



I. Attempt any 5

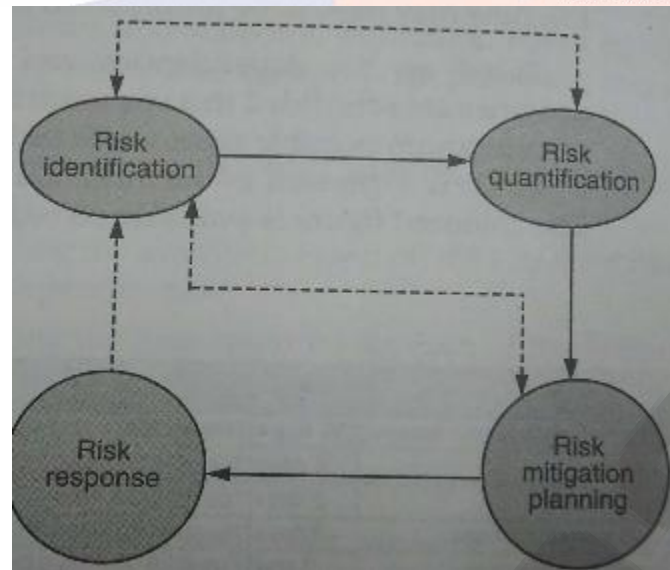
(2 Marks each)

A. What are differences between Black box testing and White Box Testing?

#	Black Box Testing	White Box Testing
1	Black box testing is the <u>Software testing method</u> which is used to test the software without knowing the internal structure of code or program.	White box testing is the software testing method in which internal structure is being known to tester who is going to test the software.
2	This type of testing is carried out by testers.	Generally, this type of testing is carried out by software developers.
3	Implementation Knowledge is not required to carry out Black Box Testing.	Implementation Knowledge is required to carry out White Box Testing.
4	Programming Knowledge is not required to carry out Black Box Testing.	Programming Knowledge is required to carry out White Box Testing.
5	Testing is applicable on higher levels of testing like System Testing, Acceptance testing.	Testing is applicable on lower level of testing like Unit Testing, Integration testing.
6	Black box testing means functional test or external testing.	White box testing means structural test or interior testing.

B. Describe briefly various Risk Management steps in testing.





Common ways to Identify Risks in Testing:

1. Use Checklists
2. Use of organizational history and metrics
3. Informal networking across the industry

Risk Quantification:

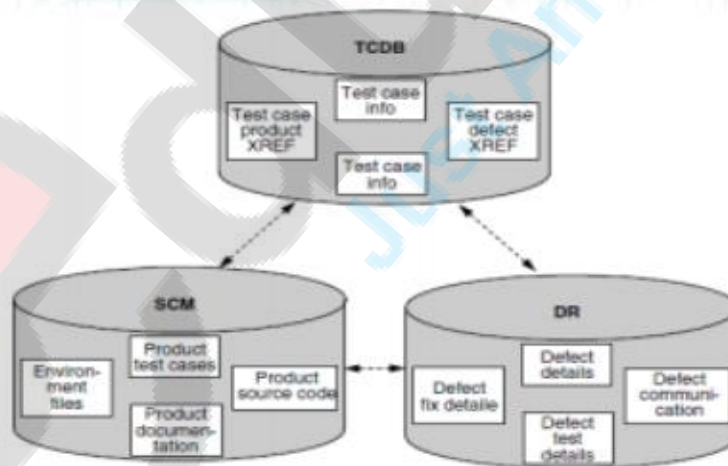
Expressing the risk in numerical term. Deals with two component Probability and impact

Risk Mitigation:

Deals with identifying alternative strategies to combat a risk event, should that risk materialize.

C. Explain essential elements in Test Infrastructure Management.

TCDB, defect repository, and SCM repository should complement each other and work together in an integrated fashion as shown in Figure



D. What are the features to be Prioritizing for Testing?

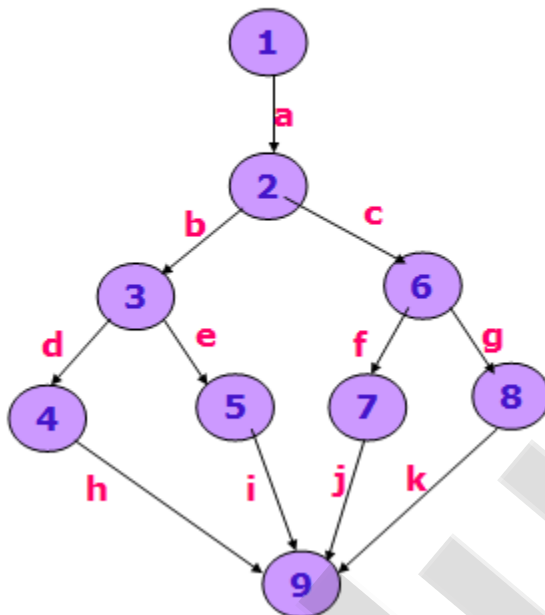
1. The usage frequency of a function
2. Risk of failure:
3. The visibility of a failure





4. The priority of the requirements
5. The quality characteristics
6. The complexity of the individual components
7. A high project risk

E. Explain in detail Statement Coverage



Every statement ( node ) is executed at least once

- In this test case the edges of the graph must be traversed in the following order:( 4 test cases )

1. a, b, d, h
2. a, b, e, i
3. a, c, f, j
4. a, c, g, k

F. Define test automation? Explain the benefits of using automation in testing?

*Developing software to test the software is called test automation*

*Automation saves time as software can execute test cases faster than human do*

*Test automation can free the test engineers from mundane tasks and make them focus on more creative tasks*

*Automated tests can be more reliable*

*Automation helps in immediate testing*

*Automation can protect an organization against attrition of test engineers*

*Test automation opens up opportunities for better utilization of global resources*

*Certain types of testing cannot be executed without automation*







## II. Attempt any 1 Question

(5 Marks)

- A. Explain Incident management in detail with the purpose of an incident status model.

Incident reporting is also referred to as problem, anomaly, or failure reporting.

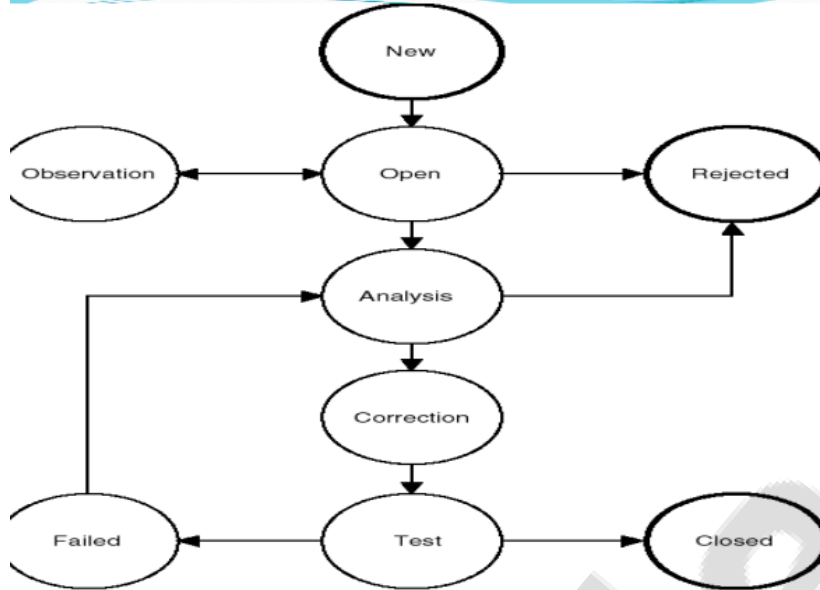
Failure severity	
Class	Description
1 – FATAL	System breakdown, possibly with loss of data. The test object cannot be released in this form.
2 – VERY SERIOUS	Essential malfunctioning; requirements not adhered to or incorrectly implemented; substantial impairment to many stakeholders. The test object can only be used with severe restrictions (difficult or expensive workaround).
3 – SERIOUS	Functional deviation or restriction ("normal" failure); requirement incorrectly or only partially implemented; substantial impairment to some stakeholders. The test object can be used with restrictions.
4 – MODERATE	Minor deviation; modest impairment to few stakeholders. System can be used without restrictions.
5 – MILD	Mild impairment to few stakeholders; system can be used without restrictions. For example, spelling errors or wrong screen layout.

Fault priority	
Priority	Description
1 – IMMEDIATE	The user's business or working process is blocked or the running tests cannot be continued. The problem requires immediate, or if necessary, provisional repair ("patch").
2 – NEXT RELEASE	The correction will be implemented in the next regular product release or with the delivery of the next (internal) test object version.
3 – ON OCCASION	The correction will take place, when the affected system parts are due for a revision anyway.
4 – OPEN	Correction planning has not taken place yet.





## Incident Status

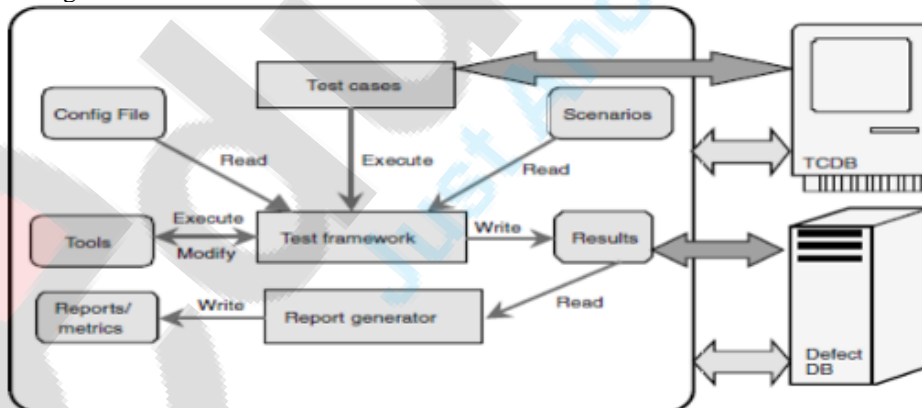


- B. Generate decision table based test cases for web based company selling computers (CPU), Printers (PR), Monitors (M) and additional Memory (RAM) of the purchase order:
- M20 and M23 can be purchased with any CPU or as a standalone item but M30 can only purchase with CPU3
  - Purchase of CPU1 gets RAM256 upgrade and PR1 And RAM512 are available free with the purchase of CPU2 or CPU3
  - The RAM 1GB upgrade and a free PR2 is available when CPU3 is purchased with Monitor M30
  - Monitors and Printers except for M30, can also purchase without purchasing any CPU.

### III. Attempt any 1 Question

(5 Marks)

- A. Explain in detail Design and Architecture for test automation.



- B. Given is the function calculate price(), draw the control flow graph for this function and write the test cases for this function using statement coverage, branch coverage and path coverage:

```

double calculate price( double base price, double specialprice, double extra price, int extras,
double discount) {
    double addon_discount;
    double result;
    if (extras >= 3)
        addon_discount = 10;
}
  
```



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```
else if (extras >= 5)
    addon_discount = 15;
    else addon_discount = 0;
if (discount > addon_discount)
    addon_discount = discount;
result = baseprice /100.0*(100-discount)+ specialprice+extraprice/100.0*(100-
addon_discount);
return (result);}
```

\*\*\*In the middle of difficulty lies opportunity –by Albert Einstein \*\*\*



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