

**The School of Computer Science & Software Engineering  
CITS 1220 Software Engineering**

***Sample 2009 Mid-semester Test***

Time allowed: 40 minutes

This test has 5 pages (including cover) and 6 questions.  
Each question is worth 5 marks, for a total of 30 marks

This test is worth a maximum of ten percent (10%) of your final mark in CITS1220 Software Engineering this year.

Write your answers, together with any working, directly onto the question sheet overleaf in the spaces provided. Provide brief answers of a few sentences.

*Fill in your details below, but **do not turn over this page** until you are asked to do so*

**Family Name:** \_\_\_\_\_

**Given Name: :** \_\_\_\_\_

**Student Number: :** \_\_\_\_\_

## QUESTION 1 [5 marks]

Complete Javadoc documentation for the following Java method from a `MobilePhone` class:

```
public void topUp(int amount) {  
    if (amount <= 0) {  
        throw new IllegalArgumentException(  
            "topUp amount must be greater than 0 cents");  
    } else {  
        credit = credit + amount;  
    }  
}
```

## QUESTION 2

[5 marks]

Sketch Java code to return the longest string from a given array of strings. For example, given `String[] name={"which", "word", "is", "the", "longest", "one"}` then `longest(name)` returns "longest" (since that has 7 characters).

```
public String longest(String[] names) {
```

```
}
```



## QUESTION 5

[5 marks]

```
public boolean inorder( int day1, int month1, int day2, int month2 )  
throws IllegalArgumentException
```

This Java method `inorder` accepts a date given by `day1` and `month1`, and compares that date with a second date given by `day2`, `month2`. The return value is true if `day1` of `month1` is earlier than `day2` of `month2` and false otherwise. An exception is thrown if either date is illegal (eg `day1=30`, `month1=2`).

Give a set of 5 to 8 test cases for the method `inorder`. Show the inputs and expected outputs for each test case. For each test, state whether it tests normal, boundary or exceptional behaviour.

**QUESTION 6**

**[5 marks]**

Summarise the information given by the UML class diagram below, using one or two sentences for each association between classes.

