



Subject :	Computer-based System Analysis & Design	Level : 3 <sup>rd</sup> Year	Code: 3322
Department :	Computers and Control Systems Engineering (CSE)	Time : 3 hrs	Date : 5-6-2014

Final-Term Examination- Second Semester 2013/2014

**Answer all questions (Full mark is 90)**

**Q1) Draw the use case diagrams of the following (15 marks) :**

- a- A simple library system (5 marks).
- b- A simple hotel reservation system (5 marks).
- c- A simple food mixer system (5 marks).

**Q2) (25 marks)**

During the development of a software project, it was noticed that just after finishing the specifications phase the client asked for a change in the requirements. This change requires additional work of about one week. Draw the workflow model, Gantt chart and specify the final delivery times (all development phases take 3 weeks each):

- a- using a waterfall model approach (9 marks)
- b- using an incremental model approach (9 marks)
- c- Specify roles of seven human resources that are needed in the project and the duration when they should be booked in cases (a) & (b) (7 marks).

**Q3) Choose the right answer (10 marks):**

3.1 Ten employees in a department can submit an expense form to have their expenses repaid. The manager is required to approve the expense forms. How many actors have we described?

- a- 1 actors
- b- 10 actors
- c- 2 actors**
- d- 12 actors

3.2 What can be captured by use cases? (Choose two answers)

- a- Data and control flow of the system
- b- User-interface specification of the system**
- c- Behaviours offered by the system
- d- Requirements of the system

3.3 In UML, what term describes a customer ordering books via the web?

- a- External system
- b- Subject**
- c- User
- d- Actor

3.4 While managing people, a project manager should take into account which of the following needs of his team:

- a- Basic needs (e.g. food, sleep, etc.);
- b- Personal needs (e.g. respect, self-esteem);
- c- Social needs (e.g. to be accepted as part of a group).
- d- all of the above

**Q4) (10 Marks)**

Specify whether the following statements are true or false and comment on the wrong statements

1. Architectural design is the process for identifying the sub-systems making up a system.
2. Software lifecycle starts when a software product is released and ends when the product is no longer available.
3. Software systems can only be of generic nature.
4. Software process is a structured set of activities required to develop software systems
5. COTS mean Computer Oriented Technology Systems.
6. Waterfall model is the most cost-effective model for software development
7. A Plan-driven process is easy to change.
8. In external system modeling perspective, you model the organization of a system.

**Q5) (20 Marks)**

1. List the steps of the Requirements Engineering Process using a diagram. (4 marks)
2. Explain three of the problems that can face a system analyst while collecting and analyzing the requirements. (6 marks)
3. Specify which of the following requirements are functional and which are non-functional: (10 marks)
  - Defining security access model
  - Defining user menus
  - mentioning users who are online
  - Payment using a credit card
  - Using HTTP protocol
  - Optimization of CPU resources
  - Usability of the software system
  - Code optimization
  - Data Integrity and Privacy
  - Use of Secure Socket Layer (SSL)

**Q6) (10 Marks)**

1. Specify the difference between the generic software development process and the generic system development process models using a diagram showing the common phases (5 marks)
2. Discuss the impact the Re-use Model has on the generic process model (5 marks)

(End of Exam)