Software testing assignment

***Module 1 – Fundamental***

1. **What is SDLC?**

* It is stands for Software Development Life Cycle.
* 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.

1. **What is software testing?**

* Software Testing is a process used to identify the correctness, completeness, and quality of developed computer software.
* Test execution is only a part of testing, but not all of the testing activities.
* Test activities exist before and after test execution

1. **What is agile methodology?**

* Agile methodology is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.
* Agile Methods break the product into small incremental builds.

1. **What is SRS**

* It is stands for Software Requirement Specification.
* A software requirements specification (SRS) is a complete description of the behavior of the system to be developed.
* It includes a set of use cases that describe all of the interactions that the users will have with the software.

1. **What is oops**

* It is stands for object oriented programming language.
* Object-Oriented Programming (OOP) is a programming paradigm that structures programs around objects instead of logic and functions.

1. **Write Basic Concepts of oops?**
2. Class
3. Object
4. Encapsulation
5. Inheritance
6. Polymorphism
7. Abstraction
8. **What is object**

* It is an instance of class which has state and behavior.

1. **What is class**

* It is a structure in which we can have member functions and member variable are there.

1. **What is encapsulation**

* Wrapping data into single unit is called encapsulation.

1. **What is inheritance**

* To access property of one class to another class is called inheritance.

1. **What is polymorphism**

* One name several forms.
* Same function name but having different functionalities with different behavior is called polymorphism.

1. **Draw Use case on Online book shopping**

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1. **Draw Use case on online bill payment system (paytm)**

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

* There are 6 phases are as follow:-

1. Requirements Collection/Gathering:- Establish customer needs.
2. Analysis:- Model and specify the requirements “what”.
3. Design:- Model and specify a solution “why”.
4. Implmentation:- construct a solution in software.
5. Testing:-validate the solution agains the requirements.
6. Maintenance:- Repair defects and adapt the solution to the new requirements.
7. **Explain Phases of the waterfall model**

* The waterfall model is a sequential project management methodology that breaks down development activities into phases. The phases are as follows:

1. **Requirements**: The team gathers information to ensure the project's success.
2. **System design**: The team specifies the hardware, programming languages, and other details.
3. **Implementation**: The team puts everything into action.
4. **Testing**: The development team hands the project over to quality assurance.
5. **Deployment**: The software is deployed to the end user.
6. **Maintenance**: The project is maintained after deployment
7. **Write phases of spiral model**

* The spiral model is a software development model that involves repeating a series of phases, or "spirals", to improve a project gradually.
* There are 4 phases are as follows:

1. **Planning**: Identify the objectives of the project and alternatives for achieving them.
2. **Risk analysis**: Evaluate the alternatives and identify potential risks.
3. **Development and testing**: Develop and test the next level of the product.
4. **Evaluation**: Review the results of the previous phases and plan for the next iteration.

**17. Write agile manifesto principles**

1. Customer satisfaction through early and continuous software delivery.
2. Accommodate changing requirements throughout the development process.
3. Frequent delivery of working software.
4. Collaboration between the business stakeholders and developers throughout the project.
5. Support, trust, and motivate the people involved.
6. Enable face-to-face interactions.
7. Working software is the primary measure of progress.
8. Agile processes to support a consistent development pace .
9. Attention to technical detail and design enhances agility
10. Simplicity
11. Self-organizing teams encourage great architectures, requirements, and designs.
12. Regular reflections on how to become more effective
13. **Explain working methodology of agile model and also write pros and cons.**

* Agile SDLC model is a combination of iterative and incremental process models with focus on process adaptability and customer satisfaction by rapid delivery of working software product.
* Agile Methods break the product into small incremental builds.
* These builds are provided in iterations.
* **PROS:-**

1. It is a very realistic approach for software development.
2. It Promotes teamwork and cross training.
3. Functionality can be developed rapidly and demonstrated.
4. Minimum resources are required.
5. Suitable for fixed or changing requirements
6. Delivers early partial working solutions.
7. Good model for environments that change steadily.
8. Minimal rules, documentation easily employed.
9. Enables concurrent development and delivery within an overall planned context.
10. Little or no planning required.
11. Easy to manage
12. Gives flexibility to developers

* **CONS:-**

1. Not suitable for handling complex dependencies.
2. More risk of sustainability, maintainability and extensibility.
3. An overall plan, an agile leader and agile PM practice is a must without which it will not work.
4. Strict delivery management dictates the scope, functionality to be delivered, and adjustments to meet the deadlines.
5. Depends heavily on customer interaction, so if customer is not clear, team can be driven in the wrong direction.
6. There is very high individual dependency, since there is minimum documentation generated.
7. Transfer of technology to new team members may be quite challenging due to lack of documentation.
8. **Draw usecase on Online shopping product using COD.**

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1. **Draw use case on Online shopping product using payment gateway.**