ASSIGNMENT MODULE-1

**1.What is SDLC?**

* SDLC is a structure imposed on the development of a software product that defines the process for planning, implementation, testing, documentation, deployment and ongoing maintenance and support.

**2.What is software testing?**

* Software Testing is a process used to identify the correctness, completeness and quality of developed computer software.

**3.What is Agile Methodology?**

* Agile model is a combination of iterative and implemented incremented process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.

**4.What is SRS?**

* A software requirement specifications(SRS) is a complete description of the behaviour of the system to be developed.

**5.What is OOPS?**

* Object Oriented Programming System.

**6.Write basic concepts of OOPS.**

* (1)Class

(2)Object

(3)Encapsulation

(4)Inheritance

(5)Polymorphism

(6)Abstraction

**7.What is object?**

* An object represents an instances of a class.

It can be individual, identifiable item, unit or entity, either real or abstract with a well-defined role in the problem domain.

**8.What is class?**

* Class is a collection of data member(variable) and member function(methods/process) with its behaviours.It is a blueprint for an object.

**9.What is encapsulation?**

* Encapsulation is the practice of including in an object, everything it needs (hidden from other objects).The internal state is usually not accessible by other objects.
* It enables data hiding, hiding irrelevant information from the users of a class and exposing only the relevant details required by the user.

**10.What is inheritance?**

* Inheritance means that one class inherits the charecteristics of another class.

**11.What is polymorphism?**

* -Polymorphism means having many forms.

-The ability to take one name having different or many forms.

**12.**

**13.**

**14.Write SDLC phases with basic introduction.**

* SDLC phases

1)Required collection/ gathering – Based on client’s need collect features, usage senarioes etc.

- It may be incomplete, unambigoures or even incorrect.

- User needs/ requirements may change.

-Constant feedback/validation needed.

-In all these 3 types of problems can arise.

(1)Lack of clarity (2)Requirements confusion.(3)Requirements amalgamation.

- There are two types of requirements:

(i)Functional requirements

(ii)Non functional requirements.

2)Analysis phase-

-This phase represents ‘what’, ‘how’ phase.It defines the requirement of the system, independent of how these requirements will be accomplished.

-This phase states the requirement in clear and precise manner, what is to be built.It is also stated in documentation.

-The design and architecture of this phase defines the components, their interfaces and behaviours.

3)Design phase-

-It includes design architecture document and implementation plan.

-Also Critical Priority Analysis

Performance Analysis

Test plan(the team converts the typical scenarios into plan).

-Design team expand upon the documentation and guides the decision process.

-Analysing it reduces complexity of many things which eventually leads to a higher quality product.

4)Implemention-

-In this phase developer builds the components either from scratchnor by composition.

-Based on the requirement documents of design and analysis team,the team should build exactly with chance of innovation and flexibility.

-This phase deals with code, critical error removal, issues of quality performance, baselines, libraries and debugging.

-In the end deliverable is the product itself.

5)Testing phase-

-Quality is very important but sometimes many companies go for the quantity over quality at a lower quality level.

-So it is much easier to explain to a customer what is the missing feature than to explain why the product lacks quality.

-It also gives the idea of upto the mark product to the customer as per its requirements.

6)Maintenance phase-

-It is the process of enhancing and optimisiing the deployed software as well as fixing defects.

-It comes in role after the deployment of the software.

-It includes configuration and version management , reengineering(redesigning and refactoring).

-Reapeatable, automated test enable evolution and refactoring.

-Updating all analysis, design and user documentation.

-There are 3 types of it:

(1)Corrective maintenance

(2)Adaptive maintenance

(3)Perfective maintenance.

**15.Explain phases of Waterfall model.**

* Requirement collection, analysis, design, implementation/coding, testing, maintenance.

**16.Write phases of spiral model.**

* (1)Planning: determination of objectives, alternatives and constraints.

(2)Risk analysis: Analysis of alternatives and identification/ resolution of risks.

(3)Engineering: Development of the ‘next level’ product.

(4)Customer evaluation: Assessment of the results of engineering.

**17.Write Agile Manifesto Principles.**

* (1)Individual Interaction

(2)Working Software (documentation + practical software)

(3)Customer collaboration

(4)Responding to change

**18.Explain working methodology of Agile model and also write its pros and cons.**

* Agile model is a combination of iterative and incremental process models with focus or process adaptability and customer satisfaction by rapid delivery of working software product.
* Pros:
* Realistic approach as resource requirements are minimum.
* Promotes teamwork and cross training.
* Functionality can be developed rapidly and demonstrated.
* Suitable for changing requirement.
* Good model for steady changes.
* Minimal rules so easy documentation as needs very little or no planning.
* Enables concurrent development.
* Cons:
* Not suitable for handling complex dependencies .
* More risk of sustainance, maintenance and extensibility.
* High individual dependency, and since there is minimum documentation generated.
* Depend heavily on customer interaction, so interaction, so if he’s not clear whole team is driven in wrong direction.
* An overall plan and an agile leader is a must, without which it will not work.
* Transfer of technology to new members may be quite challenging due to lack of documentation.

 