NATIONAL INSTITUTE OF TECHNOLOGY PATNA
ASSIGNMENT 1, October 2021, SESSION: 2021-22 ODD SEMESTER

Program**: B.Tech** **Semester: 5th** **Department:** CSE
Course Code: CS5401 **Course Name:** Database Management Systems
Full Marks: 10 Submission Date: **On or before 25-10-2021(10 PM)**

A database is desirable for a tool manufacturing firm named "XYZ tool Engineering Works" that keeps track of all full-time personnel, their skills and projects assigned, department (and divisions) worked in, engineer professional associations belonged to, and engineer desktop computers allocated. During the requirements collection process—that is, interviewing the end users—we obtain three views of the database.

The first view, a management view, defines each employee as working in a single department, and defines a division as the basic unit in the company, consisting of many departments. Each division and department have a manager, and we want to keep track of each manager.

The second view defines each employee as having a job title: engineer, technician, secretary, manager, and so on. Engineers typically belong to professional associations and might be allocated an engineering workstation (or computer). Secretaries and managers are each allocated a desktop computer. A pool of desktops and workstations is maintained for potential allocation to new employees and for loans while an employee's computer is being repaired. Any employee may be married to another employee, and we want to keep track of this relationship to avoid assigning an employee to be managed by his or her spouse.

The third view involves the assignment of employees, mainly engineers and technicians, to projects. Employees may work on several projects at one time, and each project could be headquartered at different locations (cities). However, each employee at a given location works on only one project at that location. Employee skills can be individually selected for a given project, but no individual has a monopoly on skills, projects, or locations.

i) First construct the ER data model of each individual views based on requirements. [6]
ii) Second construct the ER data model globally by integrating of the three views. [4]