

(Q1) [12 marks]

List the types of requirements in the FURPS+ Model. Mention at least two examples for each type.

(Q2) [15 marks]

1. List and Describe the 4 main phases of the UP (in sequence) [8 marks]
2. List the main 7 points that describe the basic structure of the Use Case [7 marks]

(Q3) [25 marks]

For a domain model, which of the following words/expressions could be candidates for:

1. Conceptual Classes [15 marks]
2. Associations [10 marks]

Played by, Airplane, Fly, Product specifications, Assign, Flight description, Pay, Payment,
Reservation, Item, Passenger, Refund policy, Product catalog, Airport, Manage, Pilot,
Contained in, Paid by, Cashier, Stock, Receipt, Employment contract, Contain, Capture,
Assigned to.

(Q4) [25 marks]

For an ATM system, please provide the following (start by stating your scope):

1. Use case diagram. [4 marks]
2. Use case description for all use cases. [8 marks]
3. Sequence Diagram for only one use case. [4 marks]
4. Class Diagrams. [6 marks]
5. The URPS+ requirements [3 marks].

Good Luck



(Q1) [15 marks]

- A. List and Describe the 4 main phases of the UP (in sequence) [8 marks]**
- B. List the main 7 points that describe the basic structure of the Use Case [7 marks]**

(Q2) [25 marks]

- C. Draw a detailed diagram describing a 3 weeks elaboration iteration (RUP). [15 marks]**
- D. Draw a detailed diagram for a N-Tier System indicating the business logic tier [10 marks].**

(Q3) [30 marks]

For an ATM system, considering the use cases of Withdrawal, Deposit, Transfer, and Administration please provide the following:

- A. Use case diagram. [5 marks]**
- B. Use case description for all use cases. [12 marks]**
- C. Sequence Diagram for only one use case. [5 marks]**
- D. Class Diagram. [8 marks]**

Good Luck



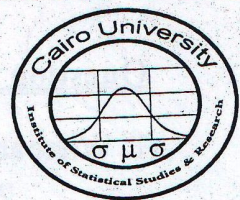
Cairo University

**Cairo University – Institute Of Statistical Studies
And Researches**

Department: Information Systems & Technology

Academic Year: 2017 Semester: First

Date: 31/12 Level: Diploma



**Course Title: Object Oriented
Analysis and Design**

**Course code:
IT521, CS519**

**Time:
3 Hours**

**Exam marks:
75**

**# Exam. Sheets:
3 pages**

Exam. Instructions : Answer all Questions

Question One Complete: (20 Marks)

1. JAD stands forand the success of JAD session depends on
2. Benefits of Object technology are.....
3. The State in State machine diagram represents
4. The requirement engineering requires two main activities and
5. Thedenotes the initiation of the use case by an actor, and the..... denotes that an actor communicates with the use case.
6. The analysis model is composed of three individual models,..... and.....
7. Adescribes an example of system use in terms of a series of interactions between the user and the system, while ais an abstraction that describes a class of scenarios.
8. Analysis focuses on producing a model of the system, called the
9. The five important UML Diagrams are

Question two: (20 Marks)

1. What are the requirement elicitation activities?
2. Compare between functional and non-functional requirements
3. Differentiate between the three types of analysis model
4. List the four types of scenario?
5. Compare between the application domain and the solution domain
6. List the six elements of a Use case description
7. What are the different types of classes in the analysis model
differentiate between them
8. What are the benefits of identifying the initial analysis objects in a
glossary?
9. What are the advantages of using JAD?
10. Define traceability? In your opinion it is suitable for which type of
project?

Question Three: (25Marks)

1. Consider the case of a book defined by the following statement: "A book is composed of a number of parts, which in turn are composed of a number of chapters. Chapters are composed of sections." It also must include the following attributes:
 - a book includes a publisher, publication date, and an ISBN
 - a part includes a title and a number
 - a chapter includes a title, a number, and an abstract
 - a section includes a title and a number.
 - a. Draw a class diagram with multiplicity
 - b. Add an abstract class and an inheritance relationship if needed
2. a. Draw a Use case diagram for an Air Line Reservation

Question Four: (10Marks)

If you're an analyst in one of a big company, in your opinion what is the right sequence of drawing the UML diagrams? Justify your answer