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CSE-321 (Software Engineering)
Final Examination Summer-2022

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1.A

Ans to the Qs no: 1.A

Software Engineering:- Software Engineering is the Process of analyzing user needs and designing Constructing and testing end-user Application that will satisfy these needs through the use of Software programming language. it is the Application of engineering principle to software development.

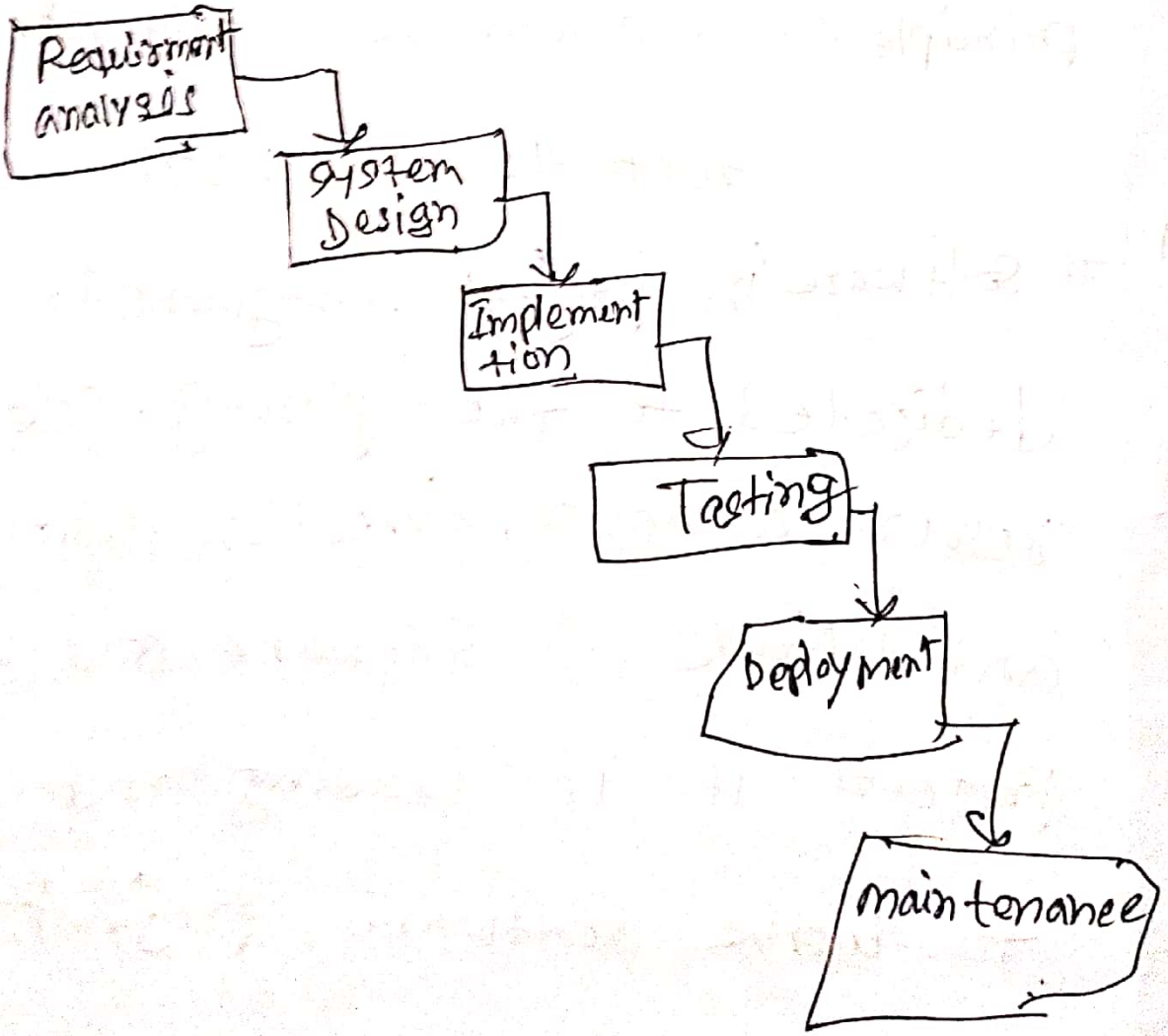
Ans to the Qs no: 3.A

3.A

Software in project Managment is a dedicated to the planing, Scheduling, resouree allocation, execution, tracking and delivery of Software. and web Projects. it is leading and planing to work Software project.

Ans to the Qs no: 1.B

1.B **Waterfall model:-** The waterfall model was the Process model to be Introduced it is also refted to as a life cycle model. it is very simple to understand and use. in a water fall model each phase must be Completed can begin and ther is no overlapping in the phases.



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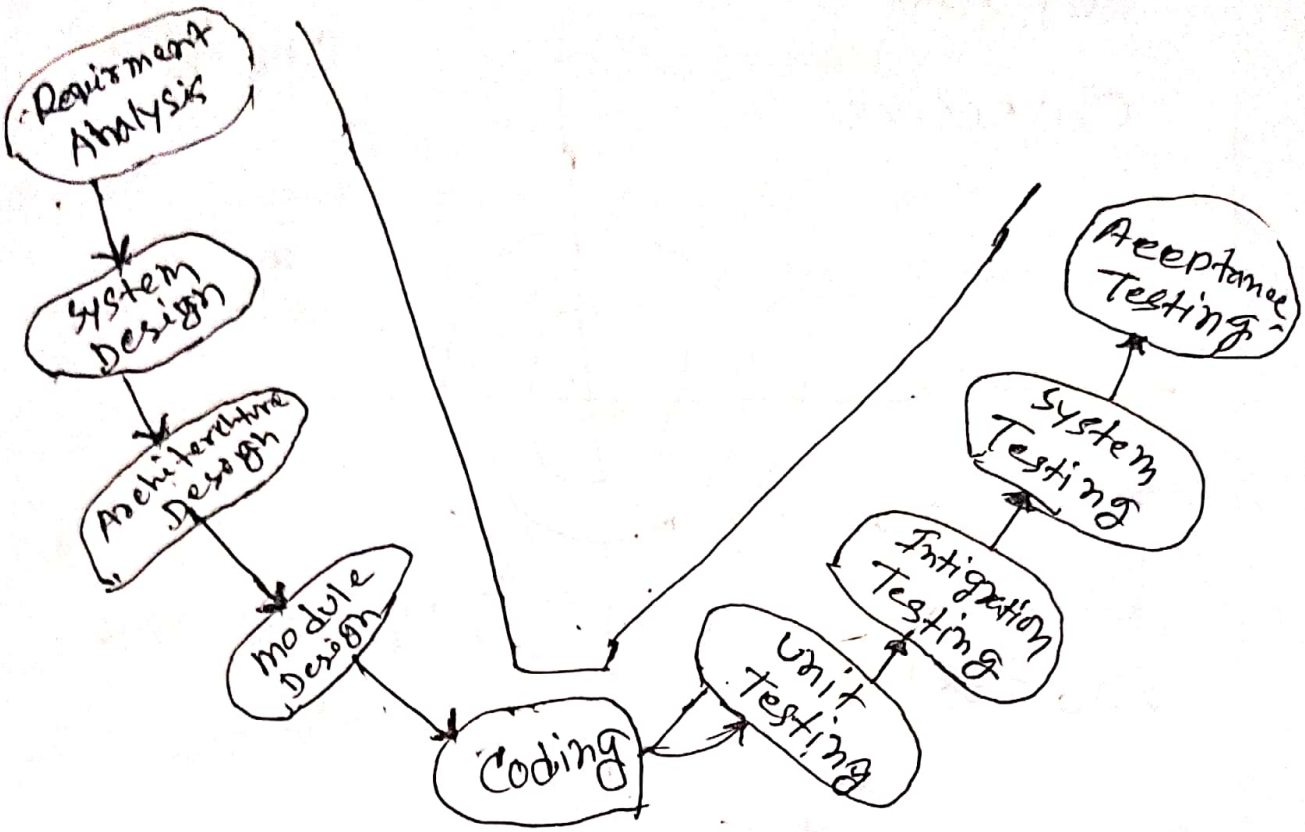

Bussiness Requirment Anysis :- This is the first Phase in the development cycle where the product requirments are understood from the customers.

System Design :- Once you have the clear and detailed product requirments. it is time to Design the Complet system.

P.04 Module Design:- In this phase, the detailed interna design for all the system modules is specified. It is important that the Design the system.

Coding phase:- The Actual coding of the system modules designed in the design phase it taken up the coding phase.

Unit Testing:- Unit Test Designed in the module design phase are executed on the code during this validation phasesed.

Integration Testing:- it is assoeited with the Architectural Design phase. and Performanee.

System Testing:- system Testing is directly assoeited with the system design phase.

Aeceptanee Testing:- it is assoeiated with the bussiness requirements anlysis phase and involves testing the product in user environment.

Q.06 Validation process :- Validation is the process of checking whether the software product is up to the mark or in other words product has high level requirments. it is the process of checking the validity of the product. it checks what we are developing is the right product. it is the validation of a actual and expected products.

=> Black box testing
=> White box testing
=> Unit testing
=> Integration testing.

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* Ans to the QS no: 1.c *

1.c

Characteristics of SRS:- Software Requirment Specification (SRS) is a document that completly describes what the proposed software should do without describing how the software will do. SRS Floware given below

(i) Correctness:- User review is used to ensure the correctness of requirments stated in the SRS.

(ii) Completeness:- its indicates every sense of completion including the numbering of all the pages, resolving the to be determined part to as much extent.

(iii) Consistency of Requirments in SRS a said to be consistent if there are no conflicts between any set of Requirments.

Ranking Stability:- there should be a criterion to classify the requirements stated have only one interpretation, Some of the ways to prevent.

modifiability:- SRS should be made as modifia as possible and should be capable of easily accepting changes to the system to some extent.

Testability:- SRS should be written in such a way that it is easy to generate test cases and test plans from the document.

verifiability:- SRS is verifiable if there exists a specific technique the mesure the extent to which every requirments.

Q. 06

✱✱ Ans to the Q5no: 2.A ✱✱

2.A Catagories of Software maintenance are below:

(I) Corrective Software Maintenance
(II) Adaptive software Maintenance
(III) Perfective software Maintenance.
(IV) Preventive software Maintenance.

Corrective:- It maintenance is what one would typically associate with maintenance of any kind. Correct Software Maintenance addresses the errors and faults within Software Application that Could Impact various parts of your software

Adaptive:- It is becomes important when the environment of your Software changes. this can be brought on by changes to the operating system, hardware, software, dependence, cloud Storage, Updating Service, making modification to vendors or Changing payments Process.

Perfective:- perfective software focuses on the evolution of requirments and features that exist in your system, As users interact with your Applications, they many notice things that you did not or suggest new features that they would like as part of the Software.

Preventive:- Preventive Software Maintenance helps to make changes and adaptations to your Software so that it can work for a longer period of time. The focus of the type of maintenance is to prevent the deterioration of your Software as it Continious to addapt and change.

* Ans to the Qs no: 2.B *

2.B # Difference between Black box and White box testing:-

Black box testing:- (1) It is a way of Software testing in which the internal structure or the program.or the hidden and nothing is know about it

(II) it is mostly done by software testers.

(III) No knowledge of Implementation in needed.

(IV) It can be refferd to as outer or external software testing.

(V) it is a functional test of the Software.

(VI) no knowledge of programming is required.

(VII) it is a behavior testing of the Software.

(VIII) it is also called closing testing.

(IX) it is the least time consuming.

(X) it is not suitable for algorithm testing.

(XI) Can be done by trial and error ways and methods.

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White box testing:- (I) It is a way of testing the Software in which the tester has knowledge about the internal structure or the program of the Software.

(II) It is mostly done by Software developers.

(III) Knowledge of Implementation is required.

(IV) It is the inner or the internal software testing.

(V) It is a structural test of the Software.

(VI) This type of testing of software is started after a detailed design document.

(VII) It is the logic testing of the software.

(VIII) It is also called clear box testing.

(IX) It is most time consuming.

(X) It is suitable for algorithm testing.

(XI) Data domains along with inner or internal boundaries can be better tested.

* Ans to the Qs no: 2.c *

2.c **type of documents in SQA :-**

(I) purpose section.

(II) reference section.

(III) Software Configuration management section

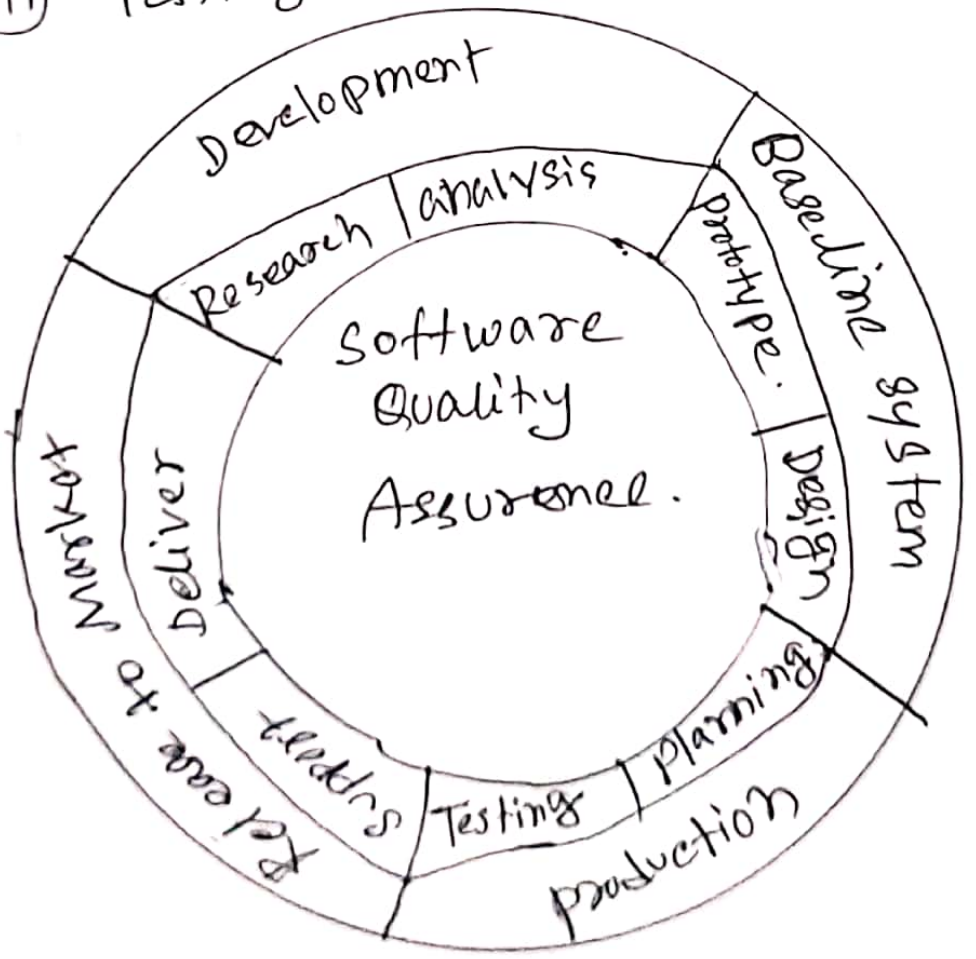
(IV) problem reporting and Corrective action section.

(V) Tools technologies and Methodologies section

(VI) code Control section.

(VII) Record, Collection, Maintenance and retention section

(VIII) Testing methodology :-



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** Ans to the Qs no. 3-B **

3.B

Role of project Manager:- There are many roles of a project Manager in the development of software

Leder:- A project must lead his team and should provied team direction to make them understand what is expected from all of them.

Malium:- The project Manager is a Medium between his clients and his team. He must coordinate and transfer all the appropiate information from the clients to his team and project to the senior Management.

Mentor:- He should be there to guide his team at each step and make sure that the team has an attachment.

Tracking the progress:- Manager should keep an eye on the progress of the project.

Documenting report:- The Manager prepares the Documentation of the project for future purpose the report contain detailed of the product or various techniques. (Etc)

Responsibilities of Project Manager:- Project planning is undertaken immediately after the feasibility study phase and before the starting of the requirments.

(I) managing risk and issues

(II) Create the project team and assigns task to several team members.

(III) Activity planning and sequencing.

(IV) monitoring and reporting progress.

(V) Modifies the project plan to deal with the situation.

(VI) Cost estimation need for project

(VII) Time estimation need for project

(VIII) Team structure and staffing plans are made.

(IX) Scheduling after the completion and estimation the project.

* Ans to the QS no: 3, @ *

3@ Iterative model advantage and disadvantages:

advantages: (I) some working functionality can be developed quickly and early in the life cycle.

(II) Result are obtained early and periodically.

(III) parallel development can be planned.

(IV) Progress can be measured.

(V) Less costly to change the Requirments.

(VI) Testing and debugging during smaller is easy.

(VII) Easier to manage risk. part is done first.

(VIII) Risk analysis is better

(IX) Its support Changing requirements.

(X) Initial operating time is less.

(XI) Better suited for large critical projects.

(XII) Risk, challege, identified from each Increment can be utilized.

(XIII) During life cycle the software is produces good feedback.

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Disadvantages of Iterative Model:-

(i) More resources may be required.

(ii) Although the cost of change is less, it is not very suitable for changing requirements.

(iii) More Managment attention is required.

(iv) Defining increment may require a definition of Complete system.

(v) Not Suitable for Smaller projects.

(vi) Managment Complexity is more.

(vii) The end of the project may not be known which is a risk.

(viii) Highly skilled resources are required for Risk analysis.

(ix) The project's progress is highly dependent upon the risk analysis phase.

* Ans to the QS no: 4.A *

4.A **Software Quality:-** Software quality product is defiend in terms of its fitness of purpose, that is a quality products does pricesly what the user want it to do. for software products the fitness of ouse is generally explained in terms of satisfaction with the requirements, laid in the document.

Importance of quality: (I) **Save time and money:-**

The advantages of having system and process in place during development is that they anticipate and prevent most bugs and flaws from developing in the first place..

(II) **maintaing product quality:-** QA process are designed to ensure that software product work reliably and is stable. In addition, there are Quality Control tests designed to the test the functionality, performance, security, useability and activity and more.

Ensure Security:- Whilst a software program might perform all functions as intended, it may not nesasraby be completely secure. if there is any weakness in its defenses, the product and users data could be compromised. as aresult, the final product has minimal defects and guranteed to work

Protects Reputation:- The quality of your software can reflect on your company and brand. By relesing a high-quality product thats offers excellent features with comprehsive security. you can build a positive reputation for your busseness.

Customer Satisfaction:- In order to ensure satisfied customers, your product need to fullfill their needs. It should have all the features required and work properly. the role of QA is exactly that to make sure that the software gives your customers exactly what they expect.

* Ans to the Qs no: 4.B *

4.B Describe to SQA Activities :- (1) Software quality Assurance Activities :- SQA is the process of evaluating the quality of a product and enforcing adherence to Software Product Standards and Procedures. It is an umbrella activity that ensures Conformance to Standards and procedures throghout.

(II) Formulating quality :- one of the Tasks of SQA is the formulation of a quality managment plan. The quality managment plan identifiese the quality product to be developed.

(III) Applying Software Engineering :- The Application of Software engineering techniques helps the Software designer to achieve high-quality specification. The designer gather information using the techniques. such as Interview and Fast.

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Controlling Changes:- This task combines human procedures and Automated tools to provide a mechanism for change control.

Performing SQA Audits:- SQA Audits scrutinize the Software development process by comparing it to established processes.

Measuring Impact Change:- Change is invalid in the SDLC. the change needs to be measured and monitored, changes in the product or process are measuring software quality controling.

Process Monitoring:- Process Monitoring ensures that appropiate steps to follow the product development procedures and carried out.

Multi-tiered Testing:- Software testing is a critical task of SQA activity. which aims at error detections. Unit testing is the first level of Software testing section in SQA.