ANSWERS.

Software engineering is the systematic application of engineering principles , methods and tools to the development and maintenance of high quality software systems.

Software engineering is different from traditional programming in that

The software development cycle consists of the following phases:

Requirements-this is where the developer gathers and documents user needs and system requirements.

Design-this is creating high level designs of the software architecture and user interface.

Implementation-this involves writing the code and building the design according to the design specification.

Testing-this involves conducting various tests to ensure that the software meets the quality standards and functional requirements.

Deployment- this is releasing the software to users.

Maintenance-this involves providing ongoing support ,updates and enhancements to the software after deployment.

The agile model is an iterative and incremental approach which focuses on flexibility ,collaboration and responding to change while the waterfall method is a sequential approach which has distinct phases flowing downwards like a waterfall.

Requirements engineering

The concept of modularity in software design involves

Unit testing involves testing individual components of a software.

Integration testing involves testing interactions between different components.

System testing is testing the entire software system as a whole.

Acceptance testing is testing the software against the user requirements to ensure it meets the user needs.

Testing is important because

Version control systems are software tools for tracking changes to source code and coordinating work among team members

The role of a software project manager is to oversee the planning ,execution and delivery of software projects.

Challenges in managing software projects include changing requirements during the development cycle which may lead to project delays and tight deadlines which can result in rushed development and compromised quality.

Software maintenance

Ethical issues that software engineers may face include