1. Consider the entities students, faulty and courses, with the obvious relationships. Create an ER diagram generalizing (total and disjoint) students and faculty into a people entity and aggregating the faculty-courses relationship. Give people a composite address attribute, a multivalued phone attribute and a primary key ssn. Give students a derived attribute GPA. Give the students-courses relationship set a grade attribute. Give courses a cid primary key.
2. Provide the SQL to create the table for the students-courses relationship set. Include all required constraints.
3. (a) Allow everyone to read the table you created in the previous question. 

(b) What is a major issue in allowing students to see only their own rows in this table?
4. Consider the relation $R = (A, B, C, D, E)$ where the domain of each attribute is integer and the functional dependencies $F =$

- $AB \rightarrow DE$
- $D \rightarrow AC$
- $E \rightarrow AC$

(a) Find a 3NFLJDP decomposition for $R$ using the algorithm presented in class. (10)

(b) Find a BCNFLJ decomposition for $R$ using the algorithm presented in class. (10)
5. Given the relation $R = (A, B, C, D, E)$, provide two non-trivial functional dependencies such that $R$ is in 4NF but not 5NF.

6. Prove or disprove: If $AB \rightarrow CD$ then $A \rightarrow C$ and $B \rightarrow D$.

7. List each of Armstrong’s Axioms and its definition.
8. What does PHP stand for? (2)

9. What does AJAX stand for? (2)

10. What is the difference between a two-tier and a three-tier web/database architecture? (2)

11. What is a cookie used for? (2)

12. What is the SQL command to remove database privileges? (2)