vce trainer



AZ-400.75q

AZ-400

AZ-400

Microsoft Azure DevOps Solutions

Score: 800/1000

Version:

Time Limit: 120 Minutes

Licensed to Berend Post berend.post@it-university.nl

Licensed to Berend Post berend.post@it-university.nl

Design a DevOps Strategy

(6 questions)

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?

- ☐ Microsoft Project
- ☐ Bamboo
- ☐ Octopus
- ☐ Slack

Question 2

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?

- ☐ In a Grunt build task, select Enabled from Control Options.
- ☐ In a Maven build task, select Run PMD.
- ☐ In a Xcode build task, select Use xcpretty from Advanced.
- ☐ In a Gradle build task, select Run Checkstyle.

Licensed to Berend Post berend.post@it-university.nl

Question 3

Your company has an on-premises Bitbucket Server that is used for Git-based source control. The server is protected by a firewall that blocks inbound Internet traffic.

You plan to use Azure DevOps to manage the build and release processes.

Which two components are required to integrate Azure DevOps and Bitbucket? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☐ a deployment group
- ☐ a Microsoft-hosted agent
- ☐ service hooks
- ☐ a self-hosted agent
- ☐ an External Git service connection

Question 4

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.

- ☐ Publish the package to a feed.
- ☐ Create a new feed in Azure Artifacts.
- ☐ Upload a package to a Git repository.
- ☐ Add the package URL to the Environment settings in Visual Studio.
- ☐ Add the package URL to the NuGet Package Manager settings in Visual Studio.
- ☐ Create a Git repository in Azure Repos.

Licensed to Berend Post berend.post@it-university.nl

Question 5

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?

- ☐ Service Map in Azure Log Analytics
- ☐ Availability tests in Azure Application Insights
- ☐ Profiler in Azure Application Insights
- ☐ Application Map in Azure Application Insights

Question 6

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?

- ☐ modifying group memberships
- ☐ adding users
- ☐ assigning entitlements
- ☐ procuring licenses

Licensed to Berend Post berend.post@it-university.nl

Implement DevOps Development Processes

(19 questions)

Question 7

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 Git repository in Azure DevOps.

Solution: Configure the build pipeline to use a Hosted VS 2017 agent pool. Include the Java Tool Installer task in the build pipeline.

Does this meet the goal?

- ☐ Yes
- ☐ No

Question 8

You have an Azure DevOps organization named Contoso, an Azure DevOps project named Project1, an Azure subscription named Sub1, and an Azure key vault named vault1.

You need to ensure that you can reference the values of the secrets stored in vault1 in all the pipelines of Project1. The solution must prevent the values from being stored in the pipelines.

What should you do?

- ☐ Create a variable group in Project1.
- ☐ Add a secure file to Project1.
- ☐ Modify the security settings of the pipelines.
- ☐ Configure the security policy of Contoso.

Licensed to Berend Post berend.post@it-university.nl

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 Git 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?

- ☐ Yes
- ☐ No

Question 10

You have an Azure Resource Manager template that deploys a multi-tier application.

You need to prevent the user who performs the deployment from viewing the account credentials and connection strings used by the application.

What should you use?

- ☐ Azure Key Vault
- ☐ a Web.config file
- ☐ an Appsettings.json file
- ☐ an Azure Storage table
- ☐ an Azure Resource Manager parameter file

Licensed to Berend Post berend.post@it-university.nl

Question 11

Your team uses an agile development approach.

You need to recommend a branching strategy for the team's Git 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 single long-running branch
- ☐ multiple long-running branches
- ☐ a single fork per team member
- ☐ a single-running branch with multiple short-lived topic branches

Question 12

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.

- ☐ Create a webhook in Jenkins.
- ☐ Add the Team Foundation Server (TFS) plug-in to Jenkins.
- ☐ Add a domain to your Jenkins account.
- ☐ Create a personal access token in your Azure DevOps account.
- ☐ Create a service hook in Azure DevOps.

Licensed to Berend Post berend.post@it-university.nl

Question 13

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 Git 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?

- ☐ Yes
- ☐ No

Question 14

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 code pushed event.

Does this meet the goal?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Question 15

Your company uses Azure DevOps.

Only users who have accounts in Azure Active Directory can access the Azure DevOps environment.

You need to ensure that only devices that are connected to the on-premises network can access the Azure DevOps environment.

What should you do?

- ☐ Assign the Stakeholder access level all users.
- ☐ In Azure Active Directory, configure risky sign-ins.
- ☐ In Azure DevOps, configure Security in Project Settings.
- ☐ In Azure Active Directory, configure conditional access.

Question 16

Your company has a project in Azure DevOps for a new web application.

The company identifies security as one of the highest priorities.

You need to recommend a solution to minimize the likelihood that infrastructure credentials will be leaked.

What should you recommend?

- ☐ Add a Run Inline Azure PowerShell task to the pipeline.
- ☐ Add a PowerShell task to the pipeline and run Set-AzureKeyVaultSecret.
- ☐ Add a Azurre Key Vault task to the pipeline.
- ☐ Add Azure Key Vault references to Azure Resource Manger templates.

Question 17

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?

- ☐ Cobertura
- ☐ Bullseye Coverage
- ☐ MSTest
- ☐ Coverlet
- ☐ NUnit
- ☐ Coverage.py

Licensed to Berend Post berend.post@it-university.nl

Question 18

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?

- ☐ Microsoft Visual Studio test plans
- ☐ Gradle wrapper scripts
- ☐ SonarCloud analysis
- ☐ the JavaScript task runner

Licensed to Berend Post berend.post@it-university.nl

Question 19

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.

Version Control Systems

- Assembla Subversion
- Bitbucket Cloud
- Git in Azure Repos
- GitHub Enterprise

Answer Area

Project1: [ ]

Project2: [ ]

Project3: [ ]

Licensed to Berend Post berend.post@it-university.nl

Question 20

Your company builds a multi-tier web application.

You use Azure DevOps and host the production application on Azure virtual machines.

Your team prepares an Azure Resource Manager template of the virtual machine that you will use to test new features.

You need to create a staging environment in Azure that meets the following requirements:

Minimizes the cost of Azure hosting
Provisions the virtual machines automatically
Uses the custom Azure Resource Manager template to provision the virtual machines

What should you do?

- ☐ In Azure Cloud Shell, run Azure CLI commands to create and delete the new virtual machines in a staging resource group.
- ☐ In Azure DevOps, configure new tasks in the release pipeline to deploy to Azure Cloud Services.
- ☐ From Azure Cloud Shell, run Azure PowerShell commands to create and delete the new virtual machines in a staging resource group.
- ☐ In Azure DevOps, configure new tasks in the release pipeline to create and delete the virtual machines in Azure DevTest Labs.

Licensed to Berend Post berend.post@it-university.nl

Question 21

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 Git 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?

- ☐ Yes
- ☐ No

Question 22

You are automating the testing process for your company.

You need to automate UI testing of a web application.

Which framework should you use?

- ☐ JaCoco
- ☐ Selenium
- ☐ Xamarin.UITest
- ☐ Microsoft.CodeAnalysis

Licensed to Berend Post berend.post@it-university.nl

Question 23

Your company uses a Git 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?

- ☐ squash merge
- ☐ fast-forward merge
- ☐ Git fetch
- ☐ no-fast-forward merge

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 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 an email subscription to an Azure DevOps notification.

Does this meet the goal?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

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.

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 add a trigger to the build pipeline.

Does this meet the goal?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Implement Continuous Integration

Case Study (2 questions)

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.
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 2016

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.

 Licensed to Berend Post berend.post@it-university.nl

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.

Question 26

In Azure DevOps, you create Project3.

You need to meet the requirements of the project.

What should you do first?

- ☐ From Azure DevOps, modify the build definition.
- ☐ From SonarQube, obtain an authentication token.
- ☐ From Azure DevOps, create a service endpoint.
- ☐ From SonarQube, create a project.

Licensed to Berend Post berend.post@it-university.nl

Question 27

You need to implement Project4.

What should you do first?

- ☐ Add the FROM instruction in the Dockerfile file.
- ☐ Add a Copy and Publish Build Artifacts task to the build pipeline.
- ☐ Add a Docker task to the build pipeline.
- ☐ Add the MAINTAINER instruction in the Dockerfile file.

(15 questions)

Question 28

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?

- ☐ deployment conditions
- ☐ deployment queue settings
- ☐ release gates
- ☐ pull request triggers

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 Pre-deployment conditions settings of the release pipeline, you select After stage.

Does this meet the goal?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Question 30

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?

- ☐ Yes
- ☐ No

Question 31

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?

- ☐ Configure the File System Agent plug-in.
- ☐ Add a devDependencies section to Package-lock.json.
- ☐ Configure the Artifactory plug-in.
- ☐ Delete Package-lock.json.

Licensed to Berend Post berend.post@it-university.nl

Question 32

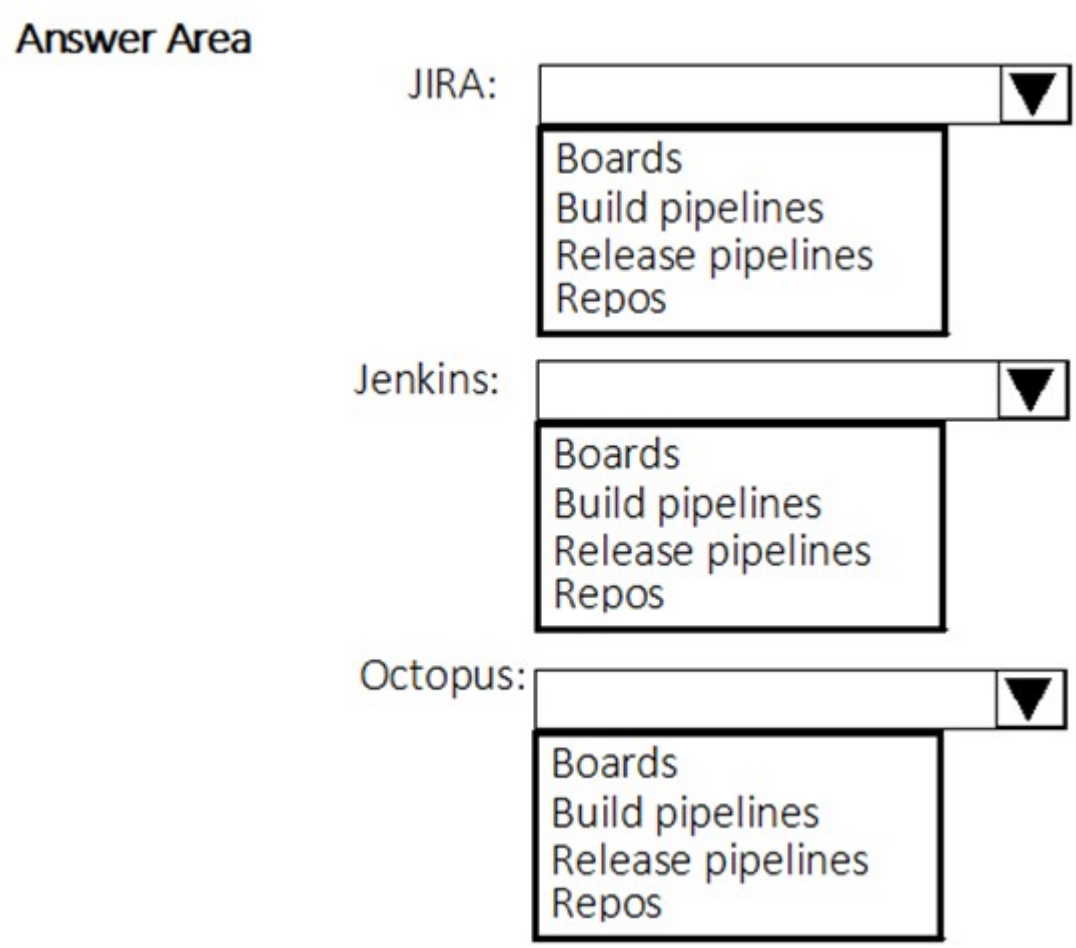
HOTSPOT

You currently use JIRA, Jenkins, and Octopus as part of your DevOps processes.

You plan to use Azure DevOps to replace these tools.

Which Azure DevOps service should you use to replace each tool? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.



Licensed to Berend Post berend.post@it-university.nl

Question 33

You have a project in Azure DevOps. You have an Azure Resource Group deployment project in Microsoft Visual Studio that is checked in to the Azure DevOps project.

You need to create a release pipeline that will deploy resources by using Azure Resource Manager templates. The solution must minimize administrative effort.

Which task type should you include in the solution?

- ☐ Azure Cloud Service Deployment
- ☐ Azure RM Web App Deployment
- ☐ Azure PowerShell
- ☐ Azure App Service Manage

Question 34

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?

- ☐ OAuth
- ☐ GitHub App
- ☐ a personal access token
- ☐ SAML

Question 35

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.

Licensed to Berend Post berend.post@it-university.nl

Question 36

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?

- ☐ integration testing
- ☐ staging
- ☐ production release
- ☐ build

Question 37

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.

- ☐ vs2017-win2016
- ☐ ubuntu-16.04
- ☐ win1803
- ☐ macOS-10.13
- ☐ vs.2015-win2012r2

Licensed to Berend Post berend.post@it-university.nl

Question 38

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:2.1-sdk
02 COPY ./
03 RUN dotnet publish -c Release -o out
04 FROM microsoft/dotnet:2.1-sdk
05 COPY -from=0 /out /
06 WORKDIR /
07 ENTRYPOINT ["dotnet", "appl.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?

- ☐ 1
- ☐ 3
- ☐ 4
- ☐ 7

Question 39

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?

- ☐ Grunt
- ☐ Chef
- ☐ Maven
- ☐ Gulp

Licensed to Berend Post berend.post@it-university.nl

Question 40

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?

- ☐ Chef
- ☐ Gradle
- ☐ Octopus
- ☐ Gulp

Question 41

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?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Question 42

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?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Implement Continuous Delivery

Case Study (1 questions)

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 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 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.
Overview

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

ExistingEnvironment
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

Licensed to Berend Post berend.post@it-university.nl

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.

Licensed to Berend Post berend.post@it-university.nl

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 $vname
  -ConfigurationMode 'ApplyOnly'
```

Question 43

What should you use to implement the code quality restriction on the release pipeline for the investment planning applications suite?

- ☐ a pre-deployment approval
- ☐ a deployment gate
- ☐ a post-deployment approval
- ☐ a trigger

Licensed to Berend Post berend.post@it-university.nl

(12 questions)

Question 44

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 approval process that contains a condition. The condition requires that releases be approved by a team leader before they are deployed.

You have a policy stating that approvals must occur within eight hours.

You discover that deployment fail if the approvals take longer than two hours.

You need to ensure that the deployments only fail if the approvals take longer than eight hours.

Solution: From Post-deployment conditions, you modify the Timeout setting for post-deployment approvals.

Does this meet the goal?

- ☐ Yes
- ☐ No

Question 45

Your company has a project in Azure DevOps for a new web application.

The company uses ServiceNow for change management.

You need to ensure that a change request is processed before any components can be deployed to the production environment.

What are two ways to integrate ServiceNow into the Azure DevOps release pipeline? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- ☐ Define a deployment control that invokes the ServiceNow REST API.
- ☐ Define a pre-deployment gate before the deployment to the Prod stage.
- ☐ Define a deployment control that invokes the ServiceNow SOAP API.
- ☐ Define a post-deployment gate after the deployment to the QA stage.

Licensed to Berend Post berend.post@it-university.nl

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.

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?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

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.

You have an approval process that contains a condition. The condition requires that releases be approved by a team leader before they are deployed.

You have a policy stating that approvals must occur within eight hours.

You discover that deployment fail if the approvals take longer than two hours.

You need to ensure that the deployments only fail if the approvals take longer than eight hours.

Solution: From Pre-deployment conditions, you modify the Timeout setting for pre-deployment approvals.

Does this meet the goal?

- ☐ Yes
- ☐ No

Question 48

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 project.

Your build process creates several artifacts.

You need to deploy the artifacts to on-premises servers.

Solution: You deploy an Azure self-hosted agent to an on-premises server. You add a Copy and Publish Build Artifacts task to the deployment pipeline.

Does this meet the goal?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Question 49

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?

- ☐ an Azure Scheduler job
- ☐ a trigger
- ☐ a gate
- ☐ an Azure function

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.

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?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Question 51

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 project.

Your build process creates several artifacts.

You need to deploy the artifacts to on-premises servers.

Solution: You deploy a Kubernetes cluster on-premises. You deploy a Helm agent to the cluster. You add a Download Build Artifacts task to the deployment pipeline.

Does this meet the goal?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Question 52

HOTSPOT

Your company has an Azure subscription.

The company requires that all resource group in the subscription have a tag named organization set to a value of Contoso.

You need to implement a policy to meet the tagging requirement.

How should you complete the policy? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area



Licensed to Berend Post berend.post@it-university.nl

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 have an Azure DevOps project.

Your build process creates several artifacts.

You need to deploy the artifacts to on-premises servers.

Solution: You deploy a Docker build to an on-premises server. You add a Download Build Artifacts task to the deployment pipeline.

Does this meet the goal?

- ☐ Yes
- ☐ No

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 have an approval process that contains a condition. The condition requires that releases be approved by a team leader before they are deployed.

You have a policy stating that approvals must occur within eight hours.

You discover that deployment fail if the approvals take longer than two hours.

You need to ensure that the deployments only fail if the approvals take longer than eight hours.

Solution: From Post-deployment conditions, you modify the Time between re-evaluation of gates option.

Does this meet the goal?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Question 55

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 approval process that contains a condition. The condition requires that releases be approved by a team leader before they are deployed.

You have a policy stating that approvals must occur within eight hours.

You discover that deployment fail if the approvals take longer than two hours.

You need to ensure that the deployments only fail if the approvals take longer than eight hours.

Solution: From Pre-deployment conditions, you modify the Time between re-evaluation of gates option.

Does this meet the goal?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Implement Dependency Management

(4 questions)

Question 56

Your company is concerned that when developers introduce open source libraries, it creates licensing compliance issues.

You need to add an automated process to the build pipeline to detect when common open source libraries are added to the code base.

What should you use?

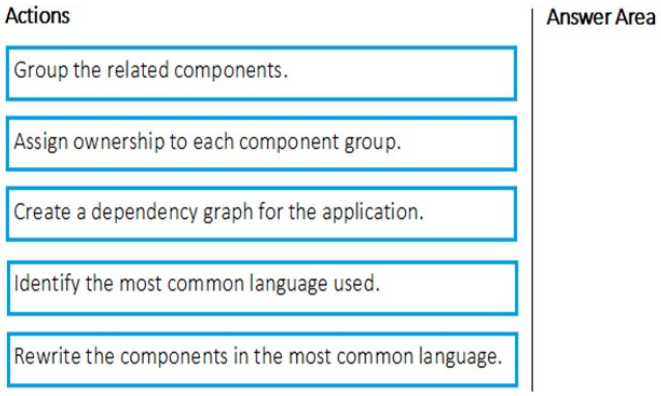
- ☐ Microsoft Visual SourceSafe
- ☐ PDM
- ☐ WhiteSource
- ☐ OWASP ZAP

Question 57

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.



Licensed to Berend Post berend.post@it-university.nl

Question 58

You plan to share packages that you wrote, tested, validated, and deployed by using Azure Artifacts.

You need to release multiple builds of each package by using a single feed. The solution must limit the release of packages that are in development.

What should you use?

- ☐ local symbols
- ☐ views
- ☐ global symbols
- ☐ upstream sources

Question 59

Your company is concerned that when developers introduce open source libraries, it creates licensing compliance issues.

You need to add an automated process to the build pipeline to detect when common open source libraries are added to the code base.

What should you use?

- ☐ Microsoft Visual SourceSafe
- ☐ Code Style
- ☐ Black Duck
- ☐ Jenkins
- ☐ SourceGea
- ☐ OWASP ZAP

Licensed to Berend Post berend.post@it-university.nl

Implement Application Infrastructure

(8 questions)

Question 60

You have an application that consists of several Azure App Service web apps and Azure functions.

You need to access the security of the web apps and the functions.

Which Azure features can you use to provide a recommendation for the security of the application?

- ☐ Security & Compliance in Azure Log Analytics
- ☐ Resource health in Azure Service Health
- ☐ Smart Detection in Azure Application Insights
- ☐ Compute & apps in Azure Security Center

Question 61

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 2016.

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 consist configuration.
Minimize administrative effort to configure the virtual machines.

What should you include in the recommendation?

- ☐ Azure Resource Manager templates and the PowerShell Desired State Configuration (DSC) extension for Windows
- ☐ Deployment YAML and Azure pipeline deployment groups
- ☐ Azure Resource Manager templates and the Custom Script Extension for Windows
- ☐ Deployment YAML and Azure pipeline stage templates

Licensed to Berend Post berend.post@it-university.nl

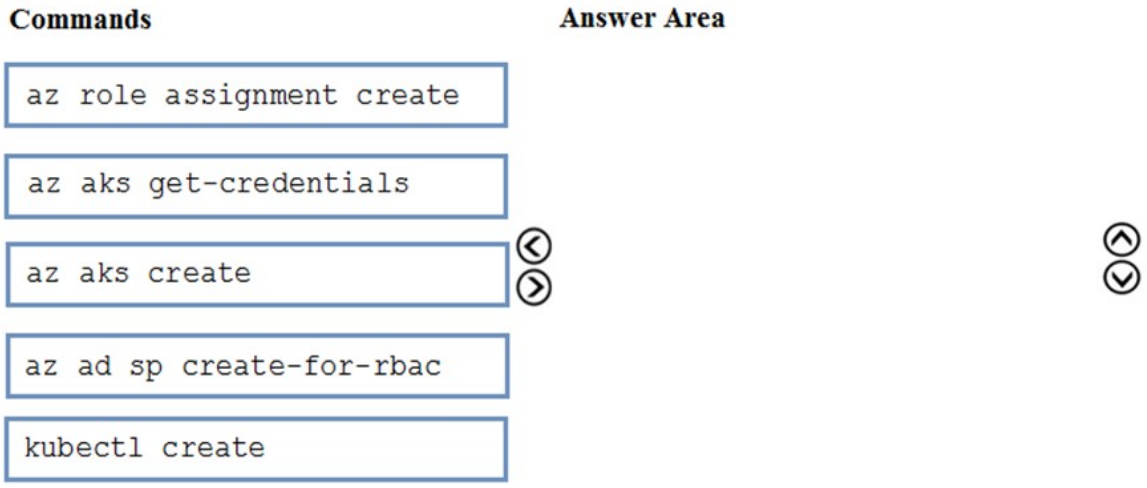
Question 62

DRAG DROP

You plan to use Azure Kubernetes Service (AKS) to host containers deployed from images hosted in a Docker Trusted Registry.

You need to recommend a solution for provisioning and connecting to AKS. The solution must ensure that AKS is RBAC-enabled and uses a custom service principal.

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



Question 63

SIMULATION

You need to configure an Azure web app named az400-9940427-main to contain an environmental variable named “MAX_ITEMS”. The environmental variable must have a value of 50.

To complete this task, sign in to the Microsoft Azure portal.

Licensed to Berend Post berend.post@it-university.nl

Question 64

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?

- ☐ Yes
- ☐ No

Question 65

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?

- ☐ Yes
- ☐ No

Licensed to Berend Post berend.post@it-university.nl

Question 66

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?

- ☐ Yes
- ☐ No

Question 67

You have a private distribution group that contains provisioned and unprovisioned devices.

You need to distribute a new iOS application to the distribution group by using Microsoft Visual Studio App Center.

What should you do?

- ☐ Request the Apple ID associated with the user of each device.
- ☐ Register the devices on the Apple Developer portal.
- ☐ Create an active subscription in App Center Test.
- ☐ Add the device owner to the organization in App Center.

Licensed to Berend Post berend.post@it-university.nl

Implement Continuous Feedback

(8 questions)

Question 68

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?

- ☐ the Microsoft Test & Feedback extension
- ☐ Microsoft Visual Studio App Center integration
- ☐ Azure Application insights widgets
- ☐ Jenkins integration

Question 69

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.

Licensed to Berend Post berend.post@it-university.nl

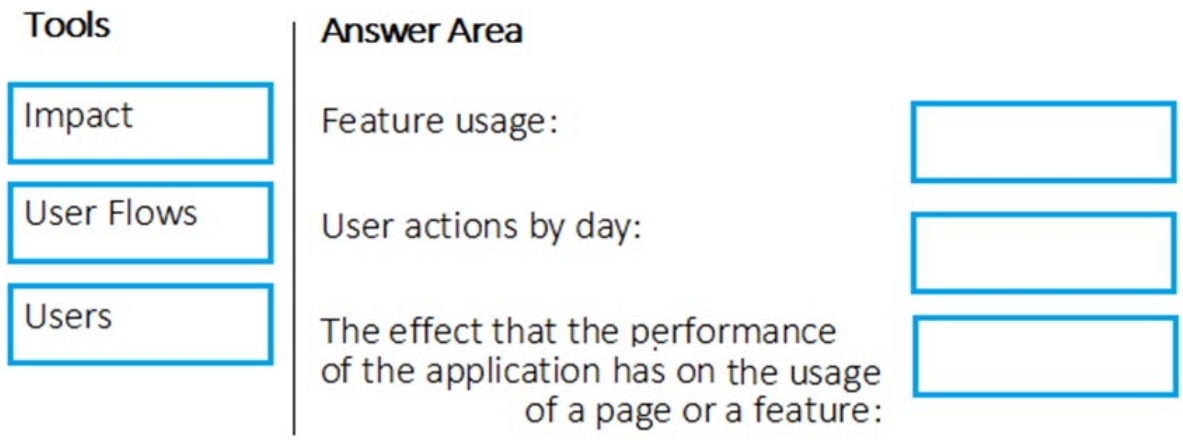
Question 70

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.



Question 71

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?

- ☐ Azure Log Analytics
- ☐ PL/pgSQL
- ☐ PL/SQL
- ☐ Transact-SQL

Licensed to Berend Post berend.post@it-university.nl

Question 72

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.

- ☐ Azure Logic Apps
- ☐ Azure Pipelines
- ☐ Microsoft Visual Studio App Center
- ☐ Azure DevOps Project
- ☐ Azure Application Insights

Question 73

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?

- ☐ Application Insights Connector
- ☐ Automation & Control
- ☐ IT Service Management Connector (ITSM)
- ☐ Insight & Analytics

Licensed to Berend Post berend.post@it-university.nl

Question 74

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?

- ☐ Azure Event Hubs
- ☐ Azure SQL Database Intelligent Insights
- ☐ Azure Application Insights
- ☐ Azure Log Analytics

Question 75

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.

- ☐ Modify the load balancer settings of VMSS1.
- ☐ Redeploy VMSS1.
- ☐ Upload a custom script file to sa1.
- ☐ Modify the Custom Script extension settings of VMSS1.
- ☐ Update the configuration of a virtual machine in VMSS1.

Licensed to Berend Post berend.post@it-university.nl