



EASTERN UNIVERSITY, SRILANKA

SECOND EXAMINATION IN SCIENCE-2004/2005

SECOND SEMESTER (Oct./Nov.,2006)

CS205 – Software Engineering Principles

[Proper & Repeat]

Answer all questions

Time: 1Hour

Q1)

1.
  - a. What is the term “**Software**” defines?
  - b. Give three primary goals of Software Engineering?
  - c. Explain the four attributes of **well engineered software**.

3\*10=30 Marks

2.
  - a. What are the four fundamental process activities which are common to all software process or software development?
  - b. Draw a block diagram and explain the stages of software lifecycle in **Waterfall** modal.
  - c. Explain briefly the **Exploratory Programming** modal and give three disadvantages of this modal.

3\*10=30 Marks

3.
  - a. Explain the uses of **Data Flow Diagram (DFD)**.
  - b. Draw and name all the components used in drawing a Data Flow Diagram. Explain briefly the **Source** and **Sink**.
  - c. Give the five important guide lines or rules, you have to obey when you draw Data Flow Diagrams.
  - d. Explain briefly the **Context Diagram** and **Top-Level Diagram**.

4\*10=40 Marks

Q2)

1. Give the definitions for following terms:

- a. Class
- b. Object
- c. Behaviors
- d. Attributes

4\*5=20 Marks

2. Draw a sample Class Diagram for an object **Car** with suitable **attributes** and **behaviors**.

20 Marks

3. A Video Lending Shop wants to computerize their current lending system. The scenario regarding the Video Lending Shop is given below. The new customer must submit their Identity card number, Name, Address, Telephone Number to be a new member of the Shop, There are two categories of customers: One is the Usual Customer who can borrow maximum of two video per day, charge for one video is 100Rs. and lending period is only one day. The next category of customer is Advance Customer who can borrow up to five video per day, charge for one video is 75Rs. and the lending period is two days. The shop owner has divided the videos in categories like Horror, Comedy, War, Thriller and Melodrama etc.. To get the videos easily the shop owner has many numbered shelves to keep the videos.

The shop owner hired you to study the current system and to design a new system. The system must be able to produce daily report of overdue videos.

- a. Identify the objects in the above scenario.
- b. Identify all the possible attributes, primary keys and foreign keys.
- c. Find all relationships using matrix representation.
- d. Draw an Entity Relationship diagram (ER Diagram) for your system.
- e. Denote all cardinalities in the ER Diagram.
- f. Draw the Context Diagram for your system.

6\*10=60 Marks