**Northeastern University – Silicon Valley**

CS 6650 Scalable Dist Systems

**Homework #5** [100 points]

***INSTRUCTIONS: Please provide clear explanations in your own sentences, directly answering the question, demonstrating your understanding of the question and its solution, in depth, with sufficient detail. Submit your solutions [PDF preferred].* Include your full name*. Do not email the solutions.***

1. Security Engineering Ch. 11 please answer

11.2 [5 points]

11.3 [10 points]

* 1. (please ignore the last sentence – parallel processor enhancement part) [10 points]

1. Multimedia Apps Ch. 20 please answer

20.2 [5 points]

20.3 [10 points]

20.4 [10 points]

1. Ch 18 Rplication [25 points]
2. 18.1
3. Study only pages 2 to 7 of the IBM Redbook

### [IBM High Availability Solution for IBM FileNet P8 Systems](https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjYu6Ky0an7AhUHm2oFHUrxD6M4HhAWegQIIxAB&url=https%3A%2F%2Fwww.redbooks.ibm.com%2Fredbooks%2Fpdfs%2Fsg247700.pdf&usg=AOvVaw2smGgtV-zOXwUdKFnZMCxD)

Define Availability.

For a typical web app cluster (Web server, App server, Db server) with Active-Active redundancy using a total of 6 servers (2 replicas of the same web cluster), explain how Availability calculations are made and how HA can be achieved. Show your calculations.

1. Ch 19 Mobile computing [25 points]
2. 19.1
3. Consider the Uber car hiring platform. In this context, what is adaptation? How is it used in the overall design and what problems/requirements is it addressing?