Question 1

Software engineering can be defined as a branch of computer science that focuses on the design, development, testing, and maintenance of software applications (Pressman, 2015).

Question 2

The main difference between software engineering and traditional programming is that the latter focuses on writing computer code, testing codes, updating codes, and creating scripts. Software engineering covers all aspects of software creation, including concept, design, and coding (Sommerville, 2015).

Question 3

The Software Development Life Cycle (SDLC) can be defined as a structured process that allows the production of high-quality, low-cost software in the shortest possible production period to produce superior software that meets and exceeds all customer expectations (Sommerville, 2015).

Question 4

Planning: This initial stage involves defining the software’s purpose and scope, much like pinpointing the destination and plotting the best route.

Requirements Analysis: During this phase, the project team collects information from stakeholders, including analysts, users, and clients. They conduct interviews, surveys, and focus groups to understand the user’s expectations and needs.

Design: This entails building the project’s framework.

Coding: It’s at this stage that engineers and developers convert the software design into tangible code.

Testing: It’s a phase that entails a stringent quality inspection on a production line.

Deployment: This phase involves presenting a product to the users by pushing it to the production environment.

Maintenance: This stage is characterized by constant assistance and improvement, which guarantees the software’s best possible functioning and longevity and ensures it meets customer expectations (Pressman, 2015).

Question 5

Agile vs. Waterfall Models: The waterfall method is designed for long-term projects with predetermined timelines. The project is completed linearly, with each phase dependent on the previous one. Agile, however, uses short iterations to deliver value rapidly, allowing teams to adjust plans over time and achieve shorter time frames (Sommerville, 2015).

Question 6

Requirements Engineering: Requirements engineering is the discipline that involves establishing and documenting requirements. Its process entails gathering, analyzing, specifying, and managing the requirements for a system, product, or service (Pressman, 2015).

References

Pressman, R. S. (2015). Software engineering: a practitioner’s approach. Palgrave Macmillan.

Sommerville, I. (2015). Software engineering. Pearson.