Zealot Industries Inc. is a manufacturing firm with over 200 employees. The firm has been expanding well beyond the founders' expectations. However, it faces a severe hindrance to additional expansion — the absence of a computerized Human Resource Management System (HRMS) which could facilitate management of human resource related issues.

Precision Software Inc. is a software engineering firm contracted to develop and implement the HRMS project. After a preliminary meeting with Zealot's senior management, the lead software engineer on the Precision Software team documents his findings as follows:

♦ A detailed employee profile consists of the employee's personal information, employment history, education history and beneficiary information.
♦ Every employee belongs to a department, and is assigned a specific job description (there may be more than one employees with the same job description).
♦ Employees are classified according to the salary range that they fall in.
♦ Each employee has a compensation package which outlines basic salary and other benefits. Benefits include health insurance, retirement plan, life insurance, professional development allowance, housing allowance, traveling allowance, entertainment allowance, vacation allowance, education allowance.
♦ A payroll log keeps track of remuneration paid out to employees.
♦ Each employee is assigned to at least one project; the number of employees assigned to a project depends on the size and complexity of the project.

1. Identify all information entities (object types) mentioned or implied in the case.   [10]

2. Identify all relationships among the entities (object types) and represent them on an ERD.   [20]

3. Use the information in the case, combined with the information conveyed by the E-R diagram and your own intuitive design skills to propose relations and their associated attributes for each of the entities represented on the E-R diagram, in a Relation-Attributes List (RAL). For each entity, clearly indicate its primary key, a few other essential attributes, and any foreign key(s) it may contain. You may also introduce additional relation(s) to take care of M:M relationship(s) which may exist.   [60]

Total possible points: 90