results task in a build pipeline to publish code coverage results to Azure Pipelines or TFS, which were produced by a build in Cobertura or JaCoCo format.
Incorrect Answers:
B: Bullseye Coverage is used for C++ code, and not for Java.
D: If you're building on Linux or macOS, you can use Coverlet or a similar tool to collect code coverage metrics. Code coverage results can be published to the server by using the Publish Code Coverage Results task. To leverage this functionality, the coverage tool must be configured to generate results in Cobertura or JaCoCo coverage format.
F: Coverage.py is used for Python, not for Java.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/tasks/test/publish-code-coverage-results

QUESTION 17
You have an existing build pipeline in Azure Pipelines.
You need to use incremental builds without purging the environment between pipeline executions.
What should you use?

A. a self-hosted agent

B. Microsoft-hosted parallel jobs

C. a File Transform task

Correct Answer: A
Section:
Explanation:

When you run a pipeline on a self-hosted agent, by default, none of the subdirectories are cleaned in between two consecutive runs. As a result, you can do incremental builds and deployments, provided that tasks are implemented to make use of that. You can override this behavior using the workspace setting on the job.
Incorrect Answers:
B: The workspace clean options are applicable only for self-hosted agents. When using Microsoft-hosted agents job are always run on a new agent.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/process/phases

QUESTION 18
You have a private project in Azure DevOps.
You need to ensure that a project manager can create custom work item queries to report on the project's progress. The solution must use the principle of least privilege. To which security group should you add the project manager?

A. Reader
B. Project Collection Administrators
C. Project Administrators
D. Contributor

Correct Answer: D
Section:
Explanation:
Contributors have permissions to contribute fully to the project code base and work item tracking. The main permissions they don't have or those that manage or administer resources.
Reference:
https://docs.microsoft.com/en-us/azure/devops/organizations/security/permissions

QUESTION 19
Your company has a project in Azure DevOps for a new application. The application will be deployed to several Azure virtual machines that run Windows Server 2019.
You need to recommend a deployment strategy for the virtual machines. The strategy must meet the following requirements:
Ensure that the virtual machines maintain a consistent configuration.
Minimize administrative effort to configure the virtual machines.
What should you include in the recommendation?

A. Azure Resource Manager templates and the PowerShell Desired State Configuration (DSC) extension for Windows
B. Deployment YAML and Azure pipeline deployment groups
C. Azure Resource Manager templates and the Custom Script Extension for Windows
D. Deployment YAML and Azure pipeline stage templates

Correct Answer: C
Section:
Explanation:
The Custom Script Extension downloads and executes scripts on Azure virtual machines. This extension is useful for post deployment configuration, software installation, or any other configuration or management tasks. Scripts can be downloaded from Azure storage or GitHub, or provided to the Azure portal at extension run time. The Custom Script Extension integrates with Azure Resource Manager templates, and can be run using the Azure CLI, PowerShell, Azure portal, or the Azure Virtual Machine REST API.
Incorrect Answers:
B: YAML doesn't work with Azure pipeline deployment groups.
Reference:
https://docs.microsoft.com/en-us/azure/virtual-machines/extensions/custom-script-windows

QUESTION 20
You have an Azure DevOps project that uses many package feeds.

You need to simplify the project by using a single feed that stores packages produced by your company and packages consumed from remote feeds. The solution must support public feeds and authenticated feeds. What should you enable in DevOps?

A. Universal Packages

B. upstream sources

C. views in Azure Artifacts

D. a symbol server

Correct Answer: C
Section:

QUESTION 21
SIMULATION
You plan to deploy a runbook that will create Azure AD user accounts.
You need to ensure that runbooks can run the Azure PowerShell cmdlets for Azure Active Directory.
To complete this task, sign in to the Microsoft Azure portal.

A. See solution below.

Correct Answer: A
Section:
Explanation:
Azure Automation now ships with the Azure PowerShell module of version 0.8.6, which introduced the ability to non-interactively authenticate to Azure using OrgId (Azure Active Directory user) credential-based authentication. Using the steps below, you can set up Azure Automation to talk to Azure using this authentication type.
Step 1: Find the Azure Active Directory associated with the Azure subscription to manage:
1. Log in to the Azure portal as the service administrator for the Azure subscription you want to manage using Azure Automation. You can find this user by logging in to the Azure portal as any user with access to this Azure subscription, then clicking Settings, then Administrators.

2. Note the name of the directory associated with the Azure subscription you want to manage. You can find this directory by clicking Settings, then Subscriptions.
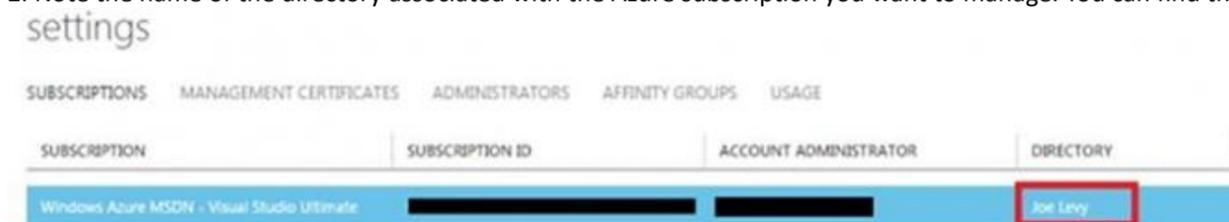
Step 2: Create an Azure Active Directory user in the directory associated with the Azure subscription to manage:
You can skip this step if you already have an Azure Active Directory user in this directory. and plan to use this OrgId to manage Azure.
1. In the Azure portal click on Active Directory service.

2. Click the directory name that is associated with this Azure subscription.
3. Click on the Users tab and then click the Add User button.
4. For type of user, select "New user in your organization." Enter a username for the user to create.
5. Fill out the user's profile. For role, pick "User." Don't enable multi-factor authentication. Multi-factor accounts cannot be used with Azure Automation.
6. Click Create.
7. Jot down the full username (including part after @ symbol) and temporary password.
Step 3: Allow this Azure Active Directory user to manage this Azure subscription.
1. Click on Settings (bottom Azure tab under StorSimple)

2. Click Administrators
3. Click the Add button. Type the full user name (including part after @ symbol) of the Azure Active Directory user you want to set up to manage Azure. For subscriptions, choose the Azure subscriptions you want this user to be able to manage.

Click the check mark.

Step 4: Configure Azure Automation to use this Azure Active Directory user to manage this Azure subscription Create an Azure Automation credential asset containing the username and password of the Azure Active Directory user that you have just created. You can create a credential asset in Azure Automation by clicking into an Automation Account and then clicking the Assets tab, then the Add Setting button.
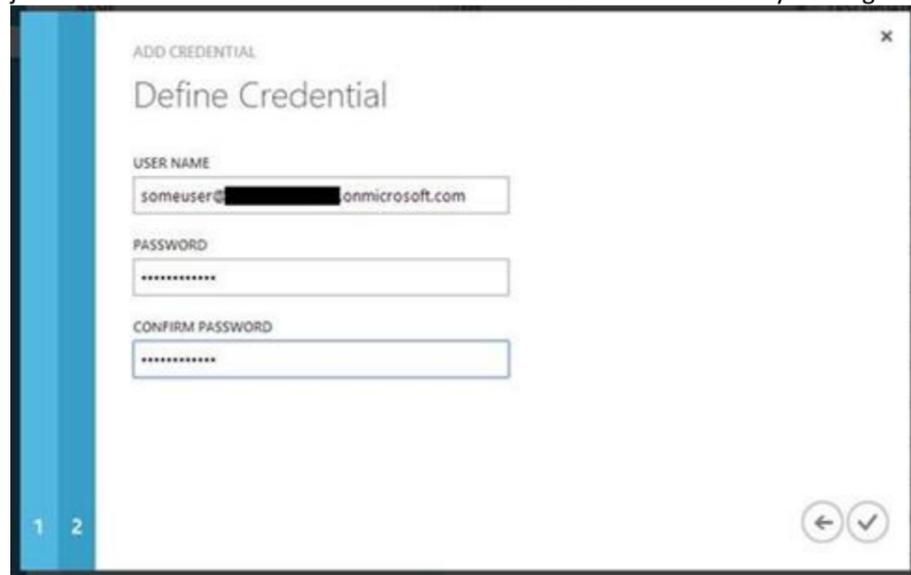
Note: Once you have set up the Azure Active Directory credential in Azure and Azure Automation, you can now manage Azure from Azure Automation runbooks using this credential.
Reference:
https://azure.microsoft.com/sv-se/blog/azure-automation-authenticating-to-azure-using-azure-active-directory/

QUESTION 22
You use a Get repository in Azure Repos to manage the source code of a web application. Developers commit changes directly to the default branch.
You need to implement a change management procedure that meets the following requirements:
The default branch must be protected, and new changes must be built in the feature branches first.
Changes must be reviewed and approved by at least one release manager before each merge.
Changes must be brought into the default branch by using pull requests.
What should you configure in Azure Repos?

A. branch policies of the default branch

B. Services in Project Settings

C. Deployment pools in Project Settings

D. branch security of the default branch

Correct Answer: A
Section:
Explanation:
Branch policies help teams protect their important branches of development. Policies enforce your team's code quality and change management standards.
Reference:
https://docs.microsoft.com/en-us/azure/devops/repos/git/branch-policies

QUESTION 23
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. Your company uses Azure DevOps to manage the build and release processes for applications.
You use a Get repository for applications source control.
You need to implement a pull request strategy that reduces the history volume in the master branch. Solution: You implement a pull request strategy that uses fast-forward merges.

Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:
Explanation:
No fast-forward merge - This option merges the commit history of the source branch when the pull request closes and creates a merge commit in the target branch.
Reference:
https://docs.microsoft.com/en-us/azure/devops/repos/git/branch-policies

QUESTION 24
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. Your company uses Azure DevOps to manage the build and release processes for applications.
You use a Get repository for applications source control.
You need to implement a pull request strategy that reduces the history volume in the master branch. Solution: You implement a pull request strategy that uses squash merges.
Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:
Instead use fast-forward merge.
Note:
Squash merge - Complete all pull requests with a squash merge, creating a single commit in the target branch with the changes from the source branch. No fast-forward merge - This option merges the commit history of the source branch when the pull request closes and creates a merge commit in the target branch.
Reference:
https://docs.microsoft.com/en-us/azure/devops/repos/git/branch-policies

QUESTION 25
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. Your company uses Azure DevOps to manage the build and release processes for applications.
You use a Get repository for applications source control.
You need to implement a pull request strategy that reduces the history volume in the master branch. Solution: You implement a pull request strategy that uses an explicit merge.
Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:

Instead use fast-forward merge.

Note:

No fast-forward merge - This option merges the commit history of the source branch when the pull request closes and creates a merge commit in the target branch.

Reference:

https://docs.microsoft.com/en-us/azure/devops/repos/git/branch-policies

QUESTION 26

Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

Your company uses Azure DevOps to manage the build and release processes for applications.

You use a Get repository for applications source control.

You need to implement a pull request strategy that reduces the history volume in the master branch.

Solution: You implement a pull request strategy that uses a three-way merge.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:

Instead use fast-forward merge.

Note:

No fast-forward merge - This option merges the commit history of the source branch when the pull request closes and creates a merge commit in the target branch.

Reference:

https://docs.microsoft.com/en-us/azure/devops/repos/git/branch-policies

QUESTION 27

You need to recommend a Docker container build strategy that meets the following requirements:

Minimizes image sizes

Minimizes the security surface area of the final image

What should you include in the recommendation?

A. multi-stage builds

B. PowerShell Desired State Configuration (DSC)

C. Docker Swarm

D. single-stage builds

Correct Answer: A
Section:
Explanation:

Multi-stage builds are a new feature requiring Docker 17.05 or higher on the daemon and client. Multistage builds are useful to anyone who has struggled to optimize Dockerfiles while keeping them easy to read and maintain. Incorrect Answers:

C: A swarm consists of multiple Docker hosts which run in swarm mode and act as managers (to manage membership and delegation) and workers (which run swarm services).

Reference:

https://docs.docker.com/develop/develop-images/multistage-build/

QUESTION 28

You plan to create an image that will contain a .NET Core application.
You have a Dockerfile file that contains the following code. (Line numbers are included for reference only.)

```
01 FROM microsoft/dotnet: 3.1-sdk
02 COPY . /
03 RUN dotnet publish -c Release -o out
04 FROM microsoft/dotnet: 3.1-sdk
05 COPY --from=0 /out /
06 WORKDIR /
07 ENTRYPOINT ["dotnet", "app1.dll"]
```

You need to ensure that the image is as small as possible when the image is built.
Which line should you modify in the file?

A. 1
B. 3
C. 4
D. 7

Correct Answer: C
Section:
Explanation:

QUESTION 29
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. Your company has a project in Azure DevOps for a new web application.
You need to ensure that when code is checked in, a build runs automatically.
Solution: From the Triggers tab of the build pipeline, you select Batch changes while a build is in progress. Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section:
Explanation:
Instead, In Visual Designer you enable continuous integration (CI) by:
1. Select the Triggers tab.
2. Enable Continuous integration.
Note: Batch changes
Select this check box if you have many team members uploading changes often and you want to reduce the number of builds you are running. If you select this option, when a build is running, the system waits until the build is completed and then queues another build of all changes that have not yet been built.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/get-started-designer

QUESTION 30
You have 50 Node.js-based projects that you scan by using WhiteSource. Each project includes Package.json, Package-lock.json, and Npm-shrinkwrap.json files. You need to minimize the number of libraries reports by WhiteSource to only the libraries that you explicitly reference. What should you do?

A. Configure the File System Agent plug-in.

B. Add a devDependencies section to Package-lock.json.

C. Configure the Artifactory plug-in.

D. Delete Package-lock.json.

Correct Answer: B
Section:
Explanation:
Separate Your Dependencies
Within your package.json file be sure you split out your npm dependencies between devDependencies and (production) dependencies. The key part is that you must then make use of the --production flag when installing the npm packages. The --production flag will exclude all packages defined in the devDependencies section.
Reference: https://blogs.msdn.microsoft.com/visualstudioalmrangers/2017/06/08/manage-your-open-source-usage-and-security-as-reported-by-your-cicd-pipeline/

QUESTION 31
Your company deploys applications in Docker containers.
You want to detect known exploits in the Docker images used to provision the Docker containers.
You need to integrate image scanning into the application lifecycle. The solution must expose the exploits as early as possible during the application lifecycle. What should you configure?

A. a task executed in the continuous integration pipeline and a scheduled task that analyzes the image registry

B. manual tasks performed during the planning phase and the deployment phase

C. a task executed in the continuous deployment pipeline and a scheduled task against a running production container

D. a task executed in the continuous integration pipeline and a scheduled task that analyzes the production container

Correct Answer: A
Section:
Explanation:
You can use the Docker task to sign into ACR and then use a subsequent script to pull an image and scan the container image for vulnerabilities. Use the docker task in a build or release pipeline. This task can be used with Docker or Azure Container registry.
Incorrect Answers:
C: We should not wait until deployment. We want to detect the exploits as early as possible.
D: We should wait until the image is in the product container. We want to detect the exploits as early as possible.
Reference: https://docs.microsoft.com/en-us/azure/devops/articles/security-validation-cicd-pipeline?view=vsts

QUESTION 32
Your company has a hybrid cloud between Azure and Azure Stack.
The company uses Azure DevOps for its full CI/CD pipelines. Some applications are built by using Erlang and Hack. You need to ensure that Erlang and Hack are supported as part of the build strategy across the hybrid cloud.
The solution must minimize management overhead. What should you use to execute the build pipeline?

A. a Microsoft-hosted agent

B. Azure DevOps self-hosted agents on Azure DevTest Labs virtual machines.

C. Azure DevOps self-hosted agents on Hyper-V virtual machines

D. Azure DevOps self-hosted agents on virtual machines that run on Azure Stack

Correct Answer: D
Section:
Explanation:
Azure Stack offers virtual machines (VMs) as one type of an on-demand, scalable computing resource. You can choose a VM when you need more control over the computing environment.
Reference: https://docs.microsoft.com/en-us/azure/azure-stack/user/azure-stack-compute-overview

QUESTION 33
SIMULATION
You plan to store signed images in an Azure Container Registry instance named az4009940427acr1.
You need to modify the SKU for az4009940427acr1 to support the planned images. The solution must minimize costs.
To complete this task, sign in to the Microsoft Azure portal.

A. See solution below.

Correct Answer: A
Section:
Explanation:
1. Open Microsoft Azure Portal, and select the Azure Container Registry instance named az4009940427acr1.
2. Under Policies, select Content Trust > Enabled > Save.

Reference:
https://docs.microsoft.com/en-us/azure/container-registry/container-registry-content-trust
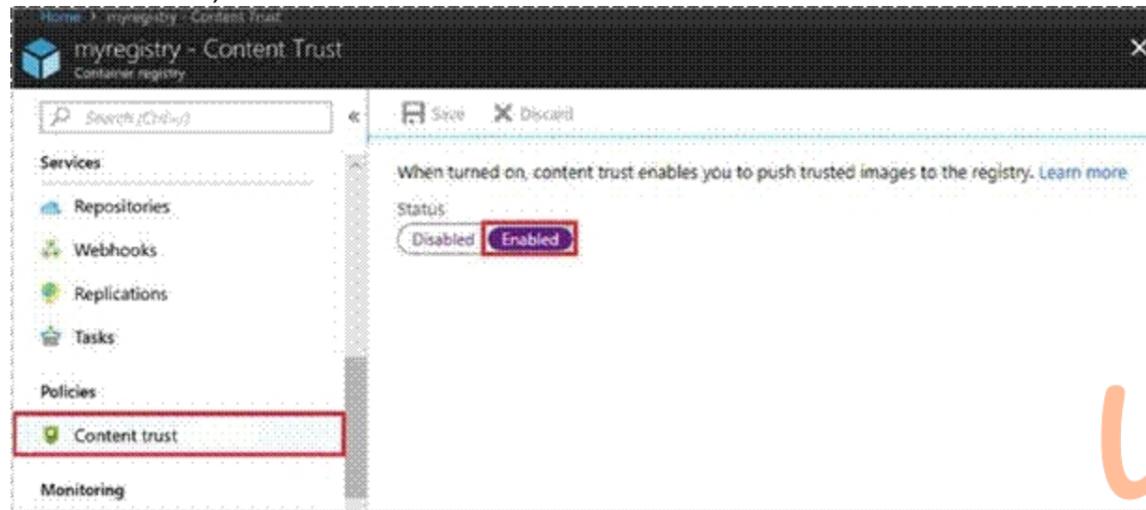
QUESTION 34
HOTSPOT
Your company uses Team Foundation Server 2013 (TFS 2013).
You plan to migrate to Azure DevOps.
You need to recommend a migration strategy that meets the following requirements:
Preserves the dates of Team Foundation Version Control changesets
Preserves the changes dates of work items revisions
Minimizes migration effort
Migrates all TFS artifacts
What should you recommend? To answer, select the appropriate options in the answer area.
NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

On the TFS server:

| Install the TFS Java SDK. |
| Upgrade TFS to the most recent RTW release. |
| Upgrade to the most recent version of PowerShell Core. |

To perform the migration:

| Copy the assets manually. |
| Use public API-based tools. |
| Use the TFS Database Import Service. |
| Use the TFS Integration Platform. |

Answer Area:

Answer Area

On the TFS server:

| Install the TFS Java SDK. |
| **Upgrade TFS to the most recent RTW release.** |
| Upgrade to the most recent version of PowerShell Core. |

To perform the migration:

| Copy the assets manually. |
| Use public API-based tools. |
| **Use the TFS Database Import Service.** |
| Use the TFS Integration Platform. |

Section:

Explanation:

Box 1: Upgrade TFS to the most recent RTM release.

One of the major prerequisites for migrating your Team Foundation Server database is to get your database schema version as close as possible to what is currently deployed in Azure Devops Services.

Box 2: Use the TFS Database Import Service

In Phase 3 of your migration project, you will work on upgrading your Team Foundation Server to one of the supported versions for the Database Import Service in Azure Devops Services.

QUESTION 35

DRAG DROP

You are configuring Azure Pipelines for three projects in Azure DevOps as shown in the following table.

Project name	Project Details
Project1	The project team provides preconfigured YAML files that it wants to use to manage future pipeline configuration changes.
Project2	The sensitivity of the project requires that the source code be hosted on the managed Windows server on your company's network.
Project3	The project team requires a centralized version control system to ensure that developers work with the most recent version.

Which version control system should you recommend for each project? To answer, drag the appropriate version control systems to the correct projects. Each version control system may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.
NOTE: Each correct selection is worth one point.

Select and Place:

Version Control Systems

Assembla Subversion

Bitbucket Cloud

Git in Azure Repos

GitHub Enterprise

Answer Area

Project1:

Project2:

Project3:

Correct Answer:

Version Control Systems

Bitbucket Cloud

Answer Area

Project1: Git in Azure Repos

Project2: GitHub Enterprise

Project3: Assembla Subversion

Section:
Explanation:

QUESTION 36
DRAG DROP
Your company has four projects. The version control requirements for each project are shown in the following table.

Project	Requirement
Project 1	Project leads must be able to restrict access to individual files and folders in the repository.
Project 2	The version control system must enforce the following rules before merging any changes to the main branch: • Changes must be reviewed by at least two project members. • Changes must be associated to at least one work team.
Project 3	The project members must be able to work in Azure Repos directly from Xcode.
Project 4	The release branch must only be viewable or editable by the project leads.

You plan to use Azure Repos for all the projects.
Which version control system should you use for each project? To answer, drag the appropriate version control systems to the correct projects. Each version control system may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.
NOTE: Each correct selection is worth one point.

Select and Place:

Version Control Systems

| Git |
| Perforce |
| Subversion |
| Team Foundation Version Control |

Answer Area

Project 1: [ ]
Project 2: [ ]
Project 3: [ ]
Project 4: [ ]

Correct Answer:

Version Control Systems

| Git |
| Perforce |
| Subversion |
| Team Foundation Version Control |

Answer Area

Project 1: Team Foundation Version Control
Project 2: Git
Project 3: Subversion
Project 4: Git

Section:
Explanation:
Box 1: Team Foundation Version Control
TFVC lets you apply granular permissions and restrict access down to a file level.
Box 2: Git
get is the default version control provider for new projects. You should use get for version control in your projects unless you have a specific need for centralized version control features in TFVC.

Box 3: Subversion

Note: Xcode is an integrated development environment (IDE) for macOS containing a suite of software development tools developed by Apple

Box 4: Git

Note: Perforce: Due to its multitenant nature, many groups can work on versioned files. The server tracks changes in a central database of MD5 hashes of file content, along with descriptive meta data and separately retains a master repository of file versions that can be verified through the hashes.

References:

https://searchitoperations.techtarget.com/definition/Perforce-Software
https://docs.microsoft.com/en-us/azure/devops/repos/git/share-your-code-in-git-xcode
https://docs.microsoft.com/en-us/azure/devops/repos/tfvc/overview

QUESTION 37
HOTSPOT

You company uses Azure DevOps to deploy infrastructures to Azure.

Pipelines are developed by using YAML.

You execute a pipeline and receive the results in the web portal for Azure Pipelines as shown in the following exhibit.

Use the drop-down menus to select the answer choice that completes each statement based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

The pipeline contains ▼

one stage
two stages
three stages
four stages
five stages

Build_vm contains ▼

one job
two jobs
three jobs
four jobs
five jobs

Answer Area:

Answer Area

The pipeline contains ▼

one stage
two stages
three stages
four stages
five stages

Build_vm contains ▼

one job
two jobs
three jobs
four jobs
five jobs

Section:
Explanation:
Reference:
https://dev.to/rajikaimal/azure-devops-ci-cd-yaml-pipeline-4glj

QUESTION 38

DRAG DROP
You are configuring Azure DevOps build pipelines.
You plan to use hosted build agents.
Which build agent pool should you use to compile each application type? To answer, drag the appropriate build agent pools to the correct application types. Each build agent pool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.
NOTE: Each correct selection is worth one point.

Select and Place:

Build Agent Pools

Hosted Windows Container

Hosted Ubuntu 1604

Hosted macOS

Hosted

Default

Answer Area

An application that runs on iOS: [ ]

An Internet Information Services (IIS) web application that runs in Docker: [ ]

Correct Answer:

Build Agent Pools

Hosted Windows Container

Hosted Ubuntu 1604

[ ]

[ ]

Default

Answer Area

An application that runs on iOS: | Hosted macOS |

An Internet Information Services (IIS) web application that runs in Docker: | Hosted |

Section:
Explanation:
- Hosted macOS
- Hosted Windows container
https://devblogs.microsoft.com/devops/removing-older-images-in-azure-pipelines-hosted-pools/
https://docs.microsoft.com/en-us/azure/devops/release-notes/2019/sprint-154-update#single-hosted-pool https://docs.microsoft.com/en-us/azure/devops/pipelines/agents/pools-queues?view=azure-devops&tabs=yaml%2Cbrowser

QUESTION 39
HOTSPOT
You are designing YAML-based Azure pipelines for the apps shown in the following table.

Name	Platform	Release requirements
App1	Azure virtual machine	Replace a fixed set of existing instances of the previous version of App1 with instances of the new version of the app in each iteration.
App2	Azure Kubernetes Service (AKS) cluster	Roll out a limited deployment of the new version of App2 to validate the functionality of the app. Once testing is successful, expand the rollout.

You need to configure the YAML strategy value for each app. The solution must minimize app downtime.

Which value should you configure for each app? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

App1:

- canary
- rolling
- runonce

App2:

- canary
- rolling
- runonce

Answer Area:

Answer Area

App1: [dropdown]
- canary
- **rolling**
- runonce

App2: [dropdown]
- **canary**
- rolling
- runonce

Section:
Explanation:
App1: rolling
A rolling deployment replaces instances of the previous version of an application with instances of the new version of the application on a fixed set of virtual machines (rolling set) in each iteration.
App2: canary
Canary deployment strategy is an advanced deployment strategy that helps mitigate the risk involved in rolling out new versions of applications. By using this strategy, you can roll out the changes to a small subset of servers first. As you gain more confidence in the new version, you can release it to more servers in your infrastructure and route more traffic to it. Incorrect Answers:
runonce:
runOnce is the simplest deployment strategy wherein all the lifecycle hooks, namely preDeploy deploy, routeTraffic, and postRouteTraffic, are executed once. Then, either on: success or on: failure is executed.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/process/deployment-jobs

QUESTION 40
DRAG DROP
Your company has two virtual machines that run Linux in a third-party public cloud.
You plan to use the company's Azure Automation State Configuration implementation to manage the two virtual machines and detect configuration drift.
You need to onboard the Linux virtual machines.
You install PowerShell Desired State Configuration (DSC) on the virtual machines, and then run register.py.
Which three actions should you perform next in sequence? To answer, move the actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Actions

Create a DSC metaconfiguration
Copy the metaconfiguration to the virtual machines
Add the virtual machines as DSC nodes in Azure Automation
Install Windows Management Framework 5.1 on the virtual machines
From the virtual machines, run `setdsclocalconfigurationmanager.py`

Answer Area

Correct Answer:

Actions

Install Windows Management Framework 5.1 on the virtual machines
From the virtual machines, run `setdsclocalconfigurationmanager.py`

Answer Area

Create a DSC metaconfiguration
Copy the metaconfiguration to the virtual machines
Add the virtual machines as DSC nodes in Azure Automation

Section:

Explanation:

Step 1: Create a DSC metaconfiguration

Load up the DSC Configuration into Azure Automation.

Step 2: Copy the metaconfiguration to the virtual machines.

Linking the Node Configuration to the Linux Host

Step 3: Add the virtual machines as DSC nodes in Azure Automation.

go to DSC Nodes, select your node, and then click Assign node configuration. This step assigns the DSC configuration to the Linux machine.

Next up will be to link the node configuration to the host. Go to the host and press the "Assign node…"-button. Next up you can select your node configuration.

QUESTION 41

Your company has an Azure DevOps project,

The source code for the project is stored in an on-premises repository and uses on an on-premises build server. You plan to use Azure DevOps to control the build process on the build server by using a self-hosted agent. You need to implement the self-hosted agent.

You download and install the agent on the build server.

Which two actions should you perform next? Each correct answer presents part of the solution.

A. From Azure, create a shared access signature (SAS).

B. From the build server, create a certificate, and then upload the certificate to Azure Storage.

C. From the build server, create a certificate, and then upload the certificate to Azure Key Vault.

D. From DevOps, create a personal access token (PAT).

E. From the build server, run config.cmd.

Correct Answer: B, E
Section:
Explanation:
B: Make sure you install your self-signed ssl server certificate into the OS certificate store.
E: When you have a self-signed SSL certificate for your on-premises TFS server, make sure to configure the Get we shipped to allow that self-signed SSL certificate. Enable Get to use SChannel during configure with 2.129.0 or higher version agent Pass --gituseschannel during agent configuration ./config.cmd --gituseschannel
Reference: https://docs.microsoft.com/en-us/azure/devops/pipelines/agents/certificate

QUESTION 42

Explanation:
Create an Azure Resource Manager service connection with an existing service principal
AB: Enter the information about your service principal into the Azure subscription dialog textboxes:
Tenant ID
Subscription ID
Subscription name
Service principal ID
Either the service principal client key or, if you have selected Certificate, enter the contents of both the certificate and private key sections of the *.pem file.
D: To deploy to a specific Azure resource, the task will need additional data about that resource.
If you're using the classic editor, select data you need. For example, the App service name.
If you're using YAML, then go to the resource in the Azure portal, and then copy the data into your code. For example, to deploy a web app, you would copy the name of the App Service into the WebAppName value.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/library/connect-to-azure

A. the tenant ID

B. the subscription ID

C. the client secret

D. the app ID

E.

Correct Answer: A, B, D
Section:
Explanation:
Create an Azure Resource Manager service connection with an existing service principal
AB: Enter the information about your service principal into the Azure subscription dialog textboxes:
Tenant ID

Subscription ID
Subscription name
Service principal ID
Either the service principal client key or, if you have selected Certificate, enter the contents of both the certificate and private key sections of the *.pem file.
D: To deploy to a specific Azure resource, the task will need additional data about that resource.
If you're using the classic editor, select data you need. For example, the App service name.
If you're using YAML, then go to the resource in the Azure portal, and then copy the data into your code. For example, to deploy a web app, you would copy the name of the App Service into the WebAppName value.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/library/connect-to-azure
A. the tenant ID
B. the subscription ID
C. the client secret
D. the app ID
E. the object ID
Answer: ABD
Explanation:
Create an Azure Resource Manager service connection with an existing service principal
AB: Enter the information about your service principal into the Azure subscription dialog textboxes:
Tenant ID
Subscription ID
Subscription name
Service principal ID
Either the service principal client key or, if you have selected Certificate, enter the contents of both the certificate and private key sections of the *.pem file. D: To deploy to a specific Azure resource, the task will need additional data about that resource.
If you're using the classic editor, select data you need. For example, the App service name.
If you're using YAML, then go to the resource in the Azure portal, and then copy the data into your code. For example, to deploy a web app, you would copy the name of the App Service into the WebAppName value.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/library/connect-to-azure

QUESTION 43
You need to execute inline testing of an Azure DevOps pipeline that uses a Docker deployment model. The solution must prevent the results from being published to the pipeline. What should you use for the inline testing?

A. a single stage Dockerfile

B. an Azure Kubernetes Service (AKS) pod

C. a multi-stage Dockerfile

D. a Docker Compose file

Correct Answer: D
Section:
Explanation:
Use Docker when running integration tests with Azure Pipelines.
Reference: https://crossprogramming.com/2019/12/27/use-docker-when-running-integration-tests-with-azure-pipelines.html

QUESTION 44
You are designing an Azure DevOps strategy for your company's development team.
You suspect that the team's productivity is low due to accumulate technical debt.
You need to recommend a metric to assess the amount of the team's technical debt.
What should you recommend?

A. the number of code modules in an application

B. the number of unit test failures

C. the percentage of unit test failures

D. the percentage of overall time spent on rework

Correct Answer: D
Section:
Explanation:
Technical Debt is the estimated cost to fix code elements issues.
Technical Debt Ratio: Ratio between the cost to develop the software and the cost to fix it. The Technical Debt Ratio formula is:
Remediation cost / Development cost
Which can be restated as:
Remediation cost / (Cost to develop 1 line of code * Number of lines of code)
Reference: http://www.azure365.co.in/devops/3PDevOps-4

QUESTION 45
You are developing an open source solution that uses a GitHub repository.
You create a new public project in Azure DevOps.
You plan to use Azure Pipelines for continuous build. The solution will use the GitHub Checks API.
Which authentication type should you use?

A. OpenID

B. GitHub App

C. a personal access token (PAT)

D. SAML

Correct Answer: B
Section:
Explanation:
Write permission for the Checks API is only available to GitHub Apps.
Note: Authenticating as a GitHub App lets you do a couple of things:
You can retrieve high-level management information about your GitHub App.
You can request access tokens for an installation of the app.
Reference:
https://docs.github.com/en/rest/guides/getting-started-with-the-checks-api

QUESTION 46
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
Your company has a project in Azure DevOps for a new web application.
You need to ensure that when code is checked in, a build runs automatically.
Solution: From the Continuous deployment trigger settings of the release pipeline, you enable the Pull request trigger setting.
Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:

In Visual Designer you enable continuous integration (CI) by:

1. Select the Triggers tab.

2. Enable Continuous integration.

Reference:

https://docs.microsoft.com/en-us/azure/devops/pipelines/get-started-designer

QUESTION 47

Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. Your company has a project in Azure DevOps for a new web application. You need to ensure that when code is checked in, a build runs automatically.

Solution: From the Pre-deployment conditions settings of the release pipeline, you select After stage. Does this meet the goal?

A. Yes

B. No

Correct Answer: B

Section:

Explanation:

Instead, In Visual Designer you enable continuous integration (CI) by:

1. Select the Triggers tab.

2. Enable Continuous integration.

Reference:

https://docs.microsoft.com/en-us/azure/devops/pipelines/get-started-designer

QUESTION 48

Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. Your company has a project in Azure DevOps for a new web application. You need to ensure that when code is checked in, a build runs automatically.

Solution: From the Pre-deployment conditions settings of the release pipeline, you select Batch changes while a build is in progress. Does this meet the goal?

A. Yes

B. No

Correct Answer: B

Section:

Explanation:

Instead, In Visual Designer you enable continuous integration (CI) by:

1. Select the Triggers tab.

2. Enable Continuous integration.

Reference:

https://docs.microsoft.com/en-us/azure/devops/pipelines/get-started-designer

QUESTION 49

You are creating a build pipeline in Azure Pipelines.

You define several tests that might fail due to third-party applications.

You need to ensure that the build pipeline completes successfully if the third-party applications are unavailable. What should you do?

A. Configure the build pipeline to use parallel jobs

B. Configure flaky tests

C. Increase the test pass percentage

D. Add the Requirements quality widget to your dashboard

Correct Answer: D
Section:
Explanation:
Requirements traceability is the ability to relate and document two or more phases of a development process, which can then be traced both forward or backward from its origin. Requirements traceability help teams to get insights into indicators such as quality of requirements or readiness to ship the requirement. A fundamental aspect of requirements traceability is association of the requirements to test cases, bugs and code changes.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/test/requirements-traceability

QUESTION 50
Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. Your company has a project in Azure DevOps for a new web application.
You need to ensure that when code is checked in, a build runs automatically.
Solution: From the Triggers tab of the build pipeline, you select Enable continuous integration.
Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:
Explanation:
In Visual Designer you enable continuous integration (CI) by:
1. Select the Triggers tab.
2. Enable Continuous integration.
A continuous integration trigger on a build pipeline indicates that the system should automatically queue a new build whenever a code change is committed.
Reference:
https://docs.microsoft.com/en-us/azure/devops/pipelines/get-started-designer

QUESTION 51
You have an Azure DevOps organization named Contoso and an Azure DevOps project named Project1.
You plan to use Microsoft-hosted agents to build container images that will host full Microsoft .NET Framework apps in a YAML pipeline in Project1. What are two possible virtual machine images that you can use for the Microsoft-hosted agent pool? Each correct answer presents a complete solution. NOTE: Each correct selection is worth one point.

A. vs2017-win2016

B. ubuntu-16.04

C. win1803

D. macOS-10.13

E. vs.2015-win2012r2

Correct Answer: B, C
Section:
Explanation:

The Microsoft-hosted agent pool provides 7 virtual machine images to choose from:

Ubuntu 16.04 (ubuntu-16.04)

Windows Server 1803 (win1803) - for running Windows containers

Visual Studio 2019 Preview on Windows Server 2019 (windows-2019)

Visual Studio 2017 on Windows Server 2016 (vs2017-win2016)

Visual Studio 2015 on Windows Server 2012R2 (vs2015-win2012r2)

macOS X Mojave 10.14 (macOS-10.14)

macOS X High Sierra 10.13 (macOS-10.13)

Reference:

https://docs.microsoft.com/en-us/azure/devops/pipelines/agents/hosted?view=azure-devops

QUESTION 52

Note: This question-is part of a series of questions that present the same scenario. Each question-in the series contains a unique solution that might meet the stated goals. Some question-sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question-in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen. You use Azure Pipelines to build and test a React.js application.

You have a pipeline that has a single job.

You discover that installing JavaScript packages from npm takes approximately five minutes each time you run the pipeline. You need to recommend a solution to reduce the pipeline execution time.

Solution: You recommend enabling parallel jobs for the pipeline.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:

Instead enable pipeline caching.

Note: npm-cache is a command line utility that caches dependencies installed via npm, bower, jspm and composer. It is useful for build processes that run [npm|bower|composer|jspm] install every time as part of their build process. Since dependencies don't change often, this often means slower build times. npm-cache helps alleviate this problem by caching previously installed dependencies on the build machine.

Reference: https://www.npmjs.com/package/npm-cache

QUESTION 53

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You plan to create a release pipeline that will deploy Azure resources by using Azure Resource Manager templates. The release pipeline will create the following resources:

Two resource groups

Four Azure virtual machines in one resource group

Two Azure SQL databases in other resource group

You need to recommend a solution to deploy the resources.

Solution: Create two standalone templates, each of which will deploy the resources in its respective group.

Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:

Use a main template and two linked templates.
Reference:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-linked-templates

QUESTION 54
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You plan to create a release pipeline that will deploy Azure resources by using Azure Resource Manager templates. The release pipeline will create the following resources:
Two resource groups
Four Azure virtual machines in one resource group
Two Azure SQL databases in other resource group
You need to recommend a solution to deploy the resources.
Solution: Create a single standalone template that will deploy all the resources.
Does this meet the goal?

A. Yes

B. No

Correct Answer: B
Section:
Explanation:
Use two templates, one for each resource group, and link the templates.
Reference:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-linked-templates

QUESTION 55
You have a project in Azure DevOps named Project1. Project1 contains a build pipeline named Pipe1 that builds an application named App1. You have an agent pool named Pool1 that contains a Windows Server 2019-based self-hosted agent. Pipe1 uses Pool1. You plan to implement another project named Project2. Project2 will have a build pipeline named Pipe2 that builds an application named App2. App1 and App2 have conflicting dependencies.
You need to minimize the possibility that the two build pipelines will conflict with each other. The solution must minimize infrastructure costs. What should you do?

A. Add another self-hosted agent.

B. Add a Docker Compose task to the build pipelines.

C. Change the self-hosted agent to use Red Hat Enterprise Linux (RHEL) 8.

D. Create two container jobs.

Correct Answer: D
Section:
Explanation:
To get more control over software dependencies and operating system, you can use Container jobs. Note that the decisions whether to run your pipeline inside a container and whether to use a self-hosted agent are independent. You can directly run your pipeline on a self-hosted agent, or inside a container. You can also execute your pipeline in a container on a Microsoft-hosted agent or on a self-hosted agent. Incorrect Answers:
A: For additional control over hardware, you can use a self-hosted build agent.
Reference:
http://thewindowsupdate.com/2019/09/09/resolving-complex-software-and-hardware-dependencies-in-azure-devops-pipelines/

02 - Define and implement continuous integration
Case Study
This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage

your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other questions in this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study

To display the first question in this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.

Overview

Contoso, Ltd. is a manufacturing company that has a main office in Chicago.

Existing Environment

Contoso plans to improve its IT development and operations processes by implementing Azure DevOps principles. Contoso has an Azure subscription and creates an Azure DevOps organization.

The Azure DevOps organization includes:

The Docker extension

A deployment pool named Pool7 that contains 10 Azure virtual machines that run Windows Server 2019

The Azure subscription contains an Azure Automation account.

Requirements

Planned changes

Contoso plans to create projects in Azure DevOps as shown in the following table.

Project name	Project details
Project 1	Project1 will provide support for incremental builds and third-party SDK components
Project 2	Project2 will use an automatic build policy. A small team of developers named Team2 will work independently on changes to the project. The Team2 members will not have permissions to Project2.
Project 3	Project3 will be integrated with SonarQube
Project 4	Project4 will provide support for a build pipeline that creates a Docker image and pushes the image to the Azure Container Registry. Project4 will use an existing Dockerfile.
Project 5	Project5 will contain a Git repository in Azure Repos and a continuous integration trigger that will initiate a build in response to any change except for changes within /folder1 of the repository.
Project 6	Project6 will provide support for build and deployment pipelines. Deployment will be allowed only if the number of current work items representing active software bugs is 0.
Project 7	Project7 will contain a target deployment group named Group7 that maps to Pool7. Project7 will use Azure Automation State Configuration to maintain the desired state of the computers in Group7.

Technical requirements

Contoso identifies the following technical requirements:

Implement build agents for Project1.

Whenever possible, use Azure resources.

Avoid using deprecated technologies.

Implement a code flow strategy for Project2 that will:

- Enable Team2 to submit pull requests for Project2.

- Enable Team2 to work independently on changes to a copy of Project2.

- Ensure that any intermediary changes performed by Team2 on a copy of Project2 will be subject to the same restrictions as the ones defined in the build policy of Project2. Whenever possible, implement automation and minimize administrative effort.

Implement Project3, Project5, Project6, and Project7 based on the planned changes.

Implement Project4 and configure the project to push Docker images to Azure Container Registry.

QUESTION 1
In Azure DevOps, you create Project3.
You need to meet the requirements of the project.
What should you do first?

A. From Azure DevOps, modify the build definition.

B. From SonarQube, obtain an authentication token.

C. From Azure DevOps, create a service endpoint.

D. From SonarQube, create a project.

Correct Answer: C
Section:
Explanation:
The first thing to do is to declare your SonarQube server as a service endpoint in your VSTS/DevOps project settings.
Reference: https://docs.sonarqube.org/display/SCAN/Analyzing+with+SonarQube+Extension+for+vsts-TFS

QUESTION 2
You need to implement Project4.
What should you do first?

A. Add the FROM instruction in the Dockerfile file.

B. Add a Copy and Publish Build Artifacts task to the build pipeline.

C. Add a Docker task to the build pipeline.

D. Add the MAINTAINER instruction in the Dockerfile file.

Correct Answer: C
Section:
Explanation:
Scenario: Implement Project4 and configure the project to push Docker images to Azure Container Registry.

Project 4	Project4 will provide support for a build pipeline that creates a Docker image and pushes the image to the Azure Container Registry. Project4 will use an existing Dockerfile.

You use Azure Container Registry Tasks commands to quickly build, push, and run a Docker container image natively within Azure, showing how to offload your "inner-loop" development cycle to the cloud. ACR Tasks is a suite of features within Azure Container Registry to help you manage and modify container images across the container lifecycle.
Reference:
https://docs.microsoft.com/en-us/azure/container-registry/container-registry-quickstart-task-cli

QUESTION 3
HOTSPOT
How should you configure the filters for the Project5 trigger? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point.
Hot Area:

Set a [▼] /folder1.
- branch filter to exclude
- branch filter to include
- path filter to exclude
- path filter to include

Set a [▼] /.
- branch filter to exclude
- branch filter to include
- path filter to exclude
- path filter to include

Hot Area:
Answer:

Answer Area

Set a [▼] /folder1.
- branch filter to exclude
- branch filter to include
- **path filter to exclude**
- path filter to include

Set a [▼] /.
- branch filter to exclude
- **branch filter to include**
- path filter to exclude
- path filter to include

Hot Area:

Answer Area

Set a [▼] /folder1.
- branch filter to exclude
- branch filter to include
- path filter to exclude
- path filter to include

Set a [▼] /.
- branch filter to exclude
- branch filter to include
- path filter to exclude
- path filter to include

Answer Area:

Answer Area

Set a [▼] /folder1.

| branch filter to exclude |
| branch filter to include |
| path filter to exclude |
| path filter to include |

Set a [▼] /.

| branch filter to exclude |
| branch filter to include |
| path filter to exclude |
| path filter to include |

Section:
Explanation:
https://docs.microsoft.com/en-us/azure/devops/pipelines/repos/azure-repos-git?view=azure-devops&tabs=classic#ci-triggers

QUESTION 4
DRAG DROP
You need to recommend a procedure to implement the build agent for Project1.
Which three actions should you recommend be performed in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Actions	Answer Area
Sign in to Azure DevOps by using an account that is assigned the Administrator service connection security role.	
Install the Azure Pipelines agent on on-premises virtual machine.	
Create a personal access token in the Azure DevOps organization of Contoso.	
Install and register the Azure Pipelines agent on an Azure virtual machine.	
Sign in to Azure DevOps by using an account that is assigned the agent pool administrator role.	

Correct Answer:

Actions

Install the Azure Pipelines agent on on-premises virtual machine.
Sign in to Azure DevOps by using an account that is assigned the agent pool administrator role.

Answer Area

Sign in to Azure DevOps by using an account that is assigned the Administrator service connection security role.
Create a personal access token in the Azure DevOps organization of Contoso.
Install and register the Azure Pipelines agent on an Azure virtual machine.

Section:

Explanation:

Scenario:

Project 1	Project1 will provide support for incremental builds and third-party SDK components

Step 1: Sign in to Azure Devops by using an account that is assigned the Administrator service connection security role.

Note: Under Agent Phase, click Deploy Service Fabric Application. Click Docker Settings and then click Configure Docker settings. In Registry Credentials Source, select Azure Resource Manager Service Connection. Then select your Azure subscription.

Step 2: Create a personal access token..

A personal access token or PAT is required so that a machine can join the pool created with the Agent Pools (read, manage) scope.

Step 3: Install and register the Azure Pipelines agent on an Azure virtual machine.

By running a Azure Pipeline agent in the cluster, we make it possible to test any service, regardless of type.

References:

https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-tutorial-deploy-container-app-with-cicd-vsts

https://mohitgoyal.co/2019/01/10/run-azure-devops-private-agents-in-kubernetes-clusters/

QUESTION 5

DRAG DROP

You need to implement Project6.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Actions

| Open the release pipeline editor. |
| Disable the `continuous integration` trigger. |
| Enable Gates. |
| Add a manual intervention task. |
| Open the **Triggers** tab. |
| Add Query Work Items. |

Answer Area

⊗ ⊗

Correct Answer:

Actions

| |
| Disable the `continuous integration` trigger. |
| |
| Add a manual intervention task. |
| Open the **Triggers** tab. |
| |

Answer Area

| Open the release pipeline editor. |
| Enable Gates. |
| Add Query Work Items. |

Section:
Explanation:
Scenario: Implement Project3, Project5, Project6, and Project7 based on the planned changes

Project 6	Project6 will provide support for build and deployment pipelines. Deployment will be allowed only if the number of current work items representing active software bugs is 0.

Step 1: Open the release pipeline editor.

In the Releases tab of Azure Pipelines, select your release pipeline and choose Edit to open the pipeline editor.

Step 2: Enable Gates.

Choose the pre-deployment conditions icon for the Production stage to open the conditions panel. Enable gates by using the switch control in the Gates section.

Step 3: Add Query Work items.

Choose + Add and select the Query Work Items gate.

Configure the gate by selecting an existing work item query.

Note: A case for release gate is:

Incident and issues management. Ensure the required status for work items, incidents, and issues. For example, ensure deployment occurs only if no priority zero bugs exist, and validation that there are no active incidents takes place after deployment.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/release/deploy-using-approvals?view=azure-devops#configure-gate

Exam L

QUESTION 1
DRAG DROP
You are implementing a new project in Azure DevOps.
You need to assess the performance of the protect. The solution must identity the following metrics:

• How long it takes to complete a work item
* The percentage of defects found in production
Which DevOps KPI should you review for each metric? To answer drag the appropriate KPIs to the correct metric. Each KPI may be used once, more than once, or not at all. You may need to drag the spirt bar between panes or scroll to view content.
NOTE Each correct selection is worth one point.

Select and Place:

KPIs	Answer Area
Application failure rates	How long it takes to complete a work item: [ ]
Bug report rates	The percentage of defects found in production: [ ]
Burndown trend	
Cycle time	
Defect escape rate	
Deployment speed	
Lead time	
Mean time to recover	

Correct Answer:

KPIs	Answer Area
Application failure rates	How long it takes to complete a work item: Cycle time
	The percentage of defects found in production: Bug report rates
Burndown trend	
Defect escape rate	
Deployment speed	
Lead time	
Mean time to recover	

Section:
Explanation:

QUESTION 2
DRAG DROP
You create a Git repository named Repo1 in Azure Repos.
You need to configure Repo1 to meet the following requirements:
• Work items must be linked to a pull request.
• Pull requests must have a minimum of two reviewers.
* Pull requests must complete a code review by using a thirty-party tool.
The solution must minimize administrative effort.
Which type of policy should you use for each requirement? To answer, drag the appropriate policy types to the correct requirements. Each policy type may be used once, more than once, or not at all.
You may need to drag the split bar between panes or scroll to view content.

Select and Place:

Correct Answer:

Section:
Explanation:

QUESTION 3
You have a project in Azure DevOps.
You need to push notifications about pull requests to a Microsoft Teams channel. The solution must minimize development effort.
What should you do?

A. Install the Azure Repos app for teams and configure a subscription to receive notifications in the channel.

B. Use Azure Automation to connect to the Azure DevOps REST API and send messages to Teams.

C. Install the Azure Pipelines app for Teams and configure a subscription to receive notifications in the channel.

D. Use an Azure function to connect to the Azure DevOps REST API and send messages to Teams.

Correct Answer: A
Section:

QUESTION 4
You have a GitHub repository that is integrated with Azure Boards Azure Boards has a work item that has the number 715.
You need to ensure that when you commit source code in GitHub, the work item is updated automatically. What should you include in the commit comments?

A. @714

B. =715

C. the URL of the work item

D. AB#715

Correct Answer: B
Section:

QUESTION 5
You manage source code control and versioning by using GitHub.
A large file it committed to a repository accidentally.
You need to reduce the size of the repository. The solution must remove the file from the repository.
What should you use?

A. bfg

B. 1fs

C. gvfs

D. init

Correct Answer: A
Section:

QUESTION 6
You manage code by using GitHub.
You need to ensure that repository owners are notified if a new vulnerable dependency or malware is found in their repository.
What should you do?

A. Configure branch protection rules for each repository.

B. Configure Dependabot alerts.

C. Configure CodeQL scanning actions.

D. Subscribe all the repository owners to the GitHub Advisory Database.

Correct Answer: B
Section:
Explanation:

QUESTION 7
You have multiple teams that work on multiple projects in Azure DevOps.
You need to plan and manage the consumers and producers for each project. The solution must provide an overview of all the projects.
What should you do?

A. Install the Dependency Tracker extension and create dependencies for each project.

B. Add a Parent or Child link to the feature or user story for the items of each project.

C. Add a Predecessor or Successor link to the feature or user story for the items of each project.

D. Create a custom query to show the consumers and producers and add a widget to a dashboard.

Correct Answer: D
Section:
Explanation:

QUESTION 8

You have a project in Azure DevOps named Project that contains a Kanban board named Board1.

You create a Microsoft Teams channel and add the Azure Boards app to the channel.

You need to ensure that users can create work items in Board1 from Microsoft Teams.

Which command should you run?

A. @azure boards sign in

B. @azure boards link

C. @azure boards create

D. @azure boards subscriptions

Correct Answer: D
Section:

QUESTION 9

DRAG DROP

You have a project in Azure DevOps.

You need to configure a dashboard. The solution must include the following metrics:

• Bottlenecks in the software development process

• A burndown chart for the work in a single iteration

• How long it takes to close a work item after the item was started

Which type of widget should you use for each metric? To answer, drag the appropriate widget types to the correct metrics. Each widget type may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Widgets		Answer Area	
Burndown chart		Bottlenecks in the software development process:	
Cumulative flow diagram (CFD)		How long it takes to close a work item after the item was started:	
Cycle time		A burndown chart for the work in a single iteration:	
Lead time			
Sprint burndown			
Velocity			

Correct Answer:

Widgets

Answer Area
Burndown chart		Bottlenecks in the software development process:	Cumulative flow diagram (CFD)
		How long it takes to close a work item after the item was started:	Cycle time
Lead time		A burndown chart for the work in a single iteration:	Sprint burndown
Velocity			

Section:
Explanation:

QUESTION 10
You have an Azure key vault named KV1 and three web servers.
You plan to deploy an app named App1 to the web server.
You need to ensure that App1 can retrieve a secret from KV1.
The solution must meet the following requirements:
• Minimize the number of permission grants required
• Follow the principle of least privilege.
What should you include in the solution?

A. role-based access control (RBAQ permissions

B. a system-assigned managed identity

C. a user-assigned managed identity

D. a service principal

Correct Answer: B
Section:

QUESTION 11
DRAG DROP
You use Semantic Versioning (Sem Ver) as a dependency versioning strategy.
You perform changes to code as shown in the following table.

Name	New functionality	Change incompatibility
Change1	Yes	Minor
Change2	Yes	Significant
Change3	No	Minor

Which part of the version should you increment for each change? To answer, drag the appropriate parts to the correct changes. Each part may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.
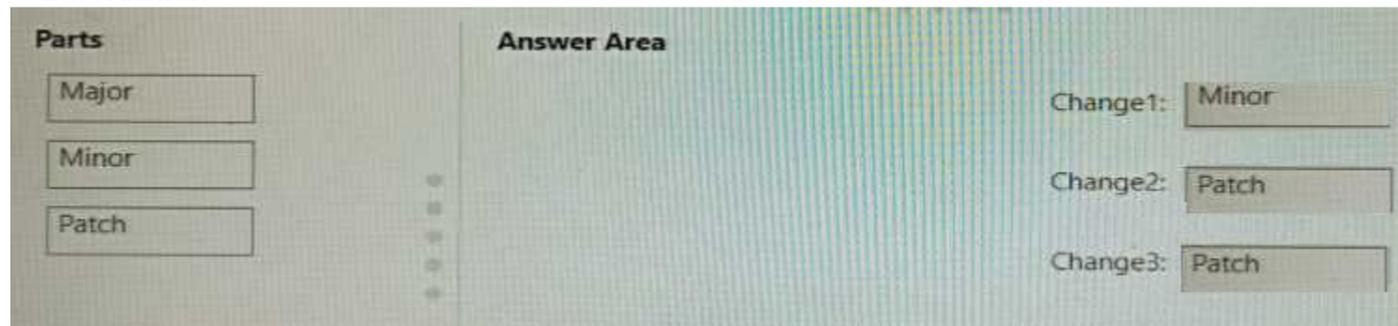NOTE: Each correct selection is worth one point.

Select and Place:
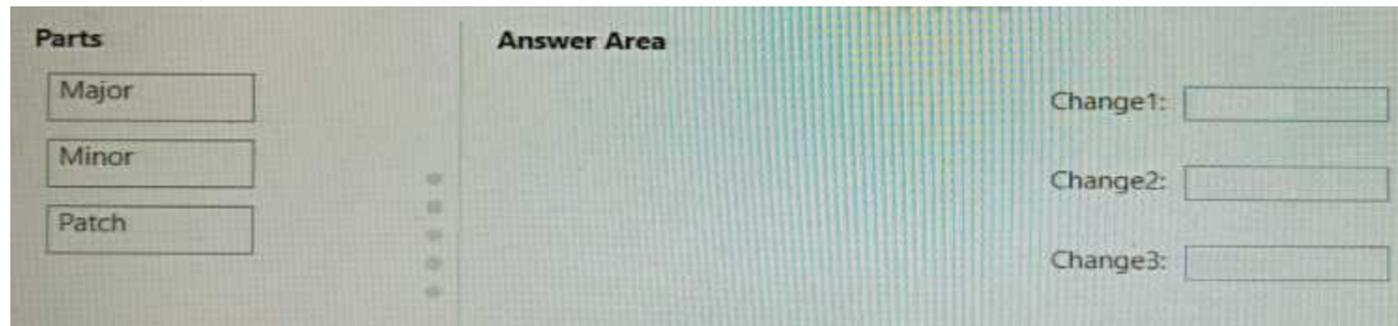
Correct Answer:

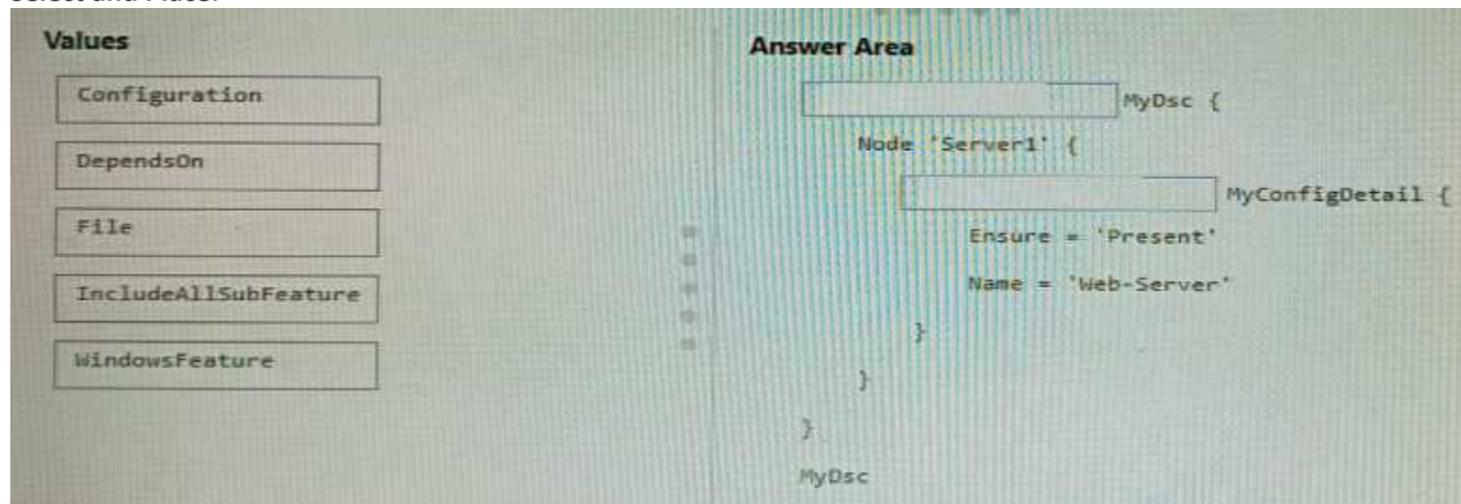

Section:
Explanation:

QUESTION 12
DRAG DROP
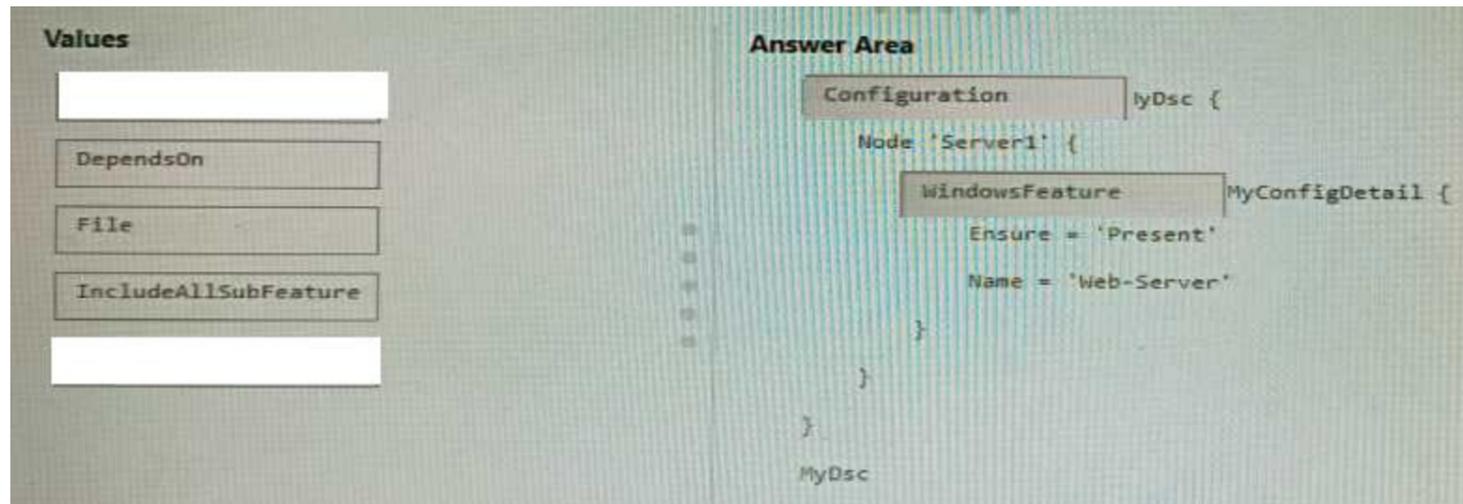You need to deploy Internet Information Services (IIS) to an Azure virtual machine that runs Windows Server 2022
How should you complete the Desired State Configuration (DSC) configuration script? To answer, drag the appropriate values to the correct locations. Each value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

Select and Place:

Correct Answer:

Values

- DependsOn
- File
- IncludeAllSubFeature

Answer Area

```
Configuration          lyDsc {
    Node 'Server1' {
        WindowsFeature          MyConfigDetail {
            Ensure = 'Present'
            Name = 'Web-Server'
        }
    }
}
MyDsc
```

Section:
Explanation:

QUESTION 13
You have an Azure subscription linked to a tenant in Microsoft Azure Active Directory (Azure AD), part of Entrap. The tenant is licensed for Azure AD Premium Plan 1.
A security review indicates that too many users have privileged access to resources.
You need to deploy a privileged access management solution that meets the following requirements:
* Enforces time limits on the use of privileged access
* Requires approval to activate privileged access
* Minimizes costs
What should you do first?

A. Configure alerts for the activation of privileged roles.
B. Enforce Azure Multi-Factor Authentication (MFA) for role activation.
C. Configure notifications when privileged roles are activated.
D. Upgrade the license of the Azure AD tenant.

Correct Answer: D
Section:

QUESTION 14
You have an Azure web app named webapp1 that uses the .NET Core runtime stack. You have an Azure Application Insights resource named ApplInsight1. Webapp1 sends telemetry data to ApplInsights1.
You need to ensure that webapp1 sends the telemetry data at a fixed sampling rate.
What should you do?

A. From the code repository of webapp1, modify the ApplicationInsights.config file.
B. From the code repository of webapp1, modify the Startup.cs file.
C. From ApplInsights1. modify the Usage and estimated costs settings.
D. From ApplInsights1, configure the Continuous export settings.

Correct Answer: B
Section:

QUESTION 15
You have an Azure subscription that contains an Azure Pipelines pipeline named Pipeline1 and an app named App1. Pipeline1 is used to automate the building of App1.

You have a Slack channel named App1chat that includes an incoming webhook.
You need to ensure that when a successful build of App1 is created, a notification is sent to App1chat by using the webhook.
What should you use?

A. an alert rule

B. a notification

C. an action group

D. a subscription

Correct Answer: D
Section:

QUESTION 16
Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.
You have an Azure pipeline that is used to deploy a web app. The pipeline includes a test suite named TestSuite1. TestSuite1 is used to validate the operations of the web app.
TestSuite1 fails intermittently.
You identify that the failures are unrelated to changes in the source code and execution environment.
You need to minimize troubleshooting effort for the TestSuite1 failures.
Solution: You increase code coverage.
Does this meet the goal?

A. Yes

B. No

Correct Answer: A
Section:

QUESTION 17
You use Git for source control.
You enable GitHub code scanning.
You raise a pull request from a non-default branch. In the code scanning output you receive the following error message: 'Analysis not found.'
You need to ensure that the code scanning completes successfully for the pull request.
Which two actions should you perform? Each correct answer presents part of the solution.
NOTE: Each correct selection is worth one point.

A. Add a new workflow for code scanning.

B. Add the name of the non-default branch to the on: push specification in the code scanning workflow.

C. Update the code in the pull request.

D. Add the name of the default branch to the on: push specification in the code scanning workflow.

E. Delete the pull request, and then raise the request again from the default branch.

Correct Answer: C, D
Section:

QUESTION 18
DRAG DROP

You have a tendril in Microsoft Azure Active Directory (Azure AD), part of Microsoft Entra. The tenant contains three groups named Group1. Group2, and Group3.

You create a new project in Azure DevOps named Project1.

You need to secure the service connections for Project1. The solution must meet the following requirements:

* The members of Group1 must be able to share and unshare a service connection with other projects.
* The members of Group2 must be able to rename a service connection and update the description.
* The members of Group3 must be able to use the service connection within build or release pipelines.
* The principle of least privilege must be followed.

Which permission should you grant to each group? To answer, drag the appropriate permissions to the correct groups. Each permission may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:

Permisssions	Answer Area
Contributor	Group1:
Creator	Group2:
Organization-level Administrator	Group3:
Project-level Administrator	
User	

Correct Answer:

Permisssions	Answer Area
	Group1: Project-level Administrator
Creator	Group2: Contributor
Organization-level Administrator	Group3: User

Section:
Explanation: