THE OPEN UNIVERSITY OF SRI LANKA
B.SC. DEGREE PROGRAMME
OPEN BOOK TEST (OBT) – 2010/2011
CSU3277 – SOFTWARE ENGINEERING
DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE
DURATION: 1 ½ HOURS

Date: 21. 09. 2010 **Time: 4.00 pm – 5.30 pm**

Q_1

The Atlantis government needs to sell its bare lands belongs to several cities. So the government separated the land into small lots. However, the plan was to sell the selected land to the neighboring Islanders by a committee appointed by the government known as "Green Land Real Estates" (GLRE). The function of GLRE is to assist the sellers and the buyers. Each city has a mayor who acts as a seller for his city. When the sellers contact the GLRE committee, they assigned an agent to help the seller to complete a form known as "listing request". Then, the information about the land specification is taken from that request form and is stored in a file. Further, the personal information about the sellers is also taken by the agent in to another file known as "sellers file".

When a buyer contacts the GLRE, a form known as "buyer request" has to be filled. Within every two weeks the committee sends the specification about the lands wanted and the prospective addresses of the buyers to the sellers. This information is also sent to other agents as well. The agents will occasionally send information regarding the lands that will suit with the specification to the potential buyer.

When a buyer selects a land, an offer is made and it is forwarded through the GLRE to the seller. The seller will respond with either an offer acceptance or with another appropriate offer. When an offer is accepted a purchase agreement is signed by all parties. Later, the transaction is followed and a deed is written between the buyer and the seller.

Use the above details to draw a Context Diagram, followed by a zero level Data Flow Diagram.

THE OPEN UNIVERSITY OF SRI LANKA
B.SC. DEGREE PROGRAMME
CSU3277: SOFTWARE ENGINEERING
CLOSED BOOK TEST (CBT) – 2010/2011
DEPARTMENT OF MATHEMATICS & COMPUTER SCIENCE

DURATION: 1 ½ HOURS

Date: 27. 10. 2010 **Time: 4.00 pm – 5.30 pm**

Answer ALL Questions

01. Given below is a description of an insurance policy scheme.
The company wishes to give discount to the customers. The discount rate given for a customer for a particular month is decided based on the premium (monthly payment), total of discount amount added by the company so far (Total discount) , and the fact whether the customer pays his premium within the first seven days of the particular month or later.

- If the premium is less than Rs.10,000/=, then a usual discount of 5% is given.
- Such customers are categorized into two groups: special discount holders and normal discount holders.
- The special discount holders receive a discount rate of 7.5% if the premium is above Rs.2000/=, else it will be 6%.
- For the customers who's premium is either Rs.10,000/= or above, the usual discount rate is 8%.
- Any customer who pays his/her premium within the first seven days of the month will receive an extra 1% discount if the "Total discount" is above or equal to Rs.25,000/=.

I. Draw a decision tree to illustrate the above insurance policy scheme.
II. Construct a decision table for the same and obtain its reduced decision table.

02.
Cinderella needs to buy grapes to prepare vine for the royal ball. She is modeling the process of purchasing grapes from the contract growers. One of the processes of the primitive data flow diagram (DFD) of her process model is labeled as "Determine penalties" and the description of the above process is given below.

The requirements to purchase grapes from a contract grower are the grapes exceed the minimum required ripeness level, disease and damage free, and contain no items other than grapes. If so, the agreed contract price is paid. If any one of these requirements is not satisfied, then a penalty of 20% is reduced from the contract purchase price. If there are two problems with the grapes, then a penalty of 50% is reduced from the contract purchase price and at the same time if the grower is a continuous supplier, then it is noted for potential termination. In the most extreme case where the grapes fail to satisfy all the above requirements, the grapes are rejected and the grower's contract is noted for potential termination irrespective of the fact that the grower is a continuous supplier or not.

Develop a logical model to document the above process by using appropriate techniques.