National University of Computer and Emerging Sciences, Lahore Campus

	Course Name:	Software Engineering Technologies	Course Code:	CS527
	Program:	MS (SPM)	Semester:	Fall 2018
	Duration:	150 Minutes	Total Marks:	28
	Paper Date:	26 DECEMBER, 2018	Weight	28
	Section:	ALL	Page(s):	1
	Exam Type:	Final Exam (SUBJECTIVE TYPE)		

Student : Name:_____ Roll No._____ Section:_____

Instruction/Notes: Attempt all questions. Programmable calculators are not allowed.

1. Imagine you are the Scrum Master & Lead Design Engineer for the development of a microprocessor. You have made a few earlier releases but most of them had issues which required fix(es). Like other hardware development projects, if an issue is identified in test, the fix takes a complete re-design/re-development of the component (most of the times) which consumes a whole Sprint and you ONLY have one Sprint left to release this new feature. Assume your Product Backlog has the User Stories finalized. You are working in Agile methodology and have monthly Sprint cycles. You have been asked by the CTO to plan and present the end-to-end Execution of your next Sprint lifecycle.

   You need to identify and explain in detail ALL Sprint artifacts and events you plan to perform. To ensure this is your final release, what process(es) and practice(s) you will/won't exercise during the Sprint lifecycle artifacts and events to ensure your Sprint delivers a bug-free final release.

   Remember you are working in a team developing hardware, with only one cycle left to deliver the feature, and the traditional Sprint processes may/may not require modification(s).

2. You have been asked to design a security system that requires good authentication and authorization. The system must be designed so that communications between parts of the system cannot be intercepted and read by an attacker. Performance of the designed system is critical so that the security is guaranteed.
   Suggest the most appropriate client–server architecture for the system above - by explaining
   a. Why the particular architecture is chosen for the system above.
   b. Characteristics and design of the chosen architecture, in detail - pertaining to the problem statement above.
   c. Architecture's design issues, risks and advantages - pertaining to the problem statement above.

3. Answer the following questions in the context of PMI practices
   a. What is 'Estimate Activity Duration' in context of Project Time Management? Explain any 2 Tools and Techniques employed for this activity.
   b. What is a Communications Management Plan? List and briefly explain, all important contents this plan should have.
   c. What is meant by 'Develop Project Management Plan' activity within the Project Integration Management? Provide an explanation. Also identify other subsidiary plans it has.

4. (a) Define and explain what is meant by Software Re-engineering Process Model? Describe any two Re-engineering paradigms/activities.

   (b) Describe PaaS, its key features and logical design in the context of Cloud Computing.