Roll No. 22i-2505

Quiz 1
Weight: 2%

Name Tayyab Kamran Sami

Q1. What do we mean when we say that software quality assurance (SQA) is an umbrella activity?

It means it is not restricted to a specific phase of the development cycle. It is carried out throughout the life cycle at every phase i.e Requirements, Design ect

Q2. What is the relationship between a bug, defect, and fault?

A Fault is an Went. Error in

Q3. A report produced by a hospital's management system shows a list of patients currently admitted in the hospital's general ward. This report is 80% complete but 100% accurate. What does this mean?

This means that the hospital Management system Report in Incomplete but accurate.

Q4. Explain the difference between Authentication and Authorization.

Authentication means the mechanism we secure our application so that non related people cannot access our application. The main Authentication mechanisms are Login and Signup. Meanwhile Authorization is the mechanism through which we determine which user can perform which tasks. Like user Admin is not authorized to Read or update the System users. The authorization mechanism prevents users to do admin level tasks. In this way each role in the system can we verified and specific actions are authorized.

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Quiz 2
Weight: 2%; CLO 1

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Q1. Why do we need a <u>comprehensive</u> SQA system?

we need it because it is must to ensure quality at
each and every life cycle step as the pre cost invested
in quality saves us from large software failure cost and inaccurate
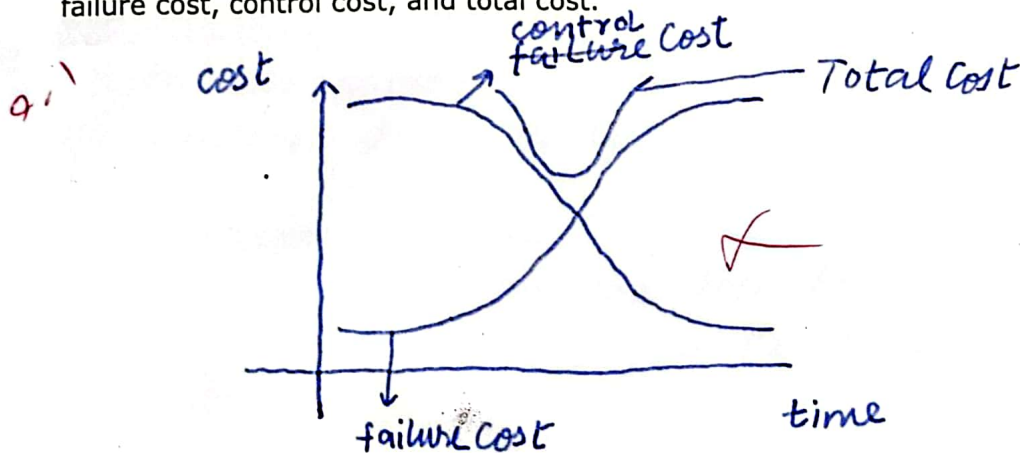software.

Q2. What is the main purpose of the pre-project category of components of the SQA system?

It deals with the contract and ensuring the quality of
the contract. Also it deals with lifecycle and development
planning. which helps us better understand the deadline ect.

Q3. How does using templates (e.g. a template for SRS) lead to better software quality?

Templates help us as we donnot have to reinvent the wheel
we can reuse efficient templates which are quality wise
also ok. If we write it from scratch it might not be
that efficient and there will be bugs in it too.

Q4. Draw a thoroughly labelled diagram which illustrates the relationship between failure cost, control cost, and total cost.

SRS Template :-

Using

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Quiz 3
Weight: 2%; CLO 1

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Q1. <u>Explain</u> why software testing should be carried out by third parties instead of the original programmers.

Software Testing should not be done by orignal programmers as they will not test the software with the intention of finding as much bugs as possible. There will be a biasness there and due to this it is good that third parties test the software. As no one wants to uncover faults in his own software.

Q2. Why is Big Bang integration testing not suitable for professional software?

Big Bang Integration is not suitable as finding the location of error when the testing the whole system at once is very hard. It is suitable that software must be tested in small then large.

Q3. Compare and contrast stubs and drivers in the context of integration testing.

Comparison (Similarity):
Both are dummy modules used to test other modules during integration testing.

Contrast (Difference):
Dummy Modules used in the top-down testing is known as Stub. While Dummy Modules used in Bottom up Testing are Drivers.

Q4. What is the purpose of smoke testing?

Smoke testing is done for just as the overview testing it is also known as {Moti Moti} Testing. In this we test the hardware of the System. And just checks if it works fine. with ?

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Quiz 4
Weight: 2%; CLO 3

```cpp
int main(){                          1
  // Defining dimensions of the original matrix.
  int N=4, M=3;

  // Declaring it & Initializing values.
  int mat[N][M]={
    {1, 2, 3},
    {4, 5, 6},
    {7, 8, 9},
    {10, 11, 12}
  };

  // Declaring transpose matrix with inverted
  // dimensions i.e. M * N
  int T_mat[M][N];

  // Assigning values accordingly.      2  3
  for(int i = 0; i < N; i++){        6
4→  for(int j = 0; j < M; j++){
      T_mat[j][i] = mat[i][j];       7
  }
}
                     8
  // Printing the transposed Matrix.
  cout<<"\nTransposed Matrix is -\n";
  for(int i = 0; i < M; i++){       10
11  for(int j = 0; j < N; j++){    13
      cout<<T_mat[i][j]<<"\t";       14
  }
  cout<<endl;    15
}

  return 0;
}        16
```
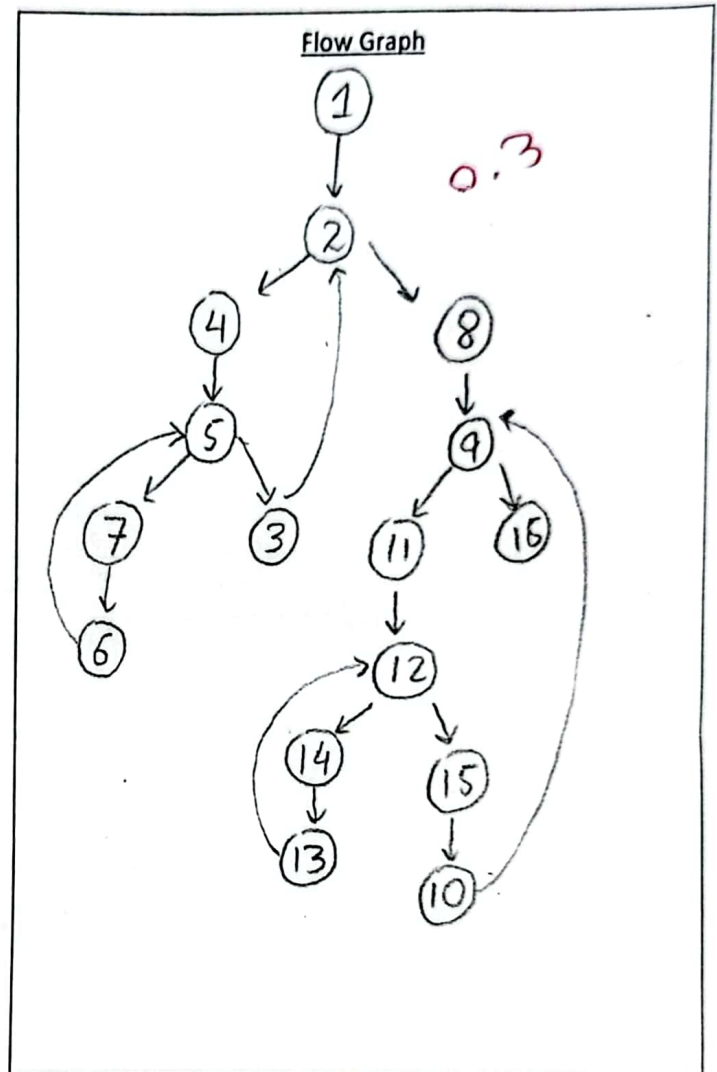
0.3

Flow Graph

0.2

The C++ function given above [Adapted from: https://www.scaler.com/topics/transpose-of-a-matrix-in-cpp/] finds and prints the transpose of a matrix.

a. Draw the flow graph of this function inside the box given above. Nodes must be annotated clearly on the code.

b. Calculate the cyclomatic complexity of this function using all three formulas:

0.1

Formula 1: $E - N + 2 = 19 - 16 + 2 = 5$

Formula 2: $P + 1 = 4 + 1 = 5$

Formula 3: $R = 5$

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Quiz 5
Weight: 2%; CLO 2

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Q1. What is the main difference between a baseline version and an intermediate version of a software configuration?

Baseline versions are the preplanned versions and they denote an important milestone. While the intermediate versions are unplanned and contains minimal change.

Q2. List any five factors used to evaluate an SCR.

1) How Urgent, 2)How Important, 3)How much Resources,

4) How much Effort, 5)How many SCIs are effected.

6) How much time.

Q3. What is the main difference between measurement and calculation? Support your theoretical answer with an example from the domain of software engineering.

Measurement is direct while calculation is indirect. Measurement is assigning some value/symbol on the basis of some attribute of an entity. while Calculation is performed on two m basis of measured thing. e.g we measure the lines of code in software but we calculate the defect density.

Q4. Which arithmetic operation(s) (i.e. addition, subtraction, multiplication, and division) can be performed on variables measured using each of the following measurement scales?

Nominal: It is qualitative so no arithmetic operation.

Ordinal: It is also qualitative so no arithmetic operations.

Interval: addition and substraction can be performed

Ratio: addition, substraction, multiplication & division.

Absolute: addition, substraction, multiplication & dividision division.