DevOps

Question 1

What are the six principles of DevOps?

Answer: DevOps is the integration between development team and operation and it has six principles:

1. Customer - Centric action
2. Create with the end in mind
3. End to End responsibility
4. Cross-functional autonomous teams
5. Continuous improvement
6. Automate everything you can.

Customer-centric action: This is when development teams are developing products based on requirements they received by constantly interacting with operation and end-users which makes DevOps cost effective.

Create with the end in mind: The primary goal of delivering the end product to the market on time makes communication very solid between teams with direct focus on the target goal.

End to End responsibility: The DevOps teams are responsible for creation and development, maintenance and support for the stability of the product until it reaches its end-of-life circle.

Cross-functional-autonomous teams: Every DevOps team member possesses the ability and skills to help on any section of production during creation to delivery of the end product.

Continuous Improvement: Experimentation and research are important in DevOps so that team members can be ready when new change in technology becomes available and change in customers' requirement or change in legislation of product, to facilitate continuous improvement of product.

Automate everything you can: Infrastructure automation is one of the fundamental practice area of DevOps and one of the revolutionary. Automating involves testing developed code to run End-to-end tests and then deploying the integrated code to the market through End-to-end orchestration of the DevOps pipeline. Automation in DevOps is very important as it can help with time management and keep you focus on more important projects and also help to version control code. As a result, team members need to consider :-

DevOps

- ★ Evaluate your needs
- ★ Identify bottlenecks
- ★ Consider return on investment
- ★ Continuously assess and re-evaluate

Question 2

In your own words describe what continuous integration is.

Answer: Continuous integration is immidiate deployment of developed code from team members into production through automation. This includes Build, Release, Operate and monitor.

Question 3

What is the difference between DevOps and Agile teams?

Answer: The difference between DevOps and Agile teams are as follows:

DevOps	Agile
The integration of the development team and operation are the fundamentals of DevOps.	Agile engages directly with product owners from the very beginning.
DevOps is a cultural practice to produce fast, effective products and not a service.	Agile is a formula used by a team of developers and project stakeholders.
DevOps automate and deploy integrated code faster and landing in the market quicker through continuous delivery.	There is a project manager or Scrum master that gives development team feedback on Backlog to Sprint iteration for fast and efficient working software.
Tools from DevOps is used to automate the working software into production.	Agile produces working software.
Continuous deployment in DevOps helps automating integrated code for ployment after a strong testing process.	Agile follows customers' collaboration to produce satisfactory products.
It’s developers assist in maintaining and supporting the product together with other admin teams.	In agile, business people and developers must work together daily throughout the project.

DevOps

All team members on a DevOps project are multi skillful so that no team member is isolated like in agile.	Building projects around **skillful and motivated individuals** is a practice in agile.

Question 4

What is project automation?

Answer: DevOps pipelines is used for Project automation by collecting Metrics from production and the integration of developed code, then testing it through automation and running End-to-end test before deploying the tested infrastructure.

Question 5

List three tools that you can use for project automation.

Answer: Three tools that can be used for project automation are:

- Grunt
- gulp
- Webpack

Practical

This is the link to the Git repository for the practical project from 1st first school's assignment: [Git repository for the CA practical]