EASTERN UNIVERSITY, SRI LANKA
SECOND EXAMINATION IN SCIENCE - 2003/2004 (Repeat)
SECOND SEMESTER (June/July, 2005)

CS 205 - Software Engineering Principles

Answer all Questions **Time Allowed: 1 Hour**

1.

(A)

i. Well-engineered software is defined as possessing four main attributes. List them, and identify four further attributes that a well-engineered software might posses. State clearly under what circumstances these attributes would be of importance.

ii. Describe briefly general models of software development.

iii. Draw a block diagram showing the different stages of software lifecycle in the *waterfall* model and describe its final stage.

iv. Explain clearly why the waterfall model of software process is not a true reflection of the activities that are involved in software development

(B) Explain how data flow diagram may be used to document a system design, and give guidelines to draw data flow diagrams.

2.

(A)

i. What do you understand by the terms ***cohesion, coupling*** and ***adaptability.***

ii. Explain why maximizing cohesion and minimizing coupling leads to mor maintainable systems.

(B)

i. Explain how the concept of an object in the Object-oriented model differ from the concept of an entity in the Entity-relational model.

ii. Using examples explain the difference between an object and object class.

iii. In a library, the following books are available:

- Ken Follet, Pillars of the Earth, 1990.
- Noah Gordon, The Madicus, 1987.
- Nicholas Evans, The Horse Whisperer, 1995.

For every library member, name, address, birth date and its number are saved. Hans Muller, born 1 March 1995 from Bochum borrows "Pillars of the Earth", that has to be returned not later than 12 May 1998. This date will be written into the book. Else Wallersee from Dortmund, born 26 March 1975 borrows "The Medics" and "The Horse Whisperer". Both books have to be returned not later than 14 May 1998.

(a) Identify objects and their associations and depict them in an object diagram

(b) Identify class and their associations on the basis of the objects found and depict them in a class diagram.