	King Saud University **College of Computer and Information Sciences** **Computer Science Department**		
	Course Code:	**CSC 343**	
	Course Title:	**System Analysis and Design**	
	Semester:	**Spring 2020**	
	Exercises Cover Sheet:	**Final Exam**	**3:00 hours**
Student Name:	…….		
Student ID:	…….		
When you have finished submit your answer sheet to the e-mail: shammami@ksu.edu.sa			

Good luck!

Exercise 1: *(5 points)*

Al-Hilal-Football Club announces the election of new executive committee. The elections were held at Al-Hilal Club Housing using an elective machine. The election will be strictly concerning memberships. Membership can register to vote in an upcoming election. The membership can see a list of candidates and select one to vote for. The machine should check that each membership is authorized to vote. The administrator will also want to print a summary of the total votes for each candidate, and a list of the memberships who have voted, and a list of those who haven't. The Saudi Pro League (SPL) can list a complete record of who voted for whom.

Draw a Use Case Diagram for the elective machine.

Exercise 2: *(4 points)*

Draw a Sequence Diagram for the process of memberships' registration to vote in an upcoming election. Assume that a membership starts by checking the online electoral registration database, to see if he is listed. When he finds that he is not listed, he contacts the administrator, who sends him an application form. As part of the application, he needs to contact the Saudi Pro League (SPL), to request a copy of his registration record at SPL, as persons who is not registered as a fan of the team cannot vote. He then sends the registration record along with the application form to the administrator. The administrator checks the form is filled out correctly, and then enters his details in the registration database. The administrator then sends an acknowledgement to the voter,

who finally checks the online registration database again to confirm that his application was processed.

Exercise 3: *(6 points)*

The Saudi Pro League (SPL) is made up of sixteen teams. Each team is composed of twenty to twenty-four players, and one player captains the team.

A team has a name and a record. Players have a number and a position. SPL teams play games against each other. Each game has a score and a location. Teams are led by a coach. A coach has a level of accreditation and a number of years of experience, and can coach only one team. Coaches and players are people, and people have names and addresses.

Draw a class diagram for the description above. Make sure to show attributes, multiplicities and aggregations/compositions, inheritance where appropriate. No need to show any operations.

Exercise 4: *(5 points)*

Draw the UML Statechart diagram of the online pharmacy ordering system:

1. On the event of an order being received, we transit from our initial state to unprocessed order state.
2. The unprocessed order is then checked.
3. If the order is rejected, we transit to the rejected order state.
4. If the order is accepted, we transit to accepted order state and if we have the items available we transit to the satisfied order state.
5. However, if the items are not available we transit to the awaiting order state.
6. After the order is satisfied, we transit to the final state.