Homework #5

Due Date: April 15th, 2020, at the beginning of class

Name: ___________________________ NetID: __________________

Directions: Write complete, legible answers to each of the following questions. A problem identified as “M.N(x,y)” references parts x and y of exercise N from chapter M of the Connolly/Begg text, 6th edition. Show your work, when appropriate, for possible partial credit. This is an individual project; do your own work. We will post our solutions 24 hours after the due date (remember, you can use one late day on homeworks, so we can’t give solutions on the due date).

On or before the due date, by the start of our pre–virus class time, submit a PDF version of your solutions (the turnin folder is cs460h5). Want to hand–write your answers but no longer have access to a scanner? There are many smartphone apps that convert sequences of images into PDFs (e.g., Adobe Scan, Clear Scan, TurboScan, ScanBot, and Microsoft Office Lens). Solutions submitted more than 24 hours after the due date and time will not be accepted.

1. (5 points) 14.4 (In your own words!)
2. (5 points) 14.6 (Ditto!)
3. (5 points) 14.7
4. (5 points) 14.10
5. (25 points) 14.16 (all parts)
6. (5 points) 15.2
7. (5 points) 15.4
8. (5 points) 15.8

9. (5 points) Consider this schema: \( R(M,N,O,P,Q,R,S) \). Also consider the FDs \( N \rightarrow MOPQ \) and \( Q \rightarrow RS \). Compute both \( N^+ \) and \( S^+ \).

10. (10 points) Given the set of FDs \( F = \{ W \rightarrow Z, WY \rightarrow X, Y \rightarrow Z, W \rightarrow XY \} \), find a minimal cover of \( F \).