**DBMS Assignment**

**Question 1**

**Entities along with their attributes:**

**1.** Campus (Strong entity)

- ID (Key)

- Name

- Address

- City

- State

- Country

- URL

2. College (Strong entity)

- ID (Key)

- Name

- Phone

- Email

- URL

3. Unit (Strong entity)

- ID (Key)

- Name

- Phone

- Type

- Job Description

4. Course (Strong entity)

- Code (Key)

- Number

- Credit

- Title

5. User (Strong entity)

- ID (Key)

- First Name

- Last Name

- Email

- Phone (multi-valued)

6. Faculty (Weak entity)

- Rank

7. Student (Weak entity)

- Type

8. Tutor (Strong entity)

- Pay Rate

- List of Courses (multi-valued)

9. Supervisor (Strong entity)

- Office Hours

10. On-Call (Strong entity)

- ID (Key)

- Location

- Date

- Start Time

- End Time

- Task Type (Derived attributes: Classroom Assistance, Lab Assistance, or Exam Monitoring)

- Status (Derived attributes: Assigned, Missed, or Attended)

11. Appointment (Strong entity)

- ID (Key)

- Location

- Date

- Start Time

- End Time

- List of Courses (multi-valued)

- Status (Derived attributes: Scheduled, Canceled, or Attended)

Relationships:

- Campus has many Colleges (1: N)

- Campus has many Units (1: N).

- College may offer many Courses (1: N)

- Tutors can tutor in many Colleges (M: N)

- Tutors are supervised by Supervisors (1: N)

- Supervisors can supervise many Tutors (1: N)

**Question 3**

**(b)**

The relationship "HAS PHONE" would be redundant if: There was a direct relationship between Employee and Phone, meaning that each employee is directly associated with one or more phones without the need to go through the Department entity. In this case, the "HAS PHONE" relationship wouldn't add any new information because you could determine an employee's phones through their direct relationship.