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SOFTWARE TESTING
ASSIGNMENT

Group - A

- Ans 1. C
Ans 2. B
Ans 3. C
Ans 4. B
Ans 5. C
Ans 6. B
Ans 7. D
Ans 8. D
Ans 9. C
Ans 10. B

Group - B

- Ans 1. Min. no. of test cases for ~~path~~ path testify
= (cyclomatic complexity)

Also, cyclomatic complexity = No. of iteration statement + no. of selection statement + 1

No. of decision statements = 50

No. of iteration statement = 40

\therefore minimum no. of test cases required = $40 + 50 + 1$
= 91

→ fog index signify the ~~the~~ number of years of formal education that a person should have, in order to be able to comfortably understand that document.

→ Also fog index is a metric that has been designed to measure the readability of a document and important feature required for external documents in paper understandability by the category of user for whom the document is designed and for achieving this fog index is very useful.

Ans 2.

the

a) Code Inspection - In this, code is examined for the presence of some common programming errors. This is in contrast to the hand simulation of code execution carried out during code ~~walk~~ walkthrough.

Some classical programming errors :-

- Non-terminating loops.
- Incompatible assignments.
- Index out of bound etc.
- Use of incorrect logical operator.

b) Code Walkthrough :- It is an internal code analysis technique. In this technique a module is taken up for review after the module has been coded, successfully compiled and all syntax errors have been eliminated. In this basically team members select certain cases and simulate execution of the code by hand.

• The equivalence classes are as follows :-

- i) Occur 1 time ii) Occur 2 times iii) Occur 3 times iv) Occur 4 times
- v) Occur 5 times vi) Occur 6 times vii) Occur 7 times viii) Occur 8 times
- ix) Occur 9 times x) Occur 10 times xi) Occur 11 times xii) Occur 12 times
- xiii) Occur 13 times xiv) Occur 14 times xv) Occur 15 times xvi) Occur 16 times
- xvii) Occur 17 times xviii) Occur 18 times xix) Occur 19 times xx) Occur 20 times

Now selecting 1 representation value from each equivalence class, we get the required equivalence class test.

{ ("ant", "ant"), ("ab", "abb,ab"), ("a", "aaab"), ("b", "babbb"),
 ("c", "caccac"), ("d", "dddddcd"), ("a", "aaaaaaaaa"),
 ("l", "lalllllll"), ("a", "aaaaaaaaa"), ("b", "babbbbabbbb"),
 ("d", "ddddddddddddd"), ("c", "cccccccccccc"),
 ("f", "ffffffffffffff"), ("a", "aaaaaaaaaaaaa"),
 ("b", "bbbbbbbbbbbbbbb"), ("e", "eeeeeeeeeeeee"),
 ("g", "ggggggggggggggg"). }

Ans 3. Integration can be phased or incremental.

⊛ In incremental integration testing only one new module is added to the partial system each time whereas in phased a group of related modules are added to the partially integrated system.

→ phased integration, ~~req~~ require less number of integration steps compared to the incremental integration approach.

→ it is easier to debug it ~~a~~ using incremental testing rather than phased.

A software ~~product~~ product is normally tested in 3 levels or stages.

i) Unit testing

↳ unit of program are tested.

ii) Integration testing.

↳ after testing all the unit individually, the units are gradually integrated and tested after each step of integration.

iii) System testing:-

↳ finally the fully integrated system is tested.

Integration & system testing is known as the testing in large.

• The basic difference b/w top-down and bottom-up integration testing is that the top-down integration testing utilizes the stubs for calling the sub-modules sub-ordinated to the main function while in bottom

up integration testing the stubs ~~are~~ are not needed instead driven are used.

→ In top-down main function is written at first then the subroutines are called from it whereas in bottom-up modules are created first then are integrated with the main function.

• ~~Test~~ Test summary report specifies:

- i) ~~how~~ ^{how} many test been applied to a subsystem.
- ii) ~~how~~ ^{how} many test ~~are~~ are successful.
- iii) how many have been unsuccessful, and the degree to which they have been unsuccessful