

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI
FIRST SEMESTER 2017-18
CS/SS G514 OBJECT ORIENTED ANALYSIS AND DESIGN
MID SEM TEST (CLOSED BOOK)

DATE : 13-10-17

TIME : 11:00-12:30PM

MARKS:25

1. Consider the following (deliberately imprecise) brief.

You are developing a problem reporting and management system for TrueSoft, a company that sells many different software products. The system must allow users to report problems, but only if they have valid product ID entitling them to support for the product in question, or TrueSoft All-product Support subscriptions that have not already been used to report more than 2 problems. It must allocate each problem to a member of support staff who has the appropriate training for the problem. If the support staff member who has been allocated a problem is unable to solve it, it must be passed on to a more experienced staff member. If the support staff member signals that s/he believes the customers' problem to be a bug, s/he should be prompted for appropriate details to construct a bug report for TrueSoft 's existing internal bug reporting system. Problems are given an "urgency rating" between 1 and 10 using a complex algorithm combining the status of the customer, the nature of the problem, and the product. If a problem's base urgency rating is 5 or more, then it increases by one point every working day until it is resolved. Problems with urgency rating greater than 7 must be assigned to a set of support staff members in different time zones so that work on the problem can continue round the clock.

Use the CRC card method to construct a suitable set of classes with their responsibilities and collaborations. Draw a Domain Model for the above System. [7]

2. Do you know that it costs a lot of money to get a 'Certified Java Programmer' certificate? It could cost you thousands of euros. Let's imagine we will develop a browser-based training system to help people prepare for such a certification exam.

A user can request a quiz for the system. The system picks a set of questions from its database, and compose them together to make a quiz. It rates the user's answers, and gives hints if the user requests it.

In addition to users, we also have tutors who provide questions and hints. And also examiners who must certify questions to make sure they are not too trivial, and that they are sensible.

Make a use case diagram to model this system. Make use of <<include>>, <<extend>>, specialization wherever possible. Work out two of your use cases. Since we don't have real stake holders here, you are free to fill in details you think is sensible for this example

Use case:

Primary actor:

Secondary actors:

Pre-condition:

Post-condition:

Main flow:

[4+4=8]

3. Name any two artifacts that we start in first two phases of Unified Process. [2]

4. Why is UML an object oriented modeling approach ? Illustrate with examples. [3]

5. "In my company, we just make class models/diagrams. We don't do use cases". Do you agree that this would be a reasonable approach ? How about just doing use cases and we don't do class diagrams? [2]

6. State the steps in modeling the workflow in an activity diagram. [3]
