Al Imam Mohammad Ibn Saud Islamic University
College of Computer and Information Sciences

Computer Science Department

Course Title:	Software Engineering
Course Code:	CS310
Course Instructors:	Dr Alqahtani, Ms Aljaloud
Exam:	Midterm Exam 1
Semester:	Spring 2019
Date:	06/07/1440 – 13/03/2019
Duration:	60 minutes
Marks:	25

Privileges: ☐ Open Book ☐ Open Notes
☐ Calculator Permitted ☐ Laptop Permitted

Student Name:	
Student ID:	MODEL ASNWERS
Section No.:	

Instructions:

1. Answer 3 questions; there are **3** questions in **6** pages.
2. Write your answers directly on the question sheets. Use the ends of the question pages for rough work or if you need extra space for your answer.
3. If information appears to be missing from a question, make a reasonable assumption, state your assumption, and proceed.
4. **No** questions will be answered by the invigilator(s) during the exam period.

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Question	**Student Marks**	**Question Marks**
1		7
2		7
3		11
Total		**25**

Question 1: To be answered in **(15) Minutes [ ] / 7 Marks**

(0.5 points each) Circle the correct answer. T is true, F is false.

1. T / F 'Scaling out' is concerned with using agile methods for developing large software systems that cannot be developed by a small team.
2. T / F Maintainability, usability, efficiency and dependability are attributes for a bad software.
3. T / F Software process defined as a structured set of activities required to develop a software system.
4. T / F Agile process are process where all of the process activities are planned in advanced.
5. T / F Water-fall is an incremental development model.
6. T / F Reused-oriented software engineering is based on assembling the system from existing components. May be plan-driven or agile.
7. T / F The main drawback of the waterfall model is the difficulty of accommodating change after the process is underway.
8. T / F The benefits of incremental development model is the cost of accommodating changing customer requirements is reduced
9. T / F Feasibility study is not one of the main requirement engineering processes.
10. T / F "Individuals and interactions over comprehensive documentation" is one of the Agile manifesto values.
11. T / F In agile method, prioritizing changes can be difficult.
12. T / F In XP, a customer or user is part of the XP team and is responsible for making decisions on requirements.
13. T/ F User requirements are expressed as scenarios or user stories.
14. T/F The Scrum approach is a general agile method but its focus is on managing iterative development rather than specific agile practices.

Question 2: To be answered in **(20) Minutes [ ] / 7 Marks**

(0.5 points each) Multiple choices. Choose ONLY the correct answer.

1. Which one model is not an agile development method:
   a. Scrum
   b. eXterm Programming (XP)
   c. Kanban
   d. Waterfall
2. Software engineering approach is used to achieve:
   a. Better performance of hardware
   b. Error free software
   c. Reusable software
   d. Quality software product
3. The process of arranging requirements into coherent clusters and grouping them is:
   a. Requirement discovery
   b. Requirement organization and classification
   c. Requirement prioritization and negotiation
   d. Requirement specification
4. If requirements are easily understandable and defined, which model is best suited?
   a. Waterfall model
   b. eXtreme Programing model
   c. Spiral model
   d. None of the above
5. Which phase is not available in software life cycle?
   e. Coding
   f. Testing
   g. Maintenance
   h. Abstraction
6. Which one is a functional requirement?
   a. Efficiency
   b. Usability
   c. Security
   d. None of above

7. SRS stands for
    a. Software requirements specification
    b. Systematic requirements specifications
    c. System requirements specification
    d. None of the above
8. Which one of the statements is not correct during requirement engineering
    a. Requirement are difficult to uncover.
    b. Requirement are subject to change
    c. Requirements should be consistent
    d. Requirements are always precisely known.
9. Process stages of reuse-oriented software engineering include
    a. Component analysis
    b. Requirement modifications
    c. System design with reuse
    d. All of above.
10. The process of converting the system specification into an executable system.
    a. Software design and implementation
    b. Requirement engineering
    c. Software maintenance
    d. Software validation and verification.
11. Verification and validation (V & V) is intended to show that a system conforms to its specification and meets the requirements of the system customer. Validation is related
    a. to building the RIGHT SYSTEM.
    b. to building the SYSTEM RIGHT.
    c. to meet the system requirement.
    d. to design the system right.
12. Change avoidance, where the software process includes activities that can anticipate possible changes before significant rework is required.
    a. Waterfall model.
    b. Prototype model.
    c. Incremental development model.
    d. None of above.

13. The most important feature of spiral model is
    a. Requirement analysis.
    b. Risk management.
    c. Quality management.
    d. Configuration management.
14. RUP stands for
    a. Rational Undefined Process.
    b. Record Unit Point.
    c. a and b.
    d. Rational Unified Process.

Question 3: To be answered in **(25) Minutes [ ] / 11 Marks**

Short answer.

1. **(2 points)** What is the different between plan-driven development and agile development?

   Plan-driven development:

   Chapter 2 slide 5.

   Agile development:

   Chapter 2 slide 5.

2. **(2 points)** In Scrum methodology, what is the different between product owner and scrum master?

   Product owner:

   Chapter 3 slide 36.

   Scrum master:

   Chapter 3 slide 36.

3. **(1.5 points)** What are the types of non-functional requirements?

   Chapter 4 slide 15.

4. Imagine you were assigned to build a web site system for an airline company that intends to establish an online shopping system (e.g., flights and hotel reservation). The system should help the customers in searching and purchases their flights tickets, and the airline' employee in managing the customers reservations and print reports to the head office.

   According to the above system description, answer the following questions.

   A – **(1.5 points)** Give three possible stakeholders in the system.

   Customer, ticket sales person, system admin, owner, ...etc.

B – **(2 points)** Write two complete functional requirement related to customers in the system.

The system shall enable customers to register their details into the system to purchase the tickets.

The system shall enable the airlines employee to view and manage customers' flights reservations. etc.

C – **(2 point)** Write two possible non-functional requirement for this system.

The system shall run on any computer with more or equal to 2.0 GB of RAM. The system should securely protect the user's credit card information if system got attack. Etc.