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Module : bs (SE)

Subject : Software engineering

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Section : A

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(SE)

Topic

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Q3.1

There are three main types of software maintenance

- (a) Corrective maintenance or fault repair
- (b) Adaptive maintenance or Environmental adaptation - changing the software to adapt it to changes in its environment p.g. changes to other software.
- (c) Perfective maintenance or functionality addition. This involves adding new functionality or features to the system.

They are sometimes difficult to distinguish because the same set of changes may cover all three types of maintenance.

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Q3.1

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(S.E)

For example a reported fault in the system may be repaired by upgrading some other software and then adapting the system to use this new version (Corrective-adaptive)

The new software may have additional functionality and as part of the adaptive maintenance, new features may be added to take advantage of this.

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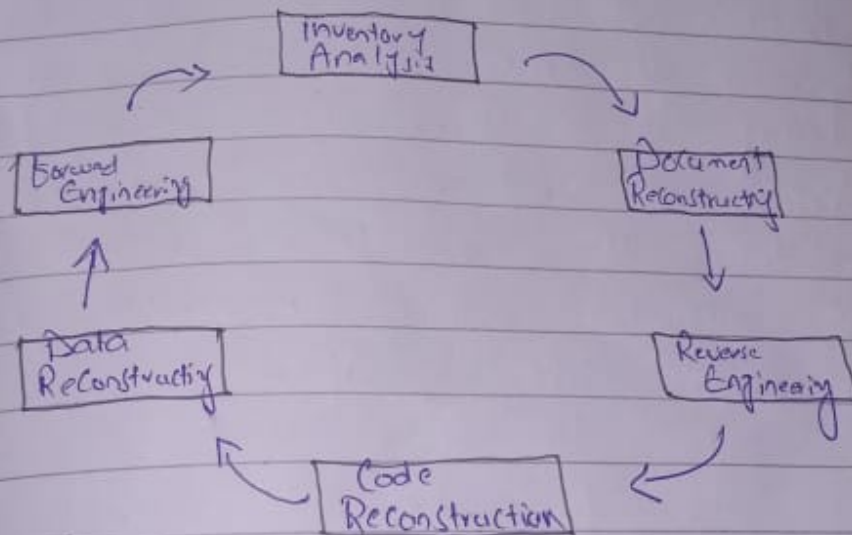
(Q3-(a))

System - Re - Engineering is the examination and alteration of a system to reconstitute it in new form. Principles of Re-engineering when applied to the Software Development Process is called Software re-engineering. It affects positively at Software Cost, Quality, Service to the customer and Speed of delivery.

Re - engineering Cost factors;

- \* Quality of the Software
- \* Tool Support availability for engineering
- \* Extent data conversion which is required
- \* Availability of expert's Staff for re-engineering.

Diagram



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Q2 -1

\* Testing can only detect the presence of errors, not their absence because the main goal of the testing is. Testing is a part of broader process of software verification and validation. It consists of a set of activities, where the tester's try to make software behave anomalous in order to detect or anomaly to be later fix. Testing can not demonstrate the faults other than specified in every circumstance. It is always possible that a test have overlooked could discover further problem with the system.

Q 2-(a)

(i) Unit testing

Unit testing is defined as a type of software testing where individual components of a software are tested. Unit testing of software product is carried out during the development of an application. Individual

Component may be either an individual function or a procedure.

(ii) System Testing.

It is a level of software testing where a complete and integrated software is tested. Purpose of this test is to evaluate the system's compliance with the specified requirements.

Q2-2

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Acceptance Testing



System Testing



Integration Testing



Unit Testing

### ③ Black Box Testing

It is a method of software testing that examines the functionality of an application without peering into its internal structure or workings. This method of test can be applied virtually to every level of software testing. Unit, Integration, System, acceptance.



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Q) White Box Testing

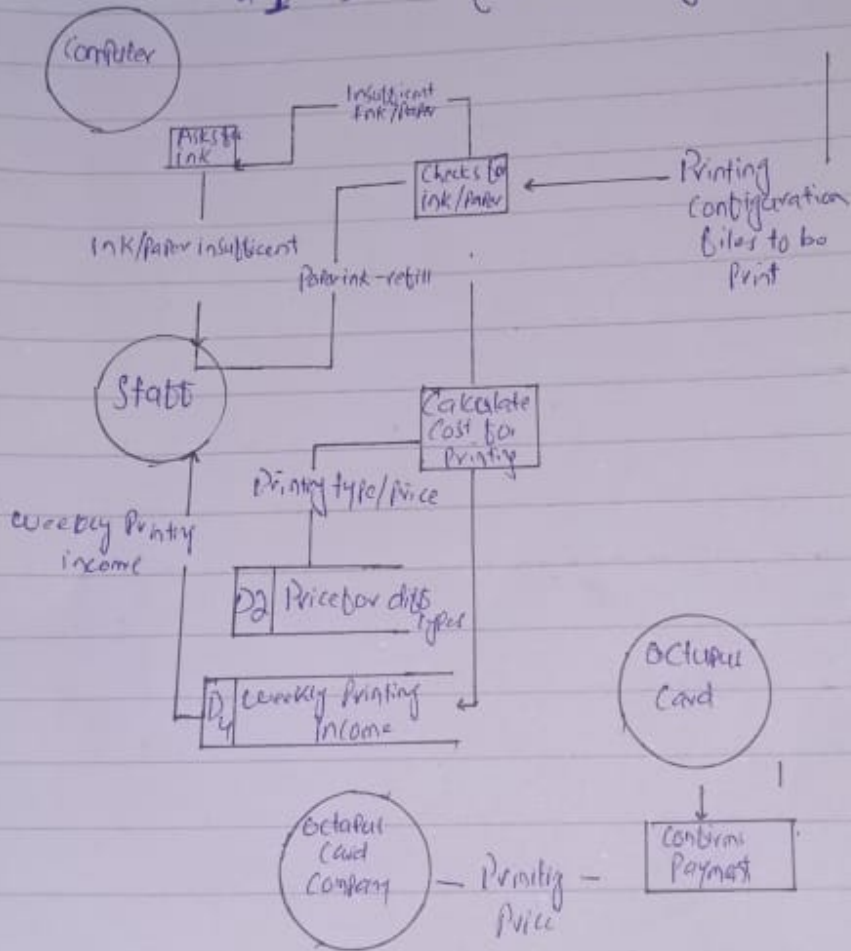
also known as Clear Box testing, Open Box testing, Glass Box testing etc, it is a software testing method in which the internal structure/design/implementation of the item being tested is known as to the tester

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Sec 'A'

Q1 - 1 (Context diagram)

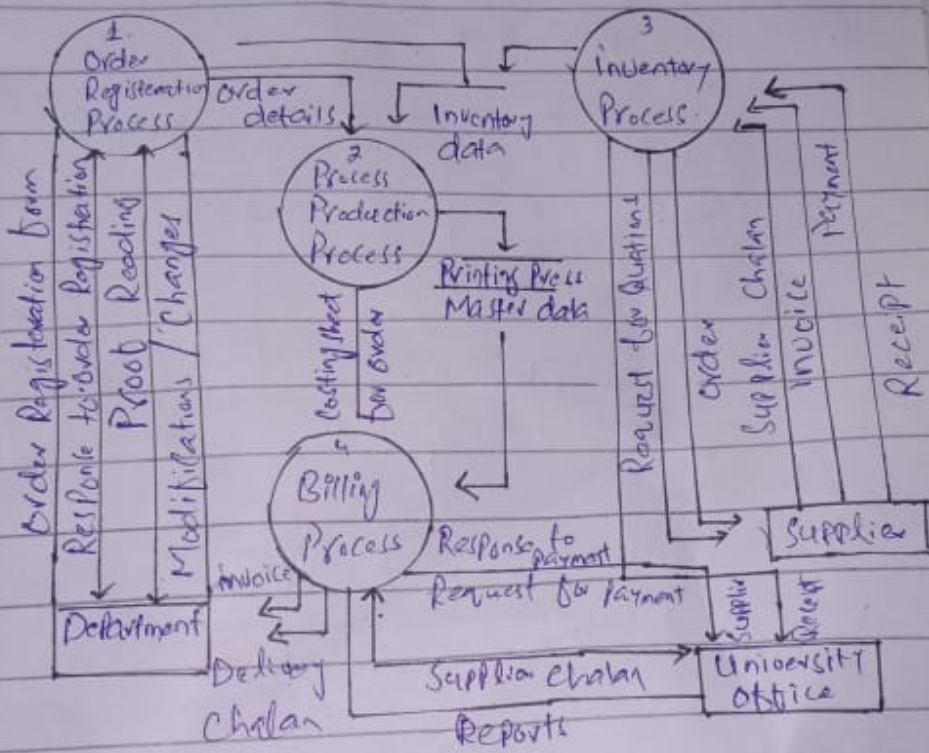


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~~Q1-2~~ Q1-2 <sup>thor</sup>



Q1-2

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~~Q1-1~~ ~~HW:1~~

\* Level 2 DFD for ordering Registration Process, Press Production

