**Question 1: Explain how the principles underlying agile methods lead to the accelerated development and deployment of software (SE 3.2)**

The customer involvement allows the development team to work on the right things and prioritize requirements effectively. The incremental delivery allows requirements and implementation changes during the development process. The people not process makes individuals in the development team work in the positions they are good at. The embrace change makes the product flexible and scalable for potential changes. The maintain simplicity forces the development team to reduce or eliminate complexity which saves time when executing or understanding the product.

**Question 2: What are the key themes in the Agile Manifesto principals and how do they impact software development?**

The first one is individuals and interactions over processes and tools. The individuals are more responsive and flexible than processes, the software development may take a long time to get results from a fixed process, but it only takes a short amount of time to get some response from an individual. While it is a heavy work to change the software development process, letting an individual change work plans is much easier. To get communications or results from tools requires meeting certain conditions, but there is no limitation to get interaction from individuals. Therefore, this manifesto theme makes communications in software development more effective and responsive.

The second one is working software over comprehensive documentation. Instead of letting stakeholders read documentation and then understand what the product does and what they can get, a working software is a better demonstration. A working software can present the development team’s idea and understanding about the business to stakeholders, let them judge the correctness, quality and collect feedback from them. In conclusion, a working software provides practical experience and a better form of explanation in software development.

The third one is customer collaboration over contract negotiation. Once a contract negotiation is done, it is hard to change. Based on this fact, if the development team misunderstands any parts in the contract negotiation, then the result will be a defective or wrong product. However, letting customers collaborate with the development team can avoid this problem. They can assure they are working on the right thing since they can constantly get feedback from customers. From a software development perspective, customer collaboration brings project correctness.

The last one is responding to change over following a plan. This manifesto theme links to all other themes: individuals and interactions, customer collaboration brings more changes. These changes contribute to more working softwares. Therefore, responding to change is the key theme in Agile methods and it brings flexibility to the software development.

**Question 3: It has been suggested that one of the problems of having a user closely involved with a software development team is that they “go native.” That is, they adopt the outlook of the development team and lose sight of the needs of their user colleagues. Suggest three ways how you might avoid this problem and discuss the advantages and disadvantages of each approach**

Use Agile development methods. There are multiple rounds of development cycles in agile development methods and there is a requirement analysis process before the next round design and implementation. The disadvantage is a longer development cycle, requiring more resources and higher management skills.

Let more users, which are user colleagues, also collaborate with the development team. The advantage is the involvement of user colleagues can effectively prevent or solve the problem of losing sight of the needs during the development. However, the disadvantage is also obvious which makes managers refuse to adopt this idea: uncertainty. There are many situations may happen in this process such as heavy communication responsibilities, conflicts between user colleagues and development team, even between user colleagues themselves. Once these situations happen, it will waste extra time, effort and resources to solve both personnel and product problems such as make final decisions and create prototypes.

Extend the quality assurance process, and make decisions and implement necessary changes based on the user colleges’ feedback. The advantage is avoid gaps between product and users’ needs. The disadvantage is maybe not all parts are available to be changed since the early implementation is completed, which may not be able to fully meet the needs of the user colleagues.