**Quiz 1**

**Name: Nachiket Barve**

**Part 1**

1.) Embedded software is the software that resides under another device such as a microprocessor or ROM.

Examples are : Washing machine, Microwaves, Automobiles (Car) contains an ECU chip which has software embedded in it.

2.) Linker's function is to link the Object files (.class files in case of Java) and the library routines to convert them into executable binary file or machine code so that the Computer understands it.

**Part 2**

5. )

a) Requirement analysis : Business requirement document, SRS

b) Design : High level and low level design documents

c) Develop : development guides

d) Test : Testing documents such as manual and automation testing or test plan documents

e) Implement : source code documents

f) Installation : installation and compliance documents

g) Maintenance : Maintenance documents

7 .)

Quality : it is the organizational commitment to quality. For eg. Absence of system crashes, correspondence between software and user expectations.

Process Model : It is the layer that holds the layers intact. It enables timely delivery.

Methods: It is the layer that supports things such as how to do requirement analysis, design modeling, construction, test and support.

Tools : This layer provides support for the processes and methods. FOr eg. Git for version control, IDE's to write code and debugging.

8) Agile and scrum SDLC models use sprint and backlog.

9.) Coding in small - medium sized teams with vaguely or rapidly changing requirements is the key to XP programming.

10.) Agile methodology :

* Fast paced, speedy SDLC methodology which may bypass 1 or more SDLC phases
* It is usually less formal and has a very reduced scope
* It is used for applications which need timely delivery or are time critical.
* Used in organization that deploy disciplined methods
* FOr eg : Adaptive software development, Crystal clear, Xtreme programming, Scrum

11.) Software project management is the art of science and planning and leading software projects without which software cannot be delivered in a timely manner. Management process is an engineering process because it is a systematic and organized approach, has deadlines, has risk factors, is developed by people having different skill levels, has resources constrains, has its own lifecycle.

12.)

My team consisted of 3 people :

Jai Wadhwani: Xtreme programming - Coding in small - medium sized teams with vaguely or rapidly changing requirements is the key to XP programming.

Mithun Nallu : Agile model - it is a feature driven SDLC model , Key points are speculate, collaborate and learn.

Myself : Crystal clear : It is basically designed for smaller teams usually less than 10. It is a lightweight methodology which focusses more on communication between team members, knowledge transfer, and avoids strict / rigid processes followed by other methodologies. Its main focus is on people than anything else.

13.) Repository : It is the place where you store your files remotely or the database where your changes are tracked.

Working set : the files on your local machine which you havent pushed on to the remote repository yet.

Branching: make a copy of your entire repository and work on it seprately in a sandbox environment. You can merge the code back again to the master repository.

14.) Centralized version control system :

It is the only central repository where everybody checks their code in. Add, commit and push operations are done on this one repository only.

Advantages:

1.) Easily maintanable.

2.) centralized codebase. any updations, deletions to the codebase easy

disadvantages:

1.) If there is a problem in one code commit, the whole codebase can be cluttered

Distributed VCS:

It does not contain a single repository as centralized VCS. Here the code merges from one repo to other. Which repo should be trusted is imposed from outside the process and not by software itself.

Advantages:

1.) COde redundancy, less chances of failure

Disadvantages:

1.) Not easily maintanable.

2.) Decentralized codebase, lots of updations and deletions

16.) Software configuration document :

Maintain the integrity of the system – Identify all related parts of the system – Control the changes of different system environment(test, production, different customer requirements on system configuration)

• Rebuild a system from scratch, as well as handle disaster recovery tasks

For eg software system config :

Software System Configuration Information

• Database connection (db name, connection pool size)

• Operating systems

• IP address, port number, etc.

• URL for web application

• Software customization

• Roles of users

• Environment variable settings

17.) Proprietary : It has restricted usage and cannot be used for free

Free and open source software: THese softwares can be used and distributed for free.

18.) Copyright

19.) UML : unified modeling language. UML is a data modeling language, not a programming language. Merits a

20.) MYSQL

21.) A webserver is a computer program that accepts HTTP requests and return HTTP responses with optional data content. It can also be used to denote the computer system that performs the above operation. Web Application is an application that is served to the user by using a web server.

Eg: Web server, Apache Tomcat, JBoss EAP

Web application: Facebook, Twitter

22.) Httpd is a software program that runs in the background of a web server and waits for the incoming server requests. The daemon answers the request automatically and serves the hypertext and multimedia documents over the internet using HTTP. HTTP itself is a set of protocols that provides guidelines for client-server communication using uniform interface such GET, PUT methods etc.

The ‘d’ stands for Daemon.

23.) In server side processing the application receives the dynamic web page page request and performs the processing necessary to create the dynamic web page and sends the generated web page to the client

Client side involves some processing needs to be done by the browser, either to form the request for the dynamic web page or to create or display the dynamic web page.

Eg. Server side: Nodejs, ASP .NET

Client side: JavaScript

24.) Dynamic Web Pages: Dynamic web pages are those whose contents can change based on the user input and instant of time. Each website page does not actually exist but is created on the fly.

Static web pages: Static pages are pages that actually exist on the server. The code/content for each page is exists . Change must be made manually.

25.) Server Stack: A server stack is the collection of software that forms the operational infrastructure on a given machine. An Example would be the MEAN stack that uses Node.js server engine along with MongoDB in the back end while the client is handled using AngularJS.

Optional Questions:

1. Stored as binary numbers
2. Assembly level language
3. 5 generations:
   1. Machine level
   2. Assembly level
   3. High level
   4. Very high level
   5. Natural level
4. LEAN Model
   1. LEAN model was first used by Toyota.
   2. It is a systematic method for removal of unnecessary things that exist in a manufacturing system.
5. CMM stands for Capability Maturity Model. Its purpose is to provide a benchmark for measuring Software process optimization. It is NOT a SW project management model.
6. Yes a server stack can run without a client stack because, it is independent of the client stack as client stack will interact using HTTP protocol with the server.
7. CSS file is used for styling and layout of the web page. Html file can have multiple css file. Its advantage is to provide separation of concerns between the content of the page and its styling.
8. Stateless means the server does not contain any information regarding the clients of the system. It is decoupled from the clients. In stateful session between multiple HTTP requests of client-server, the server maintains information about the clients state.