

## BLG411E-SOFTWARE ENGINEERING

Makeup Midterm Exam – 07/12/2004

### EXAM RULES:

- Exam duration is 2 hours.
- Books and notebooks are closed.
- Handwritten formulas and weights sheet (half A4 paper) is allowed.
- Calculator and dictionary are allowed.

### Question 1)

A company wants to manage their customer subscriptions to the magazines that published monthly. Magazines are delivered to customers by mail. You are asked to develop the MSS (Magazine Subscription Software, “Dergi Abonelik Yazılımı”). A new customer is entered with the followings: Customer name, address, phone number. A new magazine is entered with the followings: Magazine title, unit price. MSS keeps track of all customer subscriptions for each magazine with the followings: Subscription date, subscription duration (years), payment amount. Full payment must be made at the time of subscribing, otherwise a warning message is displayed. The user should be able to query a given customer’s all current (unexpired) subscriptions. Once a month MSS will be used to conduct the followings:

- Print address labels for all current subscriptions of all magazines.
  - Print renewal notices for the subscriptions that will expire in that month.
  - Enter customer renewals of subscriptions.
- a) Using the Function Point approach, estimate the LOC for the project. Assume that the implementation will be in C++ language with a 30 LOC/FP. (15 points)
- b) Use the Intermediate COCOMO model to estimate the effort (PM) and project duration ( $T_{DEV}$ ); and determine how many people have to be employed. (15 points)
- c) Describe the following components of the Structured Analysis Model for this project. (50 points)
- Data Model (ERD)
  - Process Model (Level 0, Level 1, and Level 2 of DFD/CFD)
  - Behavioural Model (STD)
- d) Convert your final DFD into an architectural structure (design). (10 points)

**Question 2)** Briefly describe the components of a risk table and explain what Risk Mitigation Monitoring Management (RMMM) Plan is. In which phase of software process should RMMM Plan be considered?

(10 points)