**Tutorial 1**

**GC 312**

**Q1:**

**Consider the relation R = (A, B, C, D) with the following functional dependencies:**

**• (FD1) A B**

**• (FD2) C D**

**a) Determine the candidate key(s) of R.**

**b) Determine the highest normal form R is in. Explain your answer. (For example, if you think that R is in 3NF, then you should explain why it is in 3NF and why it is not in BCNF.)**

**Q2:**

**Consider the relation R = {CourseNo, SectionNo, OfferingDept, Credit-Hours, CourseLevel, InstructorSSN, Semester, Year, Days\_Hours, RoomNo, NoofStudents}**

**Suppose the following FDs hold on R:**

**• (FD1) CourseNo → OfferingDept, CreditHours, CourseLevel**

**• (FD2) CourseNo, SectionNo, Semester, year → Days\_Hours, RoomNo,**

 **NoofStudents, InstructorSSN**

**• (FD3) RoomNo, Days\_Hours, Semester, Year → InstructorSSN,**

 **CourseNo, SectionNo**

1. **Determine the set of attributes that form keys of R.**

 **b) Normalize this relation to BCNF?**