

# CITS5501 sample questions

## Question 1

You are asked to develop tests for a Java method, `stringSimilarity()`.

The signature and API documentation are as follows:

```
1  /** Return a measure of the similarity between two strings.
2   *
3   * Strings that are identical will return 1.0; other
4   * strings will return a number greater than or equal
5   * to 0.0, but less than 1.0, according to
6   * Formula 1.1 specified in Lowenberg et al (1956).
7   *
8   * @param s1 A string argument
9   * @param s2 A second string to compare against s1
10  * @return A number representing the similarity measure
11  */
12 public static double stringSimilarity(String s1, String s2)
```

Answer the following questions about the `stringSimilarity` method:

- Should the documentation for the method mention what happens when one or both of `s1` and `s2` are null? Why or why not? Justify your answer. (5 marks)
- Is it a precondition of the method that `s1` and `s2` must be Strings? Should this be mentioned explicitly in the documentation? Explain why or why not, justifying your answer. (5 marks)
- Give examples of a *failure* and a *fault* that one might find when testing the `stringSimilarity` method. Justify your answer, and explain why the two are different. (10 marks)

## Question 2

You have been asked to apply the *Input Space Partitioning* technique in order to develop unit tests for the `stringSimilarity` method.

- Explain briefly the steps you would take to apply the Input Space Partitioning technique. (5 marks)
- Work through those steps in order to derive at least two test cases for the `stringSimilarity` method. Explain whether any other parameters besides `s1` and `s2` need be considered. You need not exhaustively list every characteristic and partition you would use in the process, but should mention at least two characteristics. (10 marks)
- Based on your answer to (b), describe two test cases for the `stringSimilarity` method. If any *test doubles* might be needed, state what sort. (5 marks)

Clearly explain any assumptions you need to make when answering. If there is information you would need which is not given in the provided scenario, explain what it is.