THE OPEN UNIVERSITY OF SRI LANKA
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE
B.Sc. DEGREE PROGRAMME – 2015/2016
CPU2140: SYSTEM ANALYSIS AND SOFTWARE ENGINEERING
NO BOOK TEST - 2
DURATION: **ONE HOUR ONLY (1HR)**

Date: 30th October 2016 **Time: 10.30am – 11.30am**

Answer ALL Questions.

1.

   a. Name four basic relationships defined in UML.

   b. Draw **class diagrams** for each sentence given below by identifying all relationships with appropriate multiplicities, attributes and operations.

      i. A cricket club is made up of at least two cricket teams.
      ii. A cricket team is composed of eleven to fourteen players. A team has a name and a record. Players have a role and a position.
      iii. Cricket teams play matches against each other. Each match has a score and a location.
      iv. Teams are led by a coach. A coach has a level of approval and a number of years of experience.
      v. Coaches and players are people, and people have names and addresses.

2. Consider the following description about the process of an exam, which is conducted by a teacher.

   To conduct an exam, a teacher first informs the students about the exam date and the material to be covered. Then, the teacher prepares the exam paper, gets it copied by the examination division. Then hands it out to students on the exam date. The students write their answers to the exam questions and hand in their papers to the teacher. The teacher then gives the exam papers to the demonstrators, and let them to mark it. Once the teacher received the papers with the marks, the teacher records all marks and returns the papers to the students.

   Draw the **sequence diagram** for this process.

3. Consider the following description of an alarm clock.

   The clock shows the time and user can view it. The user can set the time by changing hours and minutes fields individually. It is possible to set one or two alarms. When an alarm fire, it will sound some noise. The user can turn it off, or choose to 'snooze'. If the user does not respond at all, the alarm will turn off itself after 2 minutes. 'Snoozing' means to turn off the sound, but the alarm will fire again after some minutes of delay. This 'snoozing time' is pre-adjustable.

   Draw the **use case diagram.**

4. Give two types of information about a problem that can be presented in an **activity diagram**.
5. List two disadvantages of component based software engineering.
6. List two advantages of Rapid Application Development (RAD).
7. Name five practices that can be used in extreme programming.

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