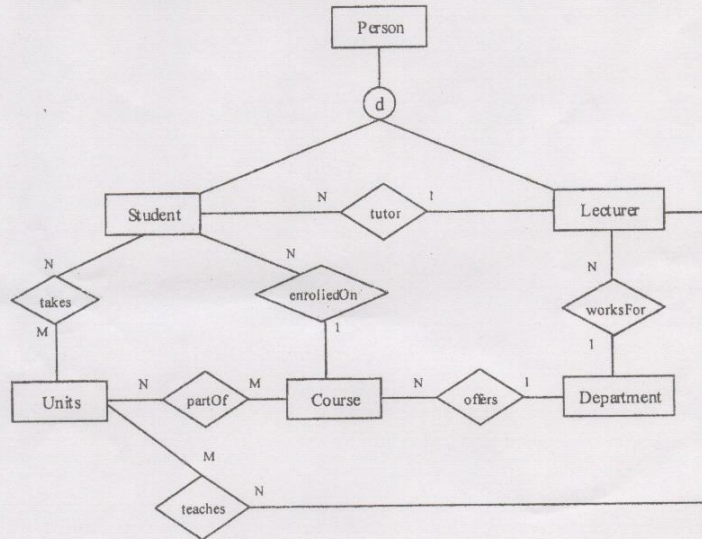


**N.B.** (1) Question No.1 is **compulsory**.  
(2) Answer any **four** questions from Question Nos.2 to 7.

1. (a) What is EERD ? What are the Constraints on Specialization and Generalization ? **10**  
(b) RMSoft is a reputed software company. The employees belong to various categories like managers, secretaries, technicians and engineers. Some are salaried and rest are hourly paid employees. Manager manages various projects. Trade union exists for hourly paid employees. Engineers recruited from different engineering streams. Technicians are graded according to the standard 'TGrade'. Secretaries possess typing skills. You have been appointed as a DBA. You are expected to analyze the information and design an EER model as a first stage in building payroll system. **10**
2. (a) Write an ODL Schema for the given EERD :— **10**



- (b) Explain OQL with respect to database entry points, query result and path expression. **10**
3. (a) Explain SQL3 features with examples. **10**  
(b) Write the difference between the three approaches RDBMS, ODBMS and ORDBMS. **10**
4. (a) Explain various types of transparencies in a distributed databases. **10**  
(b) What do you mean by data fragmentation ? Explain the types and three correctness rules of fragmentation. **10**
5. (a) Differentiate between XML DTD and XML Schema with an example. **10**  
(b) Write an xml code for breakfast menu. The code should display food — name, price, description and calories. **10**
6. (a) Explain Active databases with an example. **10**  
(b) Explain temporal databases with an example. **10**
7. Write short notes on any **four** of the following :— **20**
  - (a) Xpath
  - (b) Xquery
  - (c) Complex Objects
  - (d) GIS
  - (e) Spatial Databases
  - (f) Deductive Databases.